

THE Indicator

MAY 2011

Vol. 92 • No. 5

ISSN0019-6924



MIDDLE ATLANTIC REGIONAL MEETING

SPONSORED BY THE
Chemical Society of Washington (CSW)

May 21-24, 2011
on the campus of the
University of Maryland
College Park, MD
hosted by the Chemical
Society of Washington

(See article at bottom of page 11.)

RECYCLE THIS PAPER

PERIODICALS POSTAGE

www.theindicator.org
www.njacs.org www.newyorkacs.org



Vacuum Inlet Traps

Because vacuum pumps don't grow on trees.



Oil Filtration Systems

Because a really old, really healthy vacuum pump is a beautiful thing.



Oil Mist Eliminators

Because no one wants to eat oily mist.



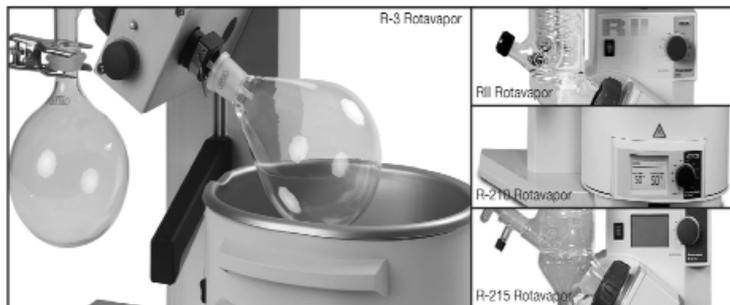
PRODUCTS

A Division of Mass-Vac, Inc.

247 Rangeway Road ■ PO Box 359 ■ North Billerica, MA 01862
978 667 2393 Fax 978 671 0014 sales@massvac.com www.massvac.com

A BUCHI for every budget!

BUCHI



The Rotavapor® R 3 provides a value priced high quality BUCHI alternative to unreliable imitation brands for cost-conscious customers. Now, there is no longer a reason to compromise quality, safety, or peace of mind when choosing a rotary evaporator – **there is a Buchi for every budget!**

BUCHI Corporation
1-877-MYBUCHI
or visit www.mybuchicom


Quality in your hands

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

1 Milbark Court West, Homosassa, FL 34446

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

linatkins@tampabay.rr.com**Advertising Manager** - VINCENT GALE

MBO Services, PO Box 1150

Marshfield, MA 02050-1150 • 781-837-0424

vincegale@mboervices.net**INDICATOR COMMITTEE****Chair, DR. LES McQUIRE**

17 Crown Drive, Warren, NJ 07059

908-334-5473, 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, jespersn@stjohns.edu**North Jersey Section Rep.****DR. ANITA BRANDOLINI**

TAS, Ramapo College, 505 Ramapo Valley Rd.,

Mahwah, NJ 07430 • 201-684-7753

abrandol@ramapo.edu**Web Masters**

NY Section - DR. BRIAN GIBNEY

postmaster@newyorkacs.org

NoJ Section - PAUL TUKEY

tukey@verizon.net**NEW YORK SECTION**<http://newyorkacs.org>**Chair, DR. HIROKO I. KARAN**

Department of Physical, Environmental and

Computer Sciences, Medgar Evers College, CUNY

1638 Bedford Avenue, Brooklyn, NY 11225

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

hiroko@mec.cuny.edu**Chair-Elect, DR. JAIMELEE IOLANI RIZZO**

Department of Chemistry and Physical Science

Pace University, 1 Pace Plaza, New York, NY 10038

212-346-1761 • Fax 212-346-1256

jrizzo@pace.edu**Secretary, DR. BRIAN GIBNEY**

Dept. of Chemistry, Brooklyn College - CUNY

2900 Bedford Avenue, Brooklyn, NY 11210

718-951-5000 x6636 Fax: 718-951-4607

brg33@newyorkacs.org**Section Office**

St. John's University, Chemistry Dept.

8000 Utopia Parkway, Jamaica, NY 11439

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

njesper1@optonline.net**NORTH JERSEY SECTION**<http://www.njacs.org>**Chair, DR. JIWEN CHEN**

Bristol-Myers Squibb Company, 3B 0.01

311 Pennington-Rocky Hill Rd., Pennington, NJ 08534

609-818-6319

jiwen.chen@yahoo.com**Chair-Elect, DR. AMBER CHARLEBOIS**

Fairleigh Dickinson University

285 Madison Ave., M-SB1-01, Madison, NJ 07940

973-443-8761

charleb@fd.edu**Secretary, BETTYANN HOWSON**

49 Hillside Avenue, Madison, NJ 07940-2612

973-822-2575; chemphun@optonline.net**Section Office**

49 Hillside Avenue, Madison, NJ 07940-2612

973-822-2575; chemphun@optonline.net**THE Indicator** 

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

CONTENTS

Advertisers Index	24
Call for Nominations	23
Chemistry at the NJ Shore	7-11
MARM	11
New York Meetings	17-19
North Jersey Meetings	12-13
Professional/Product Directory	24

EDITORIAL DEADLINES

June	April 15
September	July 15
October	August 15
November	September 15
December	October 15
January 2012	November 15
February	December 15
March	January 15, 2012
April	February 15
May	March 15

Visit Uswww.TheIndicator.org

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.

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 and monthly emailings. Non-members are invited to read it online. Members should register their email addresses at www.acs.org/update.**

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

May Calendar

NEW YORK SECTION

Wednesday, May 4, 2011

Westchester Chemical Society
See page 17.

Thursday, May 5, 2011

Long Island Subsection
See page 18.

Thursday, May 5, 2011

Chemical Marketing & Economics Group
See page 18.

Saturday, May 7, 2011

59th Annual Undergraduate Research
Symposium
See page 19.

Tuesday, May 24, 2011

Biochemical Topical Group
See page 19.

NORTH JERSEY SECTION

Thursday, May 5, 2011

NoJ Teacher Affiliates Executive Meeting
See page 12.

Thursday, May 5, 2011

Careers in Transition
See page 13.

Wednesday, May 11, 2011

ChemTAG
See page 13.

Monday, May 17, 2011

NoJ Executive Committee Meeting
See page 12.

Tuesday, May 17, 2011

Mass Spectrometry Topical Group
See page 13.

Tuesday, May 17, 2011

Laboratory Robotics Discussion Group
See page 13.

Wednesday, May 18, 2011

NMR Topical Group
See www.njacs.org.

Friday, May 20, 2011

Chromatography Topical Group
See www.njacs.org.

**Deadline for items
to be included in
the June 2011 issue
(Regional Buyer's Guide)
of *The Indicator* is
April 15, 2011.**

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



Robertson Microlit Laboratories

Where speed and accuracy are elemental

Elemental CHN, S, X, Analysis (*same day service*)

Metals by ICP-OES, ICP-MS, A/A

FTIR, UV/VIS Spectroscopy

Ion Chromatography

Bioavailability

Polarimetry

DSC, TGA, melting point

KF Aquametry, Titrimetry

1705 U.S. Highway 46 • Suite 1D • Ledgewood, NJ 07852 • 973.966.6668 • F 973.966.0136

www.robertson-microlit.com • email: results@robertson-microlit.com

Rapid Results • Quality • Accuracy • Competitive Pricing

THIS MONTH IN CHEMICAL HISTORY

By Harold Goldwhite, California State University, Los Angeles • hgoldwh@calstatela.edu

For this column and the next I am drawing on a booklet by Jon Eklund of the Department of Science and Technology of the Smithsonian Institution and published by the Smithsonian Institution Press in 1975. It is charmingly titled "The Incomplete Chymist: Being an Essay on the Eighteenth Century Chemist in his Laboratory, with a Dictionary of Obsolete Chemical Terms of the Period". Eklund's general thesis is that the so-called Whig-inductivist approach to earlier chemistries is to be avoided. By Whig-inductivist he means "... describe the experiment, give its contemporary interpretation, translate the phenomenon into modern terms, give the modern interpretation, and then make a normative judgment on the basis of the closeness of fit between the original and the modern interpretation." Thus we might "criticize" Joseph Priestley for not recognizing that his "dephlogisticated air" was actually the element oxygen.

Eklund also points out that historians have paid too little attention to the actual practices of chemists of earlier periods. "Indeed, for historians to assume that the chemists of the eighteenth century [including such towering figures as Priestley, Scheele, Cavendish and Lavoisier] were primarily concerned with theory may be to ignore most of their working hours." Eighteenth century chemical literature such as Priestley's monumental "Observations on Airs" is for the most part full of the details of chemical experiments and relatively little is written about theory.

Early textbooks of chemistry reinforce this view of the subject. Nicholas Lemery's text was one of the most popular of the early eighteenth century, and he defines chemistry in very practical terms as: "... an art which teaches how to separate the different substances which are found in a compound." Georg Ernst Stahl, the author of the rather successful phlogiston theory of combustion, and thus surely no enemy to theoretical speculation, called chemistry "... the art of resolving mixt, compound, or aggregate Bodies into their Principles and of [re]composing such bodies from those Principles." Note the use of the word "art" in both definitions. An art, at the time, was considered as something practical that could be taught, learned, and mastered. (Hence, "Master of Arts!"). These chemists, and most of their contemporaries who wrote textbooks, were insistent on chemistry being an eminently practical subject in which both analysis and synthesis played crucial roles.

The point is that to understand eighteenth century chemistry we need to appreciate the actual working practices of the chemists of that period. In 1975 when Eklund wrote his booklet this side of chemical history was relatively ignored by most historians of chemistry perhaps because of their own lack of hands-on laboratory experience. The situation has improved somewhat in the past quarter century, but detailed accounts of what eighteenth century chemists actually did are still relatively rare. I'll give just one example of a concern that I have. When Lavoisier did his remarkable experiments on the "prodigious" gain in weight of phosphorus and sulfur upon combustion in air, what actually did he do? The products are not the most tractable. Sulfur dioxide is a choking gas; and phosphorus pentoxide an extraordinarily hygroscopic solid.

Eklund draws on the accounts of Pierre-Joseph Macquer (one of Lavoisier's contemporaries) who has left a description of eighteenth century laboratory practice. Some of Macquer's comments have a very modern ring: "...it is extremely disagreeable and difficult to continually stop in the midst of the most interesting researches, and to use considerable precious time in cleaning vessels, arranging them, putting on inscriptions, etc. These things are quite capable of cooling or retarding the progress of genius. They are tedious and disgusting, but they are necessary." Excellent advice for our graduate students.

A significant problem in the eighteenth century laboratory was the lack of good ventilation. The better situation for a laboratory was on the uppermost floor of a building with a good high chimney to provide a draught. The downside of such a location was having to carry all supplies, equipment, fuel, and water upstairs. Fuel was critical – and it was primarily charcoal. The major means of carrying out chemical change at that period was the application of heat. As Lemery says: "...indeed almost all of the chemical operations are made to occur by means of fire."

MAY HISTORICAL EVENTS IN CHEMISTRY

By Leopold May, The Catholic University of America, Washington, DC 20064

May 1, 1824

Alexander W. Williamson, who was a researcher on alcohols and ethers, was born on this day. He was the first to suggest the intermediate compound theory of catalysis with Kay and synthesized ethylene glycol.

May 4, 1844

One of the inventors of Atwater Rosa Benedict respiration calorimeter, Wilbur O. Atwater, was born on this day. He established the first agricultural experimental station in the United States at Wesleyan College and determined the chemical composition and nutritive values of fish and animal tissues.

May 5, 1811

Two hundred years ago on this date John W. Draper was born. He was a pioneer in photography; improved on Daguerre's process, and was the first ACS president.

May 10, 1830

François M. Raoult, who was born on this day, discovered the law (Raoult's Law) that vapor pressure of a solution is proportional to the number of molecules per unit in the solution.

May 12, 1803

Justus von Liebig, who is known as the "Father of Agricultural Chemistry", was born on this day. He perfected methods for quantitative organic analysis, divided foods into carbohydrates, fats, and protein, and invented the Liebig condenser.

May 14, 1853

Gail Borden applied for a patent on commercial condensed milk on this date.

May 16, 1845

Ilya Ilyich Mechnikov, discovered the phenomenon of phagocytosis; theory of cellular immunity Nobel Prize in Physiology or Medicine (1908) with Paul Ehrlich in recognition of their work on immunity.

May 17, 1836

One hundred and seventy-five years ago on this date, Joseph N. Lockyer was born. In 1868, he discovered helium (He, 2) in the Sun. Pierre J. C. Janssen simultaneously observed this.

May 18, 1889

Thomas Midgley, Jr., introduced tetraethyllead as anti knock agent in gasoline; researcher on organic chlorofluorides as refrigerants.

May 19, 1914

Max F. Perutz studied structure of hemoproteins using x-ray diffraction: Nobel Prize (1962) with John C. Kendrew for studies of the structure of globular proteins.

May 21, 1936

Seventy-five years ago, Günter Blobel was born on this date. He received the Nobel Prize in Physiology or Medicine in 1999 for discovery that proteins have intrinsic signals that govern their transport and location in the cell.

May 22, 1927

George A. Olah, a researcher in carbocations and their role in chemical reactions of hydrocarbons, was born on this date. He received the Nobel Prize in 1994 for his contribution to carbocation chemistry.

May 24, 1686

Three hundred and twenty-five years ago on this date, Gabriel D. Fahrenheit was born. He improved thermometers by using mercury (Hg, 80) in 1720 and invented the Fahrenheit temperature scale.

May 29, 1781

Henri Braconnot, who was born on this date, isolated glucose from plant material such as sawdust, linen, or bark by boiling in acid. He also prepared "xyloidine", a precursor for plastics, by treating starch, sawdust, and cotton with nitric acid.

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

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

CHEMISTRY AT THE NEW JERSEY SHORE

By Kevin K. Olsen, Montclair State University, olsenk@mail.montclair.edu

For most readers of *The Indicator*, the New Jersey shore is a place for vacations, and unless they are oceanographic chemists, “working” at the shore probably means having sold t-shirts or pizza on the boardwalk during school vacations. However the shore region and the Pinelands beyond the beach were home to a number of chemical industries throughout the state’s history.

Many of the industries were located in the New Jersey Pinelands. This is a region of low, undulating hills and sandy soils on the Outer Coastal Plain. Holding over 17 trillion gallons, the Cohansey Aquifer underlines much of the region. The aquifer is very shallow and where it lies at or near the surface feeds the many streams of the region and produces its characteristic bogs, marshes, and swamps. The streams of the Pinelands are nutrient-poor. The early settlers of the region noted the nutrient-poor soils and named it the Pine Barrens.

The forest resources of the region were anything but poor. There are low, dense forests of pine and oak with stands of cedar and mixed hardwoods bordering the wetlands. These forests provided the raw materials for the production of charcoal, pitch, tar, and turpentine.

Approximately 1.1 million acres of the Pinelands were set aside in 1979 as the Pinelands National Reserve. Occupying 22% of New Jersey’s land area, it is the largest area of open space between Boston and Richmond. In 1983 the area was designated a U.S. Biosphere Reserve by UNESCO, and in 1988 it was designated as an International Biosphere Reserve.

The best known industries in the Pinelands were the ironworks. At the height of the industry about thirty ironworks were active. Two of these works are preserved as museums, Allaire Village (<http://allairevillage.org>) in Farmingdale, and Batsto, in the village of Hammonton, and inside the Wharton State Forest (<http://batstovillage.org>). Unlike the ironworks of northern New Jersey that exploited the ores mined from the region’s mountains, the ironworks in the Pinelands smelted bog iron. Bog iron is formed by the precipitation of dissolved iron in groundwater. In a process mediated by the presence of bacteria, limonite and related iron hydroxides precipitate to form an iron-rich dark-orange to yellowish-brown sandstone. In the New Jersey Pinelands, bog iron is often found at the edges of cedar swamps and bogs. The water in the Pinelands has a high iron content and as it seeps through the sandy soils it can form a rusty encrustation. The encrustations can build up to sizeable chunks that are large enough to process on a commercial scale. The bog iron industry was active from the early 1700s to about 1850. Bog ore is not particularly rich in iron and is difficult to process in large quantities. Competition from the iron industry of southeastern Pennsylvania caused the demise of the bog-iron industry.

The skills required to build and operate high-temperature iron furnaces could also be used in the production of glass. Most southern New Jersey ironworks eventually became the sites of glass manufacturing operations. The abundant sand provided the raw material, and new railroads brought coal from Pennsylvania. It is not the purpose of this essay to describe these well-documented industries and the reader should consult *Iron in the Pines: The Story of New Jersey’s Ghost Towns and Bog Iron* by Arthur D. Pierce, Rutgers University Press or the classic *Early Forges & Furnaces in New Jersey*, by Charles S. Boyer, University of Pennsylvania Press.

Intimately linked to the iron industry in both northern and southern New Jersey was the production of charcoal. Charcoal was critical to the iron-smelting process because it burns at very high temperatures and has an high energy density. Even the driest cordwood does not burn hot enough to smelt iron. In the years before the Civil War, charcoal was the major source of fuel for the south Jersey ironworks. Once the ironworks began to close and new railroad connections made fueling glass furnaces with coal practical, charcoal making declined in importance but continued sporadically. The last commercial charcoal burn in the Pinelands took place in 1974. Charcoal was also used by blacksmiths, can serve as a filter medium, and as a source of carbon in many industrial processes.

Charcoal is produced in the fractional distillation of wood under conditions of controlled combustion. Wood must be heated to 482°F at which temperature it decomposes into solids,

(continued on page 8)

CHEMISTRY AT THE NEW JERSEY SHORE

(continued from page 7)

gasses, and water vapor. If too much air is introduced during the heating process, the wood burns and turns to ash. But if the amount of oxygen remains low, the volatile gasses and water escape from the wood and the remaining solids turn to carbon. Properly made charcoal is between 75 and 90% carbon with only a small amount of ash. One metric ton of charcoal contains 30 GJ or 12,800 BTU/lb. of energy according to figures published by Washington University.

The traditional method of making charcoal is to use a circular clearing in the forest that has been raked clean and leveled. This area was referred to as the "pit" even though in many instances the floor level was raised anywhere from a few inches to as high as 18 inches above the level of the forest floor. Sometimes the edge of the pit was delineated by a ditch and in other places by an earthen berm. Archaeologists have measured pits in the New Jersey Pinelands ranging from 20 to 40 feet in diameter.

The typical charcoal pit in the New Jersey Pinelands used thirty cords of wood (a cord of wood measures 4X4X8 feet or 128 cubic feet) although the largest documented pits could hold up to 100 cords of wood. The wood was cut into 3 or 4 foot lengths and stacked on end. The resulting charcoal kiln was a beehive-shaped pile of neatly stacked wood about six to ten feet high. If there was a central chimney open to the atmosphere, the pit was the "chimney" type and if the top layer of wood was shaped into an arch, the pit was of the "arch" type. In either case the wood was covered with a layer of dirt or turf which would exclude oxygen. Burning kindling was dropped down the chimney, or placed in the arch, to start the wood burning. By opening or closing holes in the layer of dirt, the charcoal burner carefully regulated the amount of air allowed into the mound. The charcoal burn required about 1 to 1.25 days for every cord of wood and the typical burn lasted two weeks.

The burn required constant attention so the charcoal burner, or collier, lived in a small hut or turf-covered cabin near the pit for the duration. When the burn was over, the pit was raked open. The typical yield was between 540 and 600 pounds of charcoal per cord of wood. Permanent charcoal kilns were shaped like squat bee hives and constructed of brick but this type of kiln was not used in New Jersey. Descriptions of charcoal kilns can be found in the *Encyclopedia of New Jersey* and an article about them, appeared in the 1997 *Bulletin of the Archaeological Society of New Jersey*.

Another important industry in the Pinelands was the production of naval stores. This is the collective name for the tar, resin, pitch, and turpentine which were vital for the construction and maintenance of wooden ships. Mariners used tar to preserve standing rigging from decay and to waterproof timbers. A sailing ship's rigging is divided into the running rigging and the standing rigging. The running rigging are the ropes that are in constant motion because they are used to control the sails. The standing rigging are those ropes permanently fixed in place that help support the masts. Standing rigging took a beating from the elements and had to be coated with pine tar for protection. Even when tar produced from coal became widely available in the early 1800s, pine tar was regarded as being better suited for coating ropes. The organic chemists at Montclair State suspect that coal tar has a much higher proportion of benzenes and other light hydrocarbons. These would tend to dissolve the naturally occurring oils in hemp rope and cause it to become brittle. It was the seaman's practice in the era of the sailing navies was to use tar as a sort of hair gel to keep hair out of their faces. This gave seaman the nickname "tar" or "Jack Tar."

Shipwrights used pitch to caulk the seams between the planks of wooden hulls. It was mixed with oakum (fibers created by picking apart old ropes) and hammered into the seams between hull planks. It was also used to seal the seams between deck planks. These seams were called "devils" and pitch was "paid" into them. A practice that gave rise to the expression "having the devil to pay."

Turpentine was used to manufacture paint. (Salt water is a very harsh environment and readers who have served in the Navy will remember these three rules; "If it wears brass, salute it. If it is brass, polish it. If it doesn't move, paint it!") At the time New Jersey became a colony, England was importing naval stores from Sweden. In 1703, the Swedes cut off the supply and the British government responded by offering a bounty of 4 Pounds per ton of

pitch and tar and a bounty of 3 Pounds per ton for rosin and turpentine. This encouraged colonial production all along the eastern seaboard. Among other effects, it gave rise to the nickname "tar heels" for the people of North Carolina. After the American Revolution and throughout the 1800s production of naval stores continued but the industry declined in importance after the widespread introduction of iron-and steel-hulled ships.

Turpentine is made from the oily resins (oleoresins) found in pine trees. An early method to harvest crude turpentine was to make a series cuts in the trunk of a pine tree. These incisions were called a "box." A typical box started as a deep rectangular box cut into the tree trunk about one foot off the ground. This was about 4 inches deep and 8 inches long. In the trunk above this box, slanting scarifications were cut into the tree so that they formed a "V" with its point directed at the base of the box where a collection vessel was placed. The boxes were cut beginning in March and continued into the summer. Not surprisingly cutting boxes damaged the tree and turpentine could only be harvested for three or four years. Towards the end of the 1800s the boxes were replaced with a system of gutters.

The distillation of the crude turpentine began with applying gentle heat until all of the resins were melted. Small fragments of bark and wood chips were skimmed off the top. Since the water had evaporated by this point a small stream of distilled water was directed into the still to keep the temperature below 316°F, the boiling point of liquid turpentine. The turpentine distilled over and was collected in wooden barrels. The distillation was halted when the percentage of water in the distillate reached 90%. At that time, heating stopped and the top of the still was removed. Rosins were then drained out of the tank and remaining residues were collected as pitch.

Rosin was used in the manufacture of paints, varnishes, adhesives, and when mixed with tallow was used to make shoemaker's wax. Rosins is used on bows for violins and other string instruments. Powdered rosins are used by both dancers and athletes to prevent shoes from slipping. Stickier than rosin, the pitch was used for caulking the seams of wooden ships and for general waterproofing. In 1847, 2200 barrels of tar, pitch, turpentine and rosin were produced in New Jersey.

As the forests in the northern states became depleted, the industry gradually migrated southwards until turpentine production became concentrated in the southeastern states and Florida.

While the production of rosins, turpentine, and pitch used the resins of the pine trees, tar was made from pine logs. Sometimes the waste wood and pine stumps left over from the production of turpentine were used as the raw material for tar production. In the Pinelands, tar was produced in temporary kilns similar to charcoal kilns. Only one tar kiln in the Pinelands has been investigated by archaeologists. A polygonal kiln 35 feet in diameter was discovered in Galloway Township, Atlantic County. As it was located at the site of the Gloucester Furnace, archaeologists first thought that it was a charcoal kiln. Both types of kilns are temporary structures but there are significant differences.

Unlike like charcoal kilns, tar kilns were polygonal and, if the example found in Galloway is typical, were larger in diameter. Tar kilns were usually constructed on a slope or along the bank of a swamp. This was to allow the molten tar to collect at the bottom of the kiln and drain through a wooden trough, hollow log, or other channel. The tar was collected in a barrel placed downslope. Construction of the kiln began with creating a shallow, concave pit lined with clay. The clay lining was only two to four inches thick. The opening of the collection trough sat at the lowest point of the pit. The walls of the kiln were made from notched, freshly cut green logs laid horizontally. Inside this enclosure "dead wood" was laid with the long axis of the logs pointing outwards from the center and the narrow ends of the logs nearest the center. The dead wood was covered with a layer of stumps and other waste woods. The whole structure was covered with earth or turf so that the admission of air could be controlled. It is thought that a kiln this size would have required about ten days to burn completely.

It was crucial during tar distillation that the burning start in the topmost layer of wood and work downwards. This allowed the tar to melt and drip downwards toward the collection trough. Depending on the production process and the source woods, pitch could also be

(continued on page 10)

CHEMISTRY AT THE NEW JERSEY SHORE

(continued from page 9)

obtained from tar kilns. Tar kilns of this type were last used in New Jersey about 1865. A complete description of this kiln can be found in the "Bulletin of the Archaeological Society of New Jersey," number 59, 2004.

Readers who are concerned about chemical safety (aren't we all) will no doubt wonder if it was safe to harvest a combustible substance from a burning pile of pine logs. Careful management of the kiln was critical, and there are accounts of kilns exploding in dry weather or after becoming too hot.

We usually do not think about papermaking in New Jersey, but the industry did flourish here. The village of Harrisonville on the East Branch of the Wading River began as a mill site with a combination grist and saw mill in the 1750s. An iron forge and slitting mill were established in 1795. The property changed hands in 1832 and the new owners, seeing that the bog iron industry was declining, decided to manufacture paper. The water power that had run the earlier mills was used to power the papermaking machinery. The raw materials were the soft hay and rushes that grew in the nearby salt marshes. The mill produced heavy-butcher style paper. By 1834 the mill had a 240 foot-long paper-making machine and could produce one ton of paper per day. The mill was rebuilt after a fire in 1846 and was closed in the 1890s. No buildings survive from the era of papermaking; they were destroyed in a 1914 forest fire.

Recovering metals from seawater has long been a dream of chemists and chemical engineers. Of the many elements in seawater, only magnesium, the third most abundant element in the ocean, has been extracted on a commercial scale.

Prompted by the war-time demand for magnesium, in 1941 Dresser Industries opened the Harbison Walker - Cape May Works (also known as the Northwest Magnesite Plant) near Sunset Beach on the Cape May peninsula. The plant was on the west side of the peninsula only a few yards from Delaware Bay. The plant clarified sea water from Delaware Bay and mixed it with limestone to precipitate magnesium hydroxide. This solution was filtered and the filtrate was fired in rotary kilns to produce magnesite refractory brick. While much of the magnesium produced during World War Two was used for aircraft manufacturing, the magnesium bricks produced in Cape May were used instead to line steel furnaces. The plant continued in operation until 1983 when it was demolished. Today world magnesium production is 429,000 metric tons per year. Extraction of magnesium from seawater is mostly confined to the United States and Israel. The Israeli magnesium industry is centered on the Dead Sea.

The site of the plant in NJ consists of 125 acres of undeveloped beach front that is being transformed into a bird sanctuary. Although the site was cleaned up under the Environmental Cleanup Responsibility Act (ECRA), a landfill containing magnesium carbonate and limestone remains. The pH of the soils on the site is high and this has prevented native vegetation from reestablishing itself; the one exception being a native alkali saltgrass (*Puccinellia* spp.). To reduce the pH of the soils, dredge spoils from the Cape May Canal have been mixed into the ground. The organic material contained in the dredge spoils will support beneficial microbes that will eventually lower the pH through oxidation. Unfortunately the dredge spoils are themselves alkaline pH (8.1) and have high levels of soluble salts. For the immediate future, only alkali and salt-resistant plants will be growing on the site.

Some years ago, the author was giving a second-last-before-lunch presentation at a chemistry symposium. Nervous about the presentation, I skipped breakfast. As it happened everything went fine and I took my seat to hear the last presentation before lunch. A food science laboratory had been commissioned to study why pizzas with lots of cheese taste better those without and why French fries on the New Jersey boardwalks taste so good. It was agony to watch the slides on an empty stomach. But I can say, that extra cheese traps volatile flavor molecules and thus enhances the pizza's taste. French fries on the boardwalk taste so good because airborne salts blow in from the ocean and settle on the fries. That's the kind of chemistry I think we can all appreciate.

Beyond the Beach, some suggestions for scientific summer travel:

Allaire State Park

4265 Atlantic Avenue
Farmingdale, NJ 07727

The museum village at Allaire interprets life at the ironworks in the 1800s. Restored buildings open to the public include the workers' row homes, the foreman's cottage, the Allaire Mansion, the bakery, the blacksmith shop, carpenter shop, and the blast furnace. During the summer months the village is open from Wednesday thru Sunday, 12:00 PM – 4:00 PM. This is an excellent day trip for families with young children since Allaire State Park is also home to New Jersey's official railroad museum, the Pine Creek Railroad. The railroad operates summer weekends with trains departing every half hour between noon and 4:30 PM. Fares are \$4.00 per person and credit cards are not accepted.

Batsto Village & Wharton State Forest
31 Batsto Road
Hammonton, NJ 08037

In addition to the museum village that interprets the site's iron and glass making history, Batsto also features a nature center where visitors can learn about the ecology of the New Jersey pine lands and take guided canoe tours of Batsto Lake.

Edwin B. Forsythe National Wildlife Refuge
800 Great Creek Road
Oceanville, NJ 08231

Just over 20,000 acres of tidal wetlands, forested wetlands, upland forests and shrub-scrub habitat. The Wildlife Drive and trails are open seven days a week from sunrise to sunset. The refuge is home to American Black Ducks, Mallards, Buffleheads, Brant, Greater Scaup, Northern Pintails, Terns, Scarlet Tanagers, Yellow Warblers, Kentucky Warblers, Prairie Warblers, Blue-winged Warblers, Black-and-white Warblers, and Pine Warblers.

Wheaton Arts Center
1501 Glasstown Road
Millville, NJ 08332
800 998 4552, <http://www.wheatonarts.org/>

The Wheaton Arts Center is home to the Museum of American Glass, working glass studios (open to the public for demonstrations), and the Down Jersey Folklife Center. Between April and December, the center is open Tuesday through Sunday, 10:00 AM to 5:00 PM. Admission: \$10.00 Adults, \$9.00 Senior Adults (62+), \$7.00 Students, Children 5 and under are free.

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 BIO-CHEMISTRY, 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.

North Jersey Meetings

<http://www.njacs.org>

NORTH JERSEY EXECUTIVE COMMITTEE MEETING AND 50 YEAR MEMBER AWARDS DINNER

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.

At this meeting, the 50 and 60 Year Members of the North Jersey Section will be honored at a special awards dinner. A listing of those to be honored follows.

Date: Tuesday, May 17, 2011
Time: Awards Ceremony 4:30 PM
Place: Fairleigh Dickinson University
 Lenfell Mansion
 Madison, NJ
Cost: \$5.00

Directions can be found using mapquest and the address above. A map of the campus can be found at <http://www.fdu.edu/studentlife/2009florham/5455.pdf>

Reservations: call (732) 463-7271 or email njacsoffice@aol.com prior to **Wednesday, May 11, 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.

50 YEAR MEMBERS

Mr. Newton Lee Abramson
 Mr. Reginald A. Baldini
 Dr. Lee L. Blyler
 Mr. Garland G. Corey
 Dr. Donald W. Hagedorn
 Mr. Robert Edwin Hagman
 Dr. James J. Hartigan
 Mr. Allan J. Hoffman
 Dr. Mary Gertrude Howell
 Dr. Frederick C. Kauffman
 Dr. William P. Keaveney
Dr. Allen I. Laskin
 Dr. Gilbert A. Leveille
 Dr. Hubert Maehr

Dr. Donald Edward Mc Kay
 Dr. Ronald David Poretz
 Mr. Jonathan Rivlin
 Dr. Joseph D. Rosen
 Dr. James M. Schlegel
 Ms. Marie Siewierski
Mr. William Allen Slusarchyk
 Dr. Martin Steinman
 Mr. Philip Weintraub
 Dr. Stanley Wolfowitz

60 YEAR MEMBERS

Mr. Max Birnbaum
 Mr. Allen C. Bluestein
 Dr. Carl J. Buck
 Dr. Robert F. Burke
 Dr. Frank H. Clarke
 Mr. Murray Cohen
 Dr. Peter Drenchko
 Dr. Everett J. Fuller
 Dr. J. Brooke Gardiner
 Dr. Eric N. Goldschmidt
 Dr. Lysle J. Heney
 Mr. Arnold Irwin
 Mr. E. George Kaup
 Dr. Rudolph W. Kluiwer
 Dr. Eugene T. Mc Guinness
 Dr. Leonard T. Pappalardo
 Dr. Oscar Sandus
 Dr. David E. Scheirer
 Mrs. Mary G. Shanahan
 Dr. Joseph P. Simko
 Dr. O. Kirk Spurr
 Dr. Eric W. Stern
 Mr. Irwin S. Zonis

**Members whose names are in italic have already received their certificates.*



NJACS TEACHER AFFILIATES

Executive Committee Meeting

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

Date: Thursday, May 5, 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

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, May 5, 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 billsuits@earthlink.net, if you plan on attending this meeting.



ChemTAG

Share Your Favorite Demos Including Captivating Demos for Back to School Night

Date: Wednesday, May 11, 2011

Time: 4:00 – 6:00 PM

Place: J.P. Stevens High School
855 Grove Avenue
Edison, NJ

Hostess: Paul Sekuler

researchehs@hotmail.com
732-542-2800



MASS SPECTROMETRY DISCUSSION GROUP

The NJ Mass Spectrometry Discussion Group May Meeting

Sponsored by Waters

Speakers: TBA

Date: Tuesday, May 17, 2011

Times: Social Hour 5:30 PM

Dinner 6:30 PM

Meeting/Presentations 7:00 PM

Place: Holiday Inn

195 Davison Ave
Somerset, NJ

Safet Palamar, (862) 778 9769
Email: safet.palamar@novartis.com



LABORATORY ROBOTICS INTEREST GROUP

Mid-Atlantic Chapter - Annual Technology Exposition and Vendor Show

This meeting features 90 automation and technology vendors, short courses and workshops, posters, and food. Admission is free but advance registration is required. Registration details, menus, and schedules will be posted on the chapter web site as they become available.

The URL for the Chapter Website is:

http://www.lab-robotics.org/Mid_Atlantic

Date: Tuesday, May 17, 2011

Time: Exhibit Room 4:00 PM

Place: Hyatt Regency
New Brunswick, NJ

Cost: Free



NMR TOPICAL GROUP

Date: Wednesday, May 18, 2011

See www.njacs.org for more information.



CHROMATOGRAPHY TOPICAL GROUP

Date: Friday, May 20, 2011

See www.njacs.org for more information.



REGULATORY CMC JUNE SYMPOSIUM

The NJACS-Regulatory CMC Topical Group is pleased to announce the half day mini-symposium to be held on **June 7, 2011** at the Rutgers Busch campus in Piscataway, NJ. The Busch campus is easily approachable from Route 287 or Route 18. The format of the symposium will be similar to the one held on December 2, 2010. The talks will center on topics such as: counterfeit drugs, genotoxic impurities, medical devices and submission requirements for Rest of the World/Emerging Markets. Details of the event have been posted on the website www.njacs.org. Please visit the website to register.

42nd National Organic Chemistry Symposium Princeton University, June 5-9, 2011

Joseph Armstrong	Merck Process Chemistry
Carolyn Bertozzi	University of California, Berkeley
Benjamin Cravatt	Scripps Research Institute
Vy Dong	University of Toronto
Dennis Dougherty	California Institute of Technology
Dieter Enders	Rheinisch-Westfälische Technische Hochschule
Jean Frechet	University of California, Berkeley
Amir Hoveyda	Boston College
Michael Krische	University of Texas at Austin
Colin Nuckolls	Columbia University
M. Christina White	University of Illinois
Anthony Wood	Pfizer Medicinal Chemistry
Hisashi Yamamoto	University of Chicago
Robert Grubbs*	California Institute of Technology

*(2011 Roger Adams Awardee)

Poster sessions and social events round out the schedule
Recreational activities abound in scenic Princeton, nearby in Philadelphia,
New York City and at the Jersey Shore

*Don't miss this premier event sponsored by the
ACS Division of Organic Chemistry!*

For more information, and to register please visit
www.nationalorganicsymposium.org

*Poster submission deadline: May 1, 2011
Early registration pricing ends May 13, 2011*

Division Organizers:

William Greenlee (Merck), Duane Burnett (Merck) and Scott Sieburth (Temple University)

Local Co-Chairs (Princeton University):

Paul Reider, Abigail Doyle and Dorothea Fiedler



TEACHER AFFILIATES



Eve Krupka (right), 2010 Chair of NJACS-Teacher Affiliates, is honored for her outstanding service. The award is presented by Bettyann Howson, treasurer, and Paul Sekuler.

(Photo courtesy of Diane Krone)

ChemTAG

The following pictures are from the March North Jersey ChemTAG meeting at Fair Lawn High School.

(Photos courtesy of Diane Krone)



Kelly Chladil, Steve McNally, and Kris Bedient construct Kinetic Energy apparatus.



Jane Cassidy prepares for the electrochemistry make-and-take session.



Elianna Goldman and Jayanthi Ramaswamy found some time to socialize.



Barbara McNally and Mark Bitar discuss the Magnetic Ion Manipulatives.

**CALDWELL COLLEGE HONORS
ALUMNI FOR PROFESSIONAL
EXCELLENCE AT ANNUAL
VERITAS AWARD DINNER**

**Elizabeth Howson '69 received the
Excellence in Chemical Education
Award**



Caldwell College hosted its 26th Veritas Awards Dinner at the Essex Fells Country Club in Essex Fells, NJ, on Friday, March 25 at 6 PM. The Veritas Award is the highest honor the College bestows on its alumni for their professional excellence in diverse fields.

Elizabeth Howson '69 received the Excellence in Chemical Education Award.

Howson has dedicated her 25-year career in chemistry education to students at Wayne Valley High School, Madison High School and Chatham High School. She was one of

the first teachers in New Jersey to incorporate the internet into her teaching, and she has educated teachers across the nation about internet programs for instruction, assessment and research. Howson received the Edward J. Merrill Award for excellence in high school chemistry teaching from the North Jersey Section American Chemical Society.

Since 2000, Howson has co-chaired Merck State Science Day, the premiere science competition in the state, attracting over 2,000 students each year. She is a member of the executive board of the N.J. Science Teachers Association, which named her a Fellow in 2007 and honored her with the Association's Special Award for contributions to science education in 2009.

Howson is a member of the American Chemical Society serving on both the Chemical Education and Chemical Health and Safety Divisions. She has served six years and continues as the secretary of the North Jersey Section of ACS. In addition Howson is currently treasurer of the North Jersey Section Teacher Affiliate Group.



Eastern Scientific

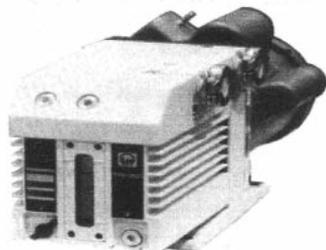
www.easternsci.com

781-826-3456

Vacuum Pump Problems?

Eastern Scientific specializes in the repair and precision rebuilding of all makes of mechanical vacuum pumps.

*Free pick-up & delivery
Restrictions apply*



New York Meetings

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 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, June 3, 2011

Friday, September 23, 2011

Friday, November 18, 2011



WESTCHESTER CHEMICAL SOCIETY

The Distinguished Scientist Award and Dinner and College Student Achievement Awards

"Studies in Molecular Epidemiology"

Awardee: Dr. Assieh Alexy Melikian
New York University
School of Medicine
Department of Environmental Medicine



Dr. A. A. Melikian

By using an interdisciplinary approach our research is focused on the elucidation of the mechanisms of action of environmental carcinogens, especially tobacco products, with the ultimate goal of utilizing this information in the design and development of targeted prevention strategies. We have studied assays in labo-

ratory animals to gain an understanding of metabolic pathways leading to ultimate carcinogenic metabolites of agents that have shown carcinogenic activity in animals. Then sensitive methods were developed and validated to quantify metabolism of these carcinogens in humans, usually by employing GC-MS, LC-MS, or other methods to analyze carcinogen metabolites in urine, or carcinogen protein or DNA adducts in tissue or blood. The design and some results of such a molecular epidemiologic study will be presented.

Dr. Melikian is an associate professor at the School of Medicine of New York University. Formerly, she held appointments at the American Health Foundation in Valhalla, NY. Her research is focused on the elucidation of genotoxic and nongenotoxic (epigenetic) mechanisms by which environmental pollutants and tobacco initiate cancer. Dr. Melikian has numerous publications in peer-reviewed journal, chapters in books and research presentations.

Date: Wednesday, May 4, 2011

Times: Social 5:00 PM

Lecture and Awards 5:45 PM

Dinner 7:00 PM

Place: Butcher Suite

The Campus Center

Pace University,

Bedford Rd – Entrance #2

Pleasantville, NY

Cost: Students \$20

ACS members \$25

Non-ACS members \$30

RSVP required to pwrc@earthlink.net

Information regarding Pace University

eweiser@pace.edu

Check for updates

<http://www.newyorkacs.org/>

Directions to Pace: <http://www.pace.edu/pace/about-us/all-about-pace/directions-to-all-campuses/pleasantville-campus//>

For a map of the campus -

<http://www.pace.edu/media/files/campus-maps/plvmap07.pdf>

BOOSY OUR RAVINGS

When you tell our advertisers that you saw their ads here they have more confidence in our newsletter's viability as an advertising medium. They advertise more. This supports our many activities.

LONG ISLAND SUBSECTION

Characterizing Nanoparticle-Based MRI Contrast Agents

Speaker: Marc Walters
Department of Chemistry
New York University

This talk will focus on the synthesis and characterization of silver nanoparticle based MRI contrast agents. The silver surface serves to support a large number of paramagnetic complexes that are bound through thiol links. The integrity of the particle is determined using standard spectroscopic methods that we have shown can be readily applied to other water-soluble nanoscale structures. The efficacy of silver nanoparticle contrast agents will be discussed in the context of the imaging of a mouse model.

Dr. Walters was born and raised in Brooklyn, New York. He graduated from City College and then earned his Ph.D. at Princeton University, followed by postdoctoral work at MIT. He joined the Chemistry Department at New York University in 1985, conducting research in bioinorganic chemistry of metalloproteins with a particular interest in Fe-S protein active sites and the effects of hydrogen bonding on redox reactions. More recently, he has focused on the development of multifunctional nanoparticulate agents for biomedical applications, and MRI in particular.

Date: Thursday, May 5, 2011

Time: Social 7:00 PM
Seminar 7:30 PM
Please note that this seminar is being held at a later time than usual

Place: Hofstra University
Breslin Hall, Room 103

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 for details, updates, and directions.

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

CHEMICAL MARKETING & ECONOMICS GROUP

Investing in Latin America

Panel: Daniel Gamba
Managing Director and Regional
Head of Latin America and Iberia
for BlackRock

Ted Helms
Executive Manager of Investor
Relations, Petrobras

Moderator: George Rodriguez
Managing Director
Argeni, and Chair of CM&E

- What is the Latin American (Latam) outlook over the next decade?
- Where are the investment opportunities?
- How can investors and companies manage risks in the region?

As Latam's population doubles to one billion in 2050, technological innovation, consumer-driven demand and public works will continue to invigorate global economic growth. Brazil, Peru, Chile, Colombia and other countries are rising stars with sound economic policies, abundant natural resources and a growing population eager to reap the fruits of economic development. From the largest rain forest in the world to the largest mountain range on earth (and the tallest outside of Asia) to the petroleum-rich fields to the world's top fisheries, Latam is full of superlatives in agro-based industries, mining, petroleum and a cornucopia of resources that has led to a dominant role in materials strategic to high technology and energy. CM&E has assembled an exceptional panel of experts who will give their insights on the investment challenges and opportunities.

Date: Thursday, May 5, 2011

Times: Registration and Networking
11:15 AM - 12 Noon (EDT)
Luncheon 12:00 Noon - 1:00 PM
Presentation & Webcast
1:00 - 2:00PM

Place: Aureole Restaurant
135W 42nd Street (between
6 & 7 Avenues)
New York, NY

Cost: \$70 for 2011 members of CM&E or members of NYSCC or NYSSA.
\$90 for non-members. It includes 2011 CM&E membership.

Early-Bird discount: \$20 for all who pay via credit card by Friday, prior to event.

Webcast or its recording: \$30 for all. \$15 discount if you reserve by Friday prior to event.

**BIOCHEMICAL TOPICAL
GROUP — JOINT MEETING
WITH THE NYAS BIOCHEMICAL
PHARMACOLOGY DISCUSSION
GROUP**

The biology of Apolipoprotein E: A novel pathway for the treatment of Alzheimer's disease?

Organizers: Kelly Bales, PhD
Pfizer Research & Development
Mercedes Beyna
Pfizer Research & Development

Ken Jones, PhD
Lundbeck Research USA

Roland Staal, PhD
Lundbeck Research USA

Jennifer Henry, PhD
New York Academy of Sciences

Speakers: Joseph D. Buxbaum, PhD
Mount Sinai School of Medicine

Jacqueline N. Crawley, PhD
National Institute of Mental
Health, NIH

Peter B. Crino, MD, PhD
University of Pennsylvania

Timothy T. Roberts, PhD
Children's Hospital of
Philadelphia

Robert T. Schultz, PhD
Children's Hospital of
Philadelphia

Alzheimer's disease is the most common cause of dementia in the elderly. This symposium brings together experts to discuss the role of ApoE4 in Alzheimer's disease (AD), and to discuss potential strategies for prevention and treatment of AD.

Date: Tuesday, May 24, 2011

Time: 9:00 AM – 5:00 PM

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

Cost: This event has reduced-rate registration for ACS and NYAS members, at \$25 or \$10 (for students and post-docs). Please use the Priority Code SPN1-ACS1. Non-members may attend for a fee of \$80 (corporate), \$60 (non-profit or academic) or \$40 (students and post-docs).

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

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



**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

If you have any questions please contact: Barbara Hillery, Co-chair
hilleryb@oldwestbury.edu

Joseph Serafin, Co-chair
SerafinJ@stjohns.edu

Justyna Widera, Co-chair
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 hessytaft@hotmail.com.

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

CANDIDATES FOR THE ACS NEW YORK SECTION 2011 ELECTIONS

At the January Section-wide Conference, the Nominating Committee presented the following candidates for the New York Section 2011 elections. ACS, New York Section members will receive a ballot in April. The ballot must be returned **by May 31, 2011**. If a ballot is not received by May 15th, please contact the New York Section Office at 516-883-7510 or njesper1@optonline.net. The biographies of the candidates will appear on the New York Section website at <http://www.NewYorkACS.org>. The New York Section extends a sincere thank you to the following candidates for accepting the nomination to run for office.

Chair-elect for 2012

Dr. Sharon I. Lall-Ramnarine
CUNY - Queensborough Community College
Dr. Philip H. Mark
SUNY - Nassau Community College

Treasurer for 2012-2013

Dr. Robert P. Nolan
International Environmental Research Foundation

Directors-at-Large for 2012

Mr. David J. Deutsch
Vista Marketing and Financial
Dr. Charles Hicks
SUNY - Nassau Community College
Dr. Marie Thomas

Brookhaven National Laboratory
Dr. Kwesi Amoah
CUNY - Medgar Evers College
Mr. Herbert Weiss
South Side High School

Councilors for 2012-2014

Dr. Ronald P. D'Amelia
Hofstra University
Dr. Richard M. Goodman
RMG Consulting
Dr. Barbara R. Hillary
SUNY - Old Westbury College
Dr. Rolande R. Hodel
AIDSfreeAFRICA and SUNY - Westchester Community College
Dr. Hiroko I. Karan
CUNY - Medgar Evers College
Mrs. Joan A. Laredo-Liddell
Fordham University

Alternate Councilors for 2012

(To fill vacancies)
Dr. Mihaela D. Leonida
Fairleigh Dickinson University
Dr. Marc A. Walters
New York University



LONG ISLAND SUBSECTION

LI-ACS Events Schedule for 2011

Thursday, June 2

"LI-ACS High School Awards"
Location TBA

Please visit the LI-ACS webpage at http://www.newyorkacs.org/sub_island.php for details, updates, and directions.

HIGH SCHOOL TEACHERS TOPICAL GROUP

The High School Teachers Topical Group met at New York University on March 11, 2011. The topic of the meeting was: "A Portrait of Leo H. Baekeland, the Father of Modern Plastics."



Left to right: Joan Laredo-Liddell (co-chair) holding pieces of Bakelite; Hugh Karraker, speaker and great-grand son of Leo H. Baekeland; Jean Delfiner (co-chair) presenting Mr. Karraker the ACS Certificate of Appreciation; Lew Malchick, President of the Chemistry Teachers' Club and Chris Ward, VP (back).

(Photo courtesy of Joan Laredo-Liddell)

WESTCHESTER CHEMICAL SOCIETY

Not every scientist is so involved in his work that he ends up with the company logo projected onto his forehead, as Borys Schafran does in this picture. Attendees of the Wednesday, March 9th Westchester Chemical Society meeting got a treat listening to Schafran from Evonik Degussa Corporation, NJ. Industrial research – as compared to academic research - is so straight forward oriented towards real life applications and marked demand that the goal of ones research is clear: improve the



performance of polyaryl ether amide matrix resins! Thus Schafran introduced us to a new generation of single-component, room-temperature-stable polyaryl ether amide thermoset matrix resins for the aerospace and electronics industry. Step by step he compared the advances achieved by his work with existing old technologies. For example, recent developments have led to the discovery of enhanced long-term stability, particularly for hot/wet conditions, while maintaining critical characteristics including glass transition (Tg) and flame-smoke-toxicity (FST) performance. In addition, ease of processing was addressed to lower curing temperatures.

We thank Borys Schafran for his presentation.

From left to right: Paul Dillon, Jody Reifenberg, Borys Schafran, Rolande Hodel, Peter Corfield.

(Photo courtesy of Paul Dillon)





Solvents
Salts
Acids
Solutions

We have all the pieces...

www.emdchemicals.com/analytics

Bench Vacuum for Lab Renovations



VACUU-LAN® local vacuum networks

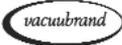
Central vacuum convenience...

- up to 8 users on each pump
- conserves bench space
- whisper-quiet

Dedicated pump performance...

- vacuum to 1.5 Torr!
- manual or electronic port controls

Details at www.vacuu-lan.com



888-882-6730

www.vacuubrand.com
info@vacuubrand.net



REPORT ON NY ACS YOUNGER CHEMISTS COMMITTEE RESEARCH SYMPOSIUM

On March 19th, the NY ACS Younger Chemists Committee held a research symposium at The Cooper Union in Manhattan. Abstracts had been submitted by many chemists from all around the New York City area. The six best abstracts were selected for oral presentations and the remaining thirty-six abstracts were presented as posters.

The event started with a speech from Frank Romano, the immediate past chair of the NY ACS local section. Frank highlighted some of the events run by the New York section and the benefits of ACS membership, as well as his perspective on the route to career success. Next the six selected abstracts were presented, and they were notable for both the quality of the science and the splendid presentation style of the authors. The presenters were David Thompson of Boehringer Ingelheim, Matteo Palma of Columbia University, David Germack of Brookhaven National Laboratory, Krishnaswami Raja of The College of Staten Island, Marie Thomas of Brookhaven National Laboratory, and Mark Barahman of The College of Staten Island. Topics included probing composites for solar energy conversion, the use of computer modeling in the pharmaceutical industry, ionic solvents for the production of biofuels, control of water movement on surfaces, tumeric derivatives as a therapeutics and surface patterning to control cellular growth.

Prof. Ron Breslow of Columbia University gave an excellent keynote address. He presented his work on molecular electronics, where the conductivity of various organic structures has been probed. For example, enhanced conductivity was seen with some cyclobutadiene-based structures, with interesting chemistry devised along the way to create these molecules.

The symposium finished with a poster session, where a diverse range of research was presented and attendees enthusiastically discussed the work on display. More than seventy chemists attended the event, from institutions and businesses from all around New York City, New Jersey and Connecticut. There were attendees from high school through graduate students to professors and senior scientists at companies. Networking and socializing was done over refreshments provided in the atrium.

Overall, the event was a great success and it is hoped that the symposium will become a yearly event. Funding was provided by grants from ACS National (a Local Section Activities Innovative Project Grant and a Younger Chemists Committee Starter Grant). To run the event next year, we hope for industrial sponsorship. Anyone interested in sponsoring the event should get in touch with YCC Chair David Cormode (davidcormode@gmail.com).

The symposium came about due to the hard work of the NY ACS YCC, which is currently composed of Sandy Chen, David Cormode, Elizabeth Onufrey, Ruben Savizky and Avigail Soloveichik. Anyone looking to find out more about YCC events should go to our webpage (http://www.newyorkacs.org/comm_yc.php) or get in touch via email.

See photo on next page.



Micron Analytical Services

**COMPLETE MATERIALS CHARACTERIZATION
MORPHOLOGY CHEMISTRY STRUCTURE**

SEM/EDXA • EPA/WDXA • XRD XRF • ESCA • AUGER • FTIR • DSC/TGA

Registered with FDA • DEA GMP/GLP Compliant

**3815 Lancaster Pike Wilmington DE. 19805
E-Mail micronanalytical@compuserve.com**

**Voice 302-998-1184, Fax 302-998-1836
Web Page: www.micronanalytical.com**



The presenters at the NY ACS Younger Chemists Research Symposium (l-r): David Thompson, Marie Thomas, Krishnaswami Raja, David Germack, Matteo Palma, Ron Breslow, Mark Barahman and Ruben Savitzky.

(Photo courtesy of Sandy Chen)

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 under education and obtain your preliminary nomination form and guidelines. The full packet takes time to do a good job!

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

Any questions or help needed contact Bettyann Howson, chemphun@optonline.net.



THE WILLIAM H. NICHOLS MEDAL AWARD FOR 2012

The New York Section is accepting nominations for the William H. Nichols Medal Award for the year 2012. This distinguished award, established in 1902 by Dr. William H. Nichols, for the purpose of encouraging original research in chemistry, is the first award authorized by the American Chemical Society. It is presented annually in recognition of an outstanding contribution in the field of chemistry, and consists of a gold medal, a bronze replica and \$5000. The medals are presented at the William H. Nichols Meeting that consists of a Distinguished Symposium related to the medalist's field of expertise and a Medal Award Dinner.

Investigators who have published a significant and original contribution in any field of chemistry during the five calendar years pre-

ceding the presentation meeting are eligible for consideration by the Nichols Medal Jury. The New York Section encourages nominations from academia, government and industry.

Each nomination requires a completed Nomination Form, biographical and professional data, and seconding letters. Since the nomination process utilizes the New York Section website, please access the forms and instructions at <http://www.NewYorkACS.org>.

Nominations must be received by **May 31, 2011**. The Nichols Medal Award Jury will meet in June 2011 to select the Nichols Medalist for 2012.

Questions regarding the nomination procedure should be directed to Marilyn Jespersen, New York Section Office, at njesper1@optonline.net.

Nacalai USA
Innovations for Life Sciences

COSMOSIL HPLC Columns
- Since 1979

New Phases Now Available!

HILIC (Triazole bonded)
- Unique stationary phase for highly polar compounds

piNAP (Naphthylethyl group bonded)
- Enhanced π - π interactions for unsaturated compounds

Cholester (Cholesteryl group bonded)
- New stationary phase for structural isomers



Nacalai USA, Inc. 6640 Lusk Blvd. Suite A200 San Diego CA 92121
Tel: 858-404-0403 Email: info@nacalaiusa.com
www.nacalaiusa.com

Professional/Product Directory

NJIT

New Jersey's Science & Technology University

MATERIAL CHARACTERIZATION LABORATORY • A Unique Combination of State-of-the-Art Analytical Instruments and Expertise

GC/MS • HPLC • LC/MS • FTIR • TOC • AA
ICP-MS • XRD • XRF • AFM • SEM • TEM

York Center for Environmental Engineering & Science
www.ycees.njit.edu/labs

138 Warren Street
Newark, NJ 07102

Tel: (973)-596-5858
Fax: (973) 612 7170

Remember

Mother's Day



NMR_{Service} 500MHz

*Mass

*Elemental Analysis

NuMega Resonance Labs

numegalabs.com P- 858-793-6057

Elemental Analysis

CHNOS ash
ICP • AA • ICP/MS
TOC • TOX • BTU
Problem Solving

HUFFMAN

LABORATORIES, INC.
Quality Analytical Services Since 1936

Phone: (303) 278-4455

FAX: (303) 278-7012

chemistry@huffmanlabs.com

www.huffmanlabs.com



RECRUITING WEB SITE LISTING DIRECT TO YOUR SITE

There are two important ways to recruit through our services. One is to place a print ad in the Indicator. The other is to place a web site ad reaching out to 40,000 ACS members. We recommend using both low cost methods.

You can view both of these opportunities by going to the link below.

Who uses these options?

- Companies for lab, management and sales personnel
- University & College teaching positions
- Hospitals for technical and research personnel

We provide more qualified resumes because of the highly targeted technical audience.

info -- www.mboservices.net

WANT MORE ARTICLES

When you tell our advertisers that you saw their ads here they have more confidence in our newsletter's viability as an advertising medium. They advertise more. This supports our many activities.

Ad Index

ANALYTICAL

EMD Chemicals	21
Huffman Laboratories, Inc.	24
Micron Inc.	22
Nacalai USA Inc.	23
New Jersey Institute of Technology	24
NuMega Resonance Labs.	24
Robertson Microлит Labs	4
Vacuubrand, Inc.	21

EQUIPMENT

Bucchi Corporation	2
Eastern Scientific Co.	16
Mass Vac, Inc.	2

GENERAL

ACS-NY/NoJ Sections	17
ACS-NY/NoJ Sections	24
ACS-NY/NoJ Sections	24