



Dr. Vijaya Korlipara
NY Section's Outstanding Service Awardee, 2007
See pages 12-13.

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**Deadline for items to be included
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APRIL HISTORICAL EVENTS IN CHEMISTRY

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

April 2, 1877

Carl L. Alsberg, who was born on this date, was a researcher in the chemistry of food.

April 5, 1827

Joseph Lister, who introduced antiseptics, such as carbolic acid (phenol), was born on this date.

April 6, 1927

Edmond H. Fischer, who was born on this date, is a researcher on protein phosphorylation as a biological regulatory mechanism. In 1992, he shared the Nobel Prize in Medicine with Edwin G. Krebs for their discoveries concerning reversible protein phosphorylation as a biological regulatory mechanism.

April 8, 1911

Melvin Calvin, who received the Nobel Prize in Chemistry in 1961 for his research in photosynthesis, was born on this date.

April 10, 1863

Paul Louis Toussaint Héroult discovered the electrolytic aluminium process in 1886, the same year that Charles Martin Hall discovered the same process for isolating aluminum, which is called the Hall-Héroult process. In 1900, He invented the electric arc furnace for steel, which replaced some giant smelters for the production of a variety of steels. He was born on this date.

April 11, 1799

Humphry Davy discovered nitrous oxide, laughing gas on this date.

April 12, 1773

Thomas Thompson, who was born on this date, invented the instrument known as *Allan's saccharometer*. He identified a zeolite mineral named *thomsonite*; promoted Dalton's atomic theory and Prout's hypothesis in his journal *Annals of Philosophy* and his book *System of Chemistry*.

April 14, 1969

NASA's Nimbus III weather satellite made the first civilian use of nuclear batteries on this day.

April 16, 1838

Ernest Solvay developed the Solvay process for making commercial soda cheaply, and was born on this date

April 18, 1924

Quantum Chemical incorporated as National Distillery Products Corp. on this day.

April 19, 1912

Fifty years ago in 1958, Glenn T. Seaborg codiscovered nobelium. He was born on this date and shared the Nobel Prize in Chemistry in 1951 with Edwin M. McMillan. He also co discovered americium, 1944, berkelium, 1950, californium, 1950, curium, 1944, einsteinium, 1952, fermium, 1953, mendelevium, 1955, plutonium, 1940, and element 106, 1974.

April 21, 1970

The first Earth Day was founded by Sen. Gaylord Nelson, Father of Earth Day and organized by Denis Hayes and celebrated on this day. It is celebrated by ACS on April 22.

April 23, 1858

One hundred and fifty years ago, Max K. E. L. Planck was born on this date. In 1900, he introduced the quantum theory and was awarded the Nobel Prize in Physics in 1918 in recognition of the services he rendered to the advancement of Physics by his discovery of energy quanta.

April 25, 1900

Wolfgang Pauli, who was born on this day, discovered the exclusion principle and received the Nobel Prize in Physics in 1945 for the discovery of the Exclusion Principle, also called the Pauli Principle.

April 26, 1775

Antoine L. Lavoisier reported on this day that heating mercury in air forms red calx, HgO, while the air is reduced in volume and no longer supports combustion. He heated red calx to liberate oxygen.

April 28, 1941

K. Barry Sharpless who discovered and developed many catalytic oxidation processes for stereoselective oxidation, was born on this date. He shared the Nobel Prize in Chemistry in 2001 with William S. Knowles and Ryoji Noyori for their work on chirally catalyzed hydrogenation reactions

April 29, 1904

Nashua incorporated as Nashua Card, Gummed & Coated Paper on this day.

April 30, 1958

Fifty years ago, Albert Chiorso, et al., announced the discovery of mendelevium based upon research done at the University of California, Berkeley.

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

BLACK BONES AND VITRIOL, OR HOW A SMALL FARM IN NEWARK HELPED LAUNCH AN AGRICULTURAL REVOLUTION

PART TWO: A Remarkable Chemist Investigates What Agitates the Public Mind

Kevin Olsen, Montclair State University, Department of Chemistry and Biochemistry.

In part one of this article we have seen how limitations on the food supply threatened the rise of cities in the first decades of the 1800s. New sources of nitrogen and phosphorous containing fertilizers allowed urban centers to continue their rapid growth. In part two, we will see how a remarkable chemist helped promote both the use of these fertilizers and the application of scientific principles to agriculture.

It was shortly after the discovery of superphosphates (P₂O₅) that a chemist named James Jay Mapes (1806 - 1866) enters the story. Mapes and his competitor C.B. De Burg were the first two fertilizer manufacturers in the New York area. In 1854, C.B. De Burg established a factory for the production of superphosphates in the Williamsburg section of Brooklyn where there was a supply of bone black from the local sugar refineries. (Ground and carbonized bones were used as a filter medium.)

Mapes also had a background in sugar refining. He was born in New York City in 1806. He began his career as a clerk and by age 21 was a merchant in the sugar refining business. He failed at that pursuit but in his spare time had studied both chemistry and the fine arts. Mapes was appointed Professor of Chemistry and Natural Philosophy at the National Academy of Design.

After suffering unspecified financial setbacks, in 1847 Mapes bought a run down farm in the Weequahic section of Newark. It had the sort of depleted soil that Mapes hoped chemistry could restore. He began with preparations of superphosphates of lime made from both blackened and "green" bones. Mapes kept a supply of this material on hand for sale to anyone who wanted to try it.

The Weequahic section of Newark was a good choice for the demonstration project. A stream known as Bound Creek flowed through the area and emptied into the Passaic River. A small shipping terminal developed on the stream where farmers from Morris County could load their crops onto boats for the trip to New York City.

Mapes grew corn, wheat, vegetables, and fruit. He conducted experiments into tillage methods and fertilizer use. An 1852 editorial in the *New York Times* claimed that as a "consulting agriculturalist" Mapes had visited more than 200 farms in New Jersey. He performed soil analysis and advised on the best fertilizers. It was claimed that the increased crop yields added \$200,000 annually to the state's agricultural income. It should be noted that the editorial contained no by-line and it is likely that Mapes himself wrote it.

By In 1853 Mapes was selling what he advertised as "Improved Super-Phosphate of Lime." At the time guano was in short supply in New York and it was only available in small quantities. Mapes was charging \$50 per ton and it was asserted "by some" that his product was "equal if not superior to guano." Whether Mapes himself was making such claims or merely allowing others to do so is not recorded. A Professor Johnson of Yale obtained 100 pounds of the material and performed an analysis. The results were:

Sulphate of Lime (Plaster) 37 lbs
Insoluble phosphate 21 lbs
Soluble superphosphate of lime 15 lbs
Free sulfuric acid 5 lbs
Ammonia 2.5 lbs
Non-nitrogenous organic matter, water, and sand 20 lbs.

Scientific American confidently reported that Professor Johnson has demolished any claims of superiority to guano. In terms of nitrogen this was certainly true but Mapes' product compares favorably to modern fertilizers which typically contain somewhere between 18 and 20% P₂O₅.

Contemporary press reports reveal that Mapes was active in the American Institute Farmers Club. The many speeches he made on scientific farming included addresses to the Queen's County Agricultural Fair in October of 1853 and the Mechanics' Institute in 1854. He even endorsed an ointment sold for treating cuts and scrapes on horses' legs. Mapes founded a magazine named the *Working Farmer* in which he agitated for scientific management of agriculture. The magazine promoted deep plowing, proper drainage, and heavy manuring.

The experiments conducted on the Weequahic farm lead Mapes to conclude that there was no single fertilizer that was suited to all types of crops. He began combining fertilizer types and in 1859

was issued two of the first patents (26,196 and 26,507) for mixed-formula fertilizers. The patents called for a mix of superphosphates of lime, guano, and ammonia.

But Mapes did not always have an easy time promoting his ideas. His 1866 obituary in the *New York Times* reports that his ideas were often disputed by "practical men" and that not everyone who tried his fertilizers obtained the same good results.

Mapes had a number of other academic interests, we see him in November of 1852 lecturing a New York Audience on the principles behind an "axial electric engine" invented by a Professor Page. Page went on to construct the first full-size electric locomotive using this motor. It was tried out on the Baltimore & Ohio Railroad in 1854.

Mapes also served on a committee that was asked to evaluate John Ericsson's "caloric" ship, an experimental vessel launched in New York in January of 1853. The ship used hot air instead of steam acting on her pistons to drive paddlewheels. Although the ship made ten knots on her first trials, initial reports (including Mapes') of the engine's performance were overly optimistic and the idea was dropped.

Mapes himself once stated that he investigated most phenomena that "agitated the public mind." These interests even extended to Spiritualism. While a believer in life after death, he denied embracing the entire set of spiritualist beliefs, at least until he had "concluded his investigations."

Mapes was also a dedicated amateur painter who reportedly had a talent for miniatures. Some of his paintings were exhibited at the National Academy. He became an expert on pigments and lectured on the chemistry of color. In 1850 he was one of the leaders behind the establishment of the Jersey Art Union in Newark. At the opening of the Union's first exhibition he gave a lecture on the relationship between the practical and the fine arts.

James Jay Mapes served as a trustee of the Mechanics Institute, helped found the American Museum of Natural History, and was among the first to propose that there be a secretary of Agriculture in the Cabinet. His lucrative career as consultant, analytical chemist, and expert witness enabled him to maintain memberships in the best clubs of New York, a summer home in Newark, and a winter home on Bleecker Street in New York.

After his death in 1866, the fertilizer business was taken over by his son, Charles Victor. Charles continued the fertilizer experiments and in 1874 introduced a fertilizer specifically for potatoes. This was the first time that a fertilizer was formulated for one crop. This was followed by products for tobacco, cotton, corn, citrus, grapes, and fruit trees. Charles Victor was succeeded in the business by his son, Charles H. Mapes in 1916. Charles H. ran the business until it closed in 1926.

The Mapes Superphosphate Company had its plant on Shelter Island located in Suffolk County, Long Island. At the time it was an isolated island. Fertilizer manufacturers preferred to locate islands like these since they were close to the fishing fleet and water transportation was available. There were also few neighbors to object to the smell. Mapes Superphosphate shared the island with three "oil and guano" works and two fish oil works.

The introduction of the Haber process forever changed the fertilizer business, as did the widespread adoption of "rock phosphates" for agricultural purposes in the late 1800s. Phosphate rock, calcium phosphate, is formed as sedimentary marine deposits. It is mined in Florida, North Carolina, Utah, and Idaho. Florida and North Carolina account for about 85% of production in the United States. Rock phosphates are today the world's leading source of phosphates.

The introduction of refrigerated railroad cars and later trucks meant that meat, dairy, and poultry could be farmed far from the cities. Frozen foods were introduced in the 1930's and once they were widely accepted by consumers in the 1950's, the separation between farmer and consumer grew even wider. Suburban sprawl covered what few farms remained near the cities and today the only surviving operations are those specifically set aside as preserved open space. New Jersey has preserved 1051 farms totaling 119,909 acres through its preservation program.

Preserving the land however will not be enough. Maintaining the fertility of farms close to the urban centers relies on chemistry today, the same as it did when Professor James Jay Mapes first bought a small farm near Newark.

For more information about the garbage rendering process, readers should consult, *Fat of the Land: The Garbage Of New York - The Last Two Hundred Years*, by Benjamin Miller. Published by Four Walls Eight Windows, 2000.

More information about the history of phosphate fertilizers and James Jay Mapes can be found in William Haynes, *The American Chemical Industry Volume 1*, Van Nostrand, 1945-54.

New York Meetings

www.newyorkacs.org

NEW YORK NANOSCIENCE DISCUSSION GROUP

5th Anniversary Meeting

These session feature three 25-minute presentations, one each with a focus on chemistry or chemical engineering, biology or medicine, and physics or applied math.

Reaction Chemistry Meets Lithography

Speaker: Colin Nuckolls
Columbia University

Heterogeneous Lipid Membranes Controlled by pH: Applications in Liposome-Based Drug Delivery

Speaker: Sofou Stavroula
Polytechnic University

DNA Monolayers: Hybridization in a Crown

Speaker: Rastislav Levicky
Polytechnic University

Date: Tuesday, April 1, 2008

Times: Refreshments 7:00 PM

Place: New York University
Silver Center, 10th Floor
Room 1001P

31 Washington Place (between
Greene Street and Washington
Square East)

Times: Science 7:30 PM

Place: Room 1003

For more information, or to get on our email list, please contact Julie Kaplan (julie.kaplan@nyu.edu). For directions to NYU, go to <http://www.nyu.edu/about/travel.html>.

LONG ISLAND SUBSECTION

The Ansa-Effect in Permethylmetallocene Chemistry

Speaker: Dr. Jun Shin
Assistant Professor
Chemistry Department
Queensborough Community
College

In many occasions, the reactivity of ansa-bridged metallocene complexes was different from that of its non-ansa analogues. For example, ansa-bridged permethylmolybdenocene dihydride ($\text{Cp}^*_2\text{MoH}_2$) showed the intermolecular C-H or C-C activation while pentamethylmolybdenocene ($\text{Cp}^*_2\text{MoH}_2$) preferred the intramolecular C-H activation to give a tuck-in complex. Also the reductive elimination of H_2 in the ansa bridged permethyltantalocene trihydride complex ($\text{Cp}^*_2\text{TaH}_3$) was 1000–2000 times faster than that in pentamethyltantalocene trihydride complex ($\text{Cp}^*_2\text{TaH}_3$). What did make the difference? Influence of ansa bridges on the chemistry of metallocene complexes will be discussed and compared to non-ansa bridged metallocene complexes.

Date: Thursday, April 3, 2008

Times: Coffee Hour 5:30 PM

Seminar 6:00 PM

Place: Queensborough Community
College

Science Building, S-111

Times: Dinner — after seminar

Place: Neighboring restaurant

Cost: Dinner \$20.00 per person

Please contact Dr. Jun Shin at JSHIN@QCC.CUNY.EDU for directions and parking information.

LONG ISLAND SUBSECTION

Event: The 7th Chemistry Challenge

The Long Island subsection of the NY-ACS invites you to participate in the Chemistry Challenge. This is a chemistry knowledge competition between student teams from area two- and four-year institutions. Thirty multiple choice questions (approximately 75% General and 25% Organic Chemistry) are asked in a friendly and exciting atmosphere that brings colleges and their students and faculty together. Each team is made of three members and all are welcome. Barnes and Noble gift certificates are awarded to the winning team.

Date: Thursday, April 10, 2008

Time: Refreshments 5:00 PM

Challenge 5:30 PM

Place: Queensborough Community College
Science Bldg S-111

Contact: Paris Svoronos at psvoronos@qcc.cuny.edu or 718-631-6280 for directions and parking information or visit the LI-ACS website at http://www.newyorkacs.org/sub_island.html.

HIGH SCHOOL TEACHERS TOPICAL GROUP

"Demo Derby" — An evening of non-stop demonstrations by members of the Chemistry Teachers' Club of NY and the Physics Teachers Club

Electromigration is the directional mass transport of metal atoms due to momentum exchange with conducting electrons. This effect is important in applications where high current densities are used, such as the fine metal wires (interconnects) in microelectronics. Electromigration has been and continues to be one of the most important reliability challenges for high end chips, which incorporate the finest features. Important parameters in electromigration will be discussed, including the interconnect composition, linewidth, and microstructure.

Date: Friday, April 11, 2008

Times: Social and Dinner — 5:45 PM

Place: No reservations required
Caffe Pane e Cioccolato
10 Waverly Place at Mercer Street
(South-west corner)
New York, NY
(You eat, you pay cash only, no credit cards.)

Times: Meeting — 7:15 PM

Place: New York University
Silver Center Room 207
32 Waverly Place (South-east
corner Washington Sq. East)
New York, NY

Security at NYU requires that you show a picture ID to enter the building. In case of unexpected severe weather, call John Roeder, 212-497-6500, between 9 AM and 2 PM to verify that meeting is still on; 914-961-8882 for other info.

Note: Street parking is free after 6:00 PM. For those who prefer indoor attended parking, it is available at the Melro/Romar Garages. The entrance is on the west side of Broadway just south of 8th Street, directly across from Astor Place. It is a short, easy walk from the garage to the restaurant or meeting room.

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NY-ACS BIOCHEMICAL TOPICAL GROUP — JOINT MEETING WITH THE NYAS BIOCHEMICAL PHARMACOLOGY DISCUSSION GROUP

New Targets in Atherosclerosis

Organizer: Richard Ingraham
Boehringer Ingelheim
Pharmaceuticals, Inc.

Speakers: Alan Daugherty
University of Kentucky
Colin D. Funk
Queen's University
Richard M. Lawn
CV Therapeutics
Rajendra K. Tangirala
David Geffen School of
Medicine at UCLA

Atherosclerosis is a complicated disease with a relatively small number of cell types involved in lesion pathology. It has become apparent both from human and animal studies that more than just high LDL levels are involved in the disease process. It should be possible to target some of the inflammatory and other signaling pathways involved in atherosclerosis downstream from the stimuli which provoke it and alter or slow disease progression. Recent examples of potential new targets include members of the 5-lipoxygenase pathway which leads to inflammatory leukotrienes and the MAP kinase JNK2 which appears to alter the activities of scavenger receptors. Inhibition of either pathway seems to inhibit lesion progression. Another well known hypertension target, the angiotensin II pathway, now appears to be playing a seemingly independent role in promoting plaques formation as well as aneurysm. A greater understanding of this pathway may also provide us with new approaches to treat atherosclerosis.

Date: Tuesday, April 22, 2008

TimeS: 1:00 PM – 5:00 PM

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

Space is limited. Reserve a seat on-line at:
<http://www.nyas.org>

NYAS Members and BPDG Affiliates may attend BPDG meetings free of charge.

Non-members may attend for a fee of \$20 per event; Student Non-members for \$10.

To become a Member of the Academy, visit
<http://www.nyas.org/landing.html>

HUDSON-BERGEN CHEMICAL SOCIETY — JOINT MEETING WITH THE SCHOOL OF NATURAL SCIENCES OF FAIRLEIGH DICKINSON UNIVERSITY

The 10th Annual Undergraduate Research Symposium

The chemistry programs of the following colleges are members of the Hudson-Bergen Chemical Society

- Essex County College
- Fairleigh Dickinson University
- New Jersey City University
- Ramapo College of New Jersey
- St. Peter's College
- Stevens Institute of Technology

This is a forum for undergraduate students and their faculty mentors from colleges and universities that participate in the subsection's activities to present the results of their research. Outstanding graduating students are also being recognized (they receive the Hudson-Bergen Chemical Society Award consisting of a certificate and a book, courtesy of John Wiley and Sons). All the presenters will receive certificates and a book, courtesy of McGraw-Hill.

Students who wish to present posters must send an abstract via e-mail to mleonida@fdu.edu by April 10, 2008. The abstract should be in MS Word format and must include the names and addresses of the student(s) and their faculty adviser(s) in addition to the title of the abstract. The abstract should not exceed 200 words. The name of the student presenting the poster should be underlined. There is no registration fee.

Antibiotics Protect the Brain and Combat Opioid Addiction

Speaker: Dr. Scott Rawls
Temple University School of
Pharmacy and Medicine

Beta-lactam antibiotics do more than just kill bacteria. The world's most commonly prescribed antibiotics increase the cellular reuptake of glutamate in the mammalian brain by activating the GLT-1 transporter protein. It has been long hypothesized that increasing GLT-1 transporter capacity represents a powerful approach for preventing drug addiction and neurological disorders caused by increased glutamatergic transmission. However, investigating this hypoth-

esis in animal models has been limited until now by a lack of agents that selectively activate GLT-1 transporters. Results from our experiments will fill this gap in our knowledge by determining the neurochemical and molecular interactions between beta-lactam antibiotics and the glutamate system in specific brain regions and elucidating the functional significance of these interactions as related to opioid addiction

Scott Rawls obtained his BS in Chemistry from East Carolina University in Greenville, N.C., and his Ph.D. in neuroscience from East Carolina University School of Medicine. He was a postdoctoral fellow at Temple University School of Medicine in the laboratory of Dr. Martin Adler. Since 2003 he has been a faculty member in the Department of Pharmaceutical Sciences at Temple University School of Pharmacy, and he holds a secondary appointment in the Center for Substance Abuse Research at Temple University School of Medicine. He teaches physiology, pharmacology and neuroscience courses at Temple to both professional and graduate students. His NIH-funded research program examines the pharmacological basis underlying the preclinical effects of anti-glutamatergic drugs, cannabinoids, opioids and vanilloids.

Date: Friday, April 25, 2008

Times: Social/Poster Session 5:00 PM
Dinner 6:00PM

Awards/Lecture 7:00PM

Place: Dickinson Hall Café
Fairleigh Dickinson University
Teaneck, NJ

Cost: \$10.00 for dinner. The lecture is free. (Dinner cost for student presenters and awardees is waived.)

Reservations: Dr. Mihaela Leonida 201-692-2338, email: mleonida@fdu.edu by April 21, 2008.

ANALYTICAL TOPICAL GROUP

In-situ Fabrication of Conducting Polymer Nanocomposites for Biosensing Applications: Multiple Roles of DNA Functionalized Carbon Nanotubes

Speaker: Huixin He
Chemistry Department
Rutgers University
Newark, NJ

Conducting polymers are attractive for sensor applications because their electronic and electrochemical properties are highly sensitive to molecular interactions, which provide excellent signal transduction for molecular detection. Among conducting polymers, polyaniline is unique since it is environmentally stable and easy to fabricate. It has been applied widely in chemical sensors but not as much in biosensors. The reason is that native polyaniline is neither electrochemically active nor conductive in neutral solutions, which is a prerequisite for biosensor applications. It is also limited both in the variety of molecules that can be detected and in the selectivity of the detection. Major breakthroughs in this field were the discoveries of self-doped polyaniline and polyelectrolyte-anion-doped polyaniline, which brought polyaniline into the biosensor field due to the improved redox activity and conductivity in neutral pH solutions. However, compared to the parent polyaniline, the electrochemical activity, conductivity, and the chemical and mechanical stabilities of both self-doped polyaniline and bulky polyelectrolyte-doped polyaniline are greatly reduced due to steric effects.

Dr. Huixin He received her PhD in Peking University, China in 1997. She joined National University of Singapore as a

(continued on page 12)

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ANALYTICAL TOPICAL GROUP

(continued from page 11)

research associate, working mainly on plastic microfluid channels and micropatterns by soft lithography. In 1999, she came to the United States working with Professor Nongjian Tao, first in Florida International University and then Arizona State University. At this period time, she was mainly working on molecular electronics, including the electronic properties of metallic quantum wires and single chain conducting polymer wires. In 2002, she joined chemistry department, Rutgers University at Newark, as an assistant professor. Her current research interests include conducting polymer nanocomposite, especially in the fundamental study of interaction at interfaces in the composite and exploration of the composite materials for chemical and biosensor applications. She is also actively working on developing nonviral gene delivery system using these nanocomposites and other nanomaterials.

Date: Wednesday, April 30, 2008
Time: 6:00 PM
Place: The Graduate Center of the City University of New York Science Center Room 4102 365 Fifth Avenue New York, NY



EARTH DAY - HAIKU CONTEST

To review the contest regulations go to: www.acs.org/earthday - then contest K-12 - then Haiku Contest pdf. Two Haiku accepted per category per school. Send by April 1 to:

Joan Laredo-Liddell
Haiku Contest
391 Palmer Road
Yonkers, NY 10701-5239
JLaredoLiddell@aol.com

Also check the NY web site: <http://www.newyorkacs.org> for other activities.

SCENES FROM THE NEW YORK SECTION ANNUAL SECTIONWIDE CONFERENCE

The New York Section's General Meeting and Sectionwide Conference was held on January 19, 2008 at St. John's University. Members enjoyed a presentation of awards, a keynote address from Glenn Ruskin of the ACS, a planning session for 2008 and lunch. Dr. Marc Walters, 2008 Chair, outlined his goals for the year. Dr. Barbara Hillery presented the candidates for office for the 2008 elections. The conference was a great opportunity to meet new members and socialize with ACS friends.



The Outstanding Service Award for 2007 was presented to Dr. Vijaya Korlipara (center) of St. John's University for her outstanding and numerous contributions to the New York Section over many years. Dr. Korlipara has chaired both the Long Island Subsection and the New York Section. She was instrumental in making the Nichols Centennial Celebration and the Chemagination Program a success. Presenting the award are Joan Laredo-Liddell and Jean Delfiner, former awardees and chairs of the 2007 OSA Committee.

OUTSTANDING SERVICE AWARD OF THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY

Dr. Vijaya L. Korlipara

The Outstanding Service Award of the New York Section of the ACS is presented at the sectionwide January meeting of the Section to that member of the New York Section who has contributed selflessly of their time, talent and energy to the benefit of the activities of the New York Section.

Today we are here to present this award to our 2007 winner – Vijaya Korlipara.

Vijaya received her Ph.D. in Medicinal Chemistry, College of Pharmacy of the University of Minnesota and has been teaching at St. John's University, College of Pharmacy, since 1992.

A member of the American Chemical Society's, Division of Medicinal Chemistry, Division of Organic Chemistry, Vijaya has honored the New York Section by making 9 presentations at ACS meetings.

Vijaya has received 7 grants for research in her area of medicinal medicine and has 8 publications.

With her teaching schedule and research, Vijaya devoted time to the New York Section in numerous capacities. An active member of the Long Island Subsection since 1993, Vijaya had chaired the subsection. She has also been a Board Member of the NY Section; a member of the Nichols Medal Award Jury; Budget Committee, a Councilor, and of course, Chair of the New York Section. In 2003, at the 226th National ACS Meeting in New York, Vijaya co-chaired with Yorke Rhodes: "The Celebration of 100 Years of the William H. Nichols Medal."

When we think of Vijaya, we think of Chemagination. She introduced the Chemagination Program to the NY Section after learning about it at the Leadership Conference for Chair-elects in 2003. Chemagination is an activity that promotes interest in science among high school students. High School students from over 400 schools are invited to participate in a science essay and poster contest to address the question: "What innovation or breakthrough in the field of chemistry will be important in the lives of teenagers 25 years from now?" Students choose one of four

categories: Alternative Energy Resources, Environment, Medicine/Health or New Materials. The introduction, growth and success of this program is due to the effort of Vijaya. In 2004, the first year, ten posters were submitted; four were sent to the Regional Level; and one went to National and won first place in its category. Vijaya was a little disappointed that only 10 posters were received but thrilled that NY was a winner at National. The second year, 15 posters submitted; four sent to Regional; and one to National, which won first place.

The third year, 2006, 39 posters were submitted; 11 different schools represented and over 100 high school students attended the event at St. John's University. The 5th Annual Chemagination Contest will be held on March 2008 at St. John's. Unfortunately, the rest of the ACS Sections did not find the same enthusiasm as here in NY – so the National competition was canceled. Thanks to Vijaya for keeping the flame of creativity burning bright in our Section.

We are pleased that Vijaya's husband, Ravi, and her two daughters, Tara and Rekha are here today. The NY Section would like to thank them for sharing Vijaya with us.

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2007 NICHOLS FOUNDATION HIGH SCHOOL CHEMISTRY TEACHER AWARD

Stephen Radice, (center), an outstanding chemistry teacher at Edward R. Murrow High School in Brooklyn, was the recipient of the 2007 Nichols Foundation High School Chemistry Teacher Award. This award is presented each year to an exceptional chemistry teacher in the New York Section. Stephen's very high standard of teaching and exceptional ability to promote the enjoyment of chemistry qualified him for this award.



STEPHEN RADICE

The New York Section, 2007 Nichols Foundation High School Chemistry Teacher Awardee is Stephen Radice.

Stephen received his BA from Brooklyn College with a major in chemistry and his Masters in Science Education from the College of Staten Island.

Stephen is presently teaching at Edward R. Murrow High School in Brooklyn, a school of approximately 3900 students in grades 9-12, where 62% of the population is non-white. Prior to this, he taught at New Utrecht High School.

His teaching load has included Chemistry Laboratory for the Hearing Impaired, Advanced Placement Chemistry, Regents Chemistry, Topics in Chemistry, Active Physics, Various Special Education Laboratories including Earth Science and Living Environment.

Stephen has New York State Permanent Certification in Chemistry; New York City Certification in Chemistry and General Science and New Jersey Teacher of Science.

Stephen uses unique techniques to captivate the interest of his students. He wears appropriate attire for teaching, ex. Periodic Table shirts and ties; Mole Day shirt; Einstein shirt and tie.

He also has a knack to use words; ex. Mole Day – October 23 - becomes a Mole-a-bra-

tion.

Demonstrations are also incorporated in his teaching, as well as, brain teasers. He incorporates motion picture clips, for example, when teaching Boyle's Law. Stephen uses "Men of Honor". In it a character is asked "Why is Boyle's Law important to a Navy Diver?" The question is then asked of the class and various answers are elicited. Another clip is then shown to the students for the final answer.

He has a web page where students can get copies of review sheets and links to other sites, as well as, an e-mail available for correspondence and/or questions from his students.

After topics are taught, students work in groups to create concept maps.

Interestingly, when Stephen is teaching alkanes, he asks students to count from 1-10 in different languages. His point is that students must learn the Language of Chemistry.

To challenge and inspire his students, Stephen takes his students to hear lectures by Nobel Laureates; students go to Polytechnic University to do laboratory experiments; or a trip to the Museum of Natural History to visit the Hall of Minerals and Gems and the Rose Center for Earth and Space.

Extra curricula work involves preparation for the Chemistry Olympiad Competition and

Advanced Chemistry Test preparation.

Stephen is also involved with science organizations; co-authored the Brooklyn High School Chemistry Curriculum in 2002; and works with Fischer Science Education.

One of Stephen Radice's former students writes: "Yesterday, the phone rang and I was so excited to hear the familiar, laughing voice! After happy greetings and catching up, I learned the Mr. Radice was applying for the Nichols Foundation HS Chemistry Teacher Award. ...He truly personifies both the science of chemistry and the talent of a teacher." The student is Sofia Shapiro, a pediatrician pursuing a fellowship in Pediatric Endocrinology at Mt. Sinai School of Medicine.

Traci Frey, Assistant Principal-Science Department of Edward R. Murrow High School writes: "Since 1988, he has inspired both students and colleagues alike to reach their potential. As a mentor to new teacher, he has guided his interns in such areas as lesson planning, student engagement and classroom management. He will represent your foundation proudly, as he does Edward R. Murrow High School."

KEYNOTE ADDRESS



An excellent and timely keynote address was given by Glenn S. Ruskin, Director, Office of Legislative and Government Affairs of the American Chemical Society. It was titled: The Chemistry of Advocacy.

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PROCLAMATION



Joan Laredo-Liddell (center) was presented with a proclamation from Governor Spitzer acknowledging the many contributions of the New York Section and Joan in promoting the benefits of chemistry. Jean Delfiner (left) read the proclamation to Joan. Chair, Dr. Marc Walters is on the right.

HIGH SCHOOL TEACHERS TOPICAL GROUP



Sr. Mary Virginia Orna, OSU, was the December 2007 presenter for the High School Teachers Topical Group. Her presentation was "The Chemist as Detective in Examining Art and Artifacts".

(left to right): Joan Laredo-Liddell (co-chair HSTTG) presenting ACS Certificate; Sr. Mary Virginia Orna (speaker); Rudolph Jones (director) presenting marble paper-weight; and Jean Delfiner (co-chair HSTTG).

PROJECT SEED

Project SEED students presented their research projects at the Conference. Mrs. Nadia Makar, (far left) chairs the Project SEED Committee.



PHALLACY

Over 30 members of the ACS New York Section came to the Cherry Lane Theatre to Carl Djerassi's play "PHALLACY".

(Left to right): Stephen Goldberg, Donald Clarke, Jean Delfiner, Joan Moeller, Carl Djerassi, Joan Laredo-Liddell, Esther Breslow, Ronald Breslow.



APPRECIATION PLAQUE

Dr. Marc Walters, 2008 Chair of the New York Section, presented the Appreciation Plaque and Former Chair Pin to Joan Laredo-Liddell for her excellent work in leading the section in 2007.



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Chemistry and the Arts

Other **Meeting Highlights** include Saturday and Sunday educational programming, the Spring RSC meeting, workshops and short courses, career development and chemical entrepreneurship activities, WCC luncheon, vendor expo, awards banquet, receptions and barbecues. **Register before April 27 for discounted rates!**

The QCC campus is easily accessible by car and public transportation, and on-campus parking is free. Bayside is located in suburban Queens, NY and is only a short trip from Manhattan and its attractions.



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, April 28, 2008

Time: 6:30 PM

**Place: Fairleigh Dickinson University
College at Florham
Hartman Lounge, the Mansion
Madison, NJ**

Cost: \$5.00 - pizza dinner

Directions: can be found at view.fdu.edu/default.aspx?id=238.

Reservations: call (732) 463-7271 or email njacsoffice@aol.com prior to **Wednesday, April 23, 2008**.

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.

ChemTAG MEETING

Date: Tuesday, April 8, 2008

Time: 4:00 – 6:00 PM

**Place: Union High School
2350 North 3rd Street
Union, NJ**

<http://www.twpunionschools.org/uhs/index.html> for directions.

Hostess: Gina Glorioso
gglorioso@twpunionschools.org
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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 searching.

The next meeting for the Careers In Transition Group will be held **Thursday, April 10, 2008**, 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 vjkuck@yahoo.com, if you plan on attending this meeting.

TEACHER AFFILIATES

Executive Committee Meeting

Date: Monday, April 14, 2008

Time: 4:30 PM

**Place: Chatham High School
255 Lafayette Avenue
Chatham, NJ**

Contact: Cheryl Litman at, 1-732-289-3700
Ex 4034, clitman@mail.nbtschools.org

MOLE DAY POSTER CONTEST

The Teacher Affiliates of the North Jersey Section are conducting their annual Mole Day Poster Contest. The theme this year is Moles of Fortune. Go to www.moleday.org for theme ideas and go to www.njacs.org for contest rules or contact Cheryl Litman at, 1-732-289-3700 Ex 4034 or send email questions to clitman@mail.nbtschools.org. All entries must be postmarked by **April 30, 2008**.

NORTH JERSEY POLYMER TOPICAL GROUP

Biomaterials in Medicine and Personal Care

Organizer: Dr. Hongbo Liu
J&J Ethicon

"From Willow Bark to PolyAspirin"

Dr. Kathryn Uhrich
Rutgers University

"Functionalized Biomaterial Systems for Bone Tissue Engineering"

Dr. David Kaplan
Tufts University

"Biocompatibility Evaluation of Biomaterials"

Dr. Richard Hutchinson and Dr. Thomas Barbolt
Johnson & Johnson

"Application of Peptide Nanotubes in Virus Detection"

Dr. Hiroshi Matsui
CUNY

"Human Tropoelastin as a Bioactive Polymer"

Dr. Burt Ensley
DermaPlus, Inc.

"Novel Absorbable Polymers and Their Applications"

Dr. Rao Bezwada
Bezwada Biomedical

This event features presentations contributed by leading scientists from both academia and industry. This symposium is intended to bring the local polymer science community up to date on the advancement of biomaterials in a range of applications such as medical devices, tissue engineering, diagnostics, and many other exciting areas.

This event features presentations, posters and networking opportunities at a mixer during the poster session. In addition to posters on biomaterials, general polymer posters are being requested. We are looking for poster submissions in polymer research in diverse areas, such as polymers in health care, advanced polymer materials, polymer characterization etc. Whether you are from academia, large corporations or local businesses, this is a good opportunity for you to showcase your research, network with other people and contact possible employers and clients. Any registered conference attendee may sign up to present a poster on any scientific topic.

We are looking forward to seeing you at this both scientific and networking event.

Date: Thursday, May 1, 2008

Time: 1:00 PM – 6:30 PM

Place: Rutgers University, Douglass Campus Center, Trayes Hall, New Brunswick, NJ

Poster Session

Dr. Bin Wei (ICI National Starch and Chemical), organizer and presiding

Mixer

Registration: By mail using the registration form below. Advance fee is required: ACS Member, \$40; Non-member; \$50; Student, \$25. After April 17, 2008: Member, \$45; Non-member; \$55; Student, \$30. Please send your full contact information along with a check made payable to NJACS-Polymer Group to Dr. Willis B. Hammond, Treasurer, NJACS-PTG, 128 Center Ave., Chatham, NJ 07928. Name badge and program will be available at Trayes Hall beginning at 12 noon on May 1, 2008.

Directions: See the Rutgers University Website.

(<http://maps.rutgers.edu/maps/default.aspx?campus=6>)

Poster Submission: Please send Title, Abstract, and contact information (affiliation, mail and e-mail addresses, phone number) to Dr. Bin Wei (ICI National Starch and Chemical), bwei01@gmail.com. Send registration fee to Dr. Willis B. Hammond at the address given on the previous page. If you are from academia, large corporations or local businesses, this is a good opportunity for you to showcase your research, network with other people and contact possible employers and clients. In addition to topics on Biomaterials in Medicine and Personal Care, we are looking for poster submissions in polymer research in diverse areas, such as polymer in health care, advanced polymer materials, polymer characterization etc. Abstracts must be 400 words or less. No tables and graphics. The size of the poster board is 5' wide and 3' high. All poster abstracts must be submitted to Dr. Bin Wei by **April 17, 2008**.

Sponsors: J&J Ethicon, Apollo Ventures, LLC

Endorsing Organizations: NY Society of Cosmetic Chemists, NYSTAR CUNY Center for Engineered Polymeric Materials, NJIT Medical Device Concept Laboratory

More Information: can be found at <http://www.njacs.org/ptg.html> or contact Hongbo Liu HLiu5@ETHUS.JNJ.com or Willis Hammond w Hammond1@verizon.net.

Registration Form

Name _____ Affiliation _____

Address _____ City _____ Zip _____

E-mail _____ Phone _____

ACS Member, \$40; Non-member; \$50; Student, \$25 Must be in by **April 17, 2008**.

After April 17, 2008: Member, \$45; Non-member; \$55; Student, \$30

I will submit a poster: Title _____

Send with check payable to **NJACS-Polymer Group** to Dr. Willis B. Hammond, Treasurer, NJACS-PTG, 128 Center Ave., Chatham, NJ 07928

Call for Papers/Abstracts

56TH 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 by Dr. JaimeLee I'olani Rizzo, Associate Professor of Chemistry at Pace University, presentation of student papers (15 minute talks to small groups), followed by a luncheon.

Date: Saturday, May 17, 2008

Place: Queensborough Community College

For highlights of last year's event:

http://newyorkacs.org/grp_students.html

To:

1. Submit an abstract on-line
2. Print a flyer for posting - Print "Call For Papers" frame
3. Obtain directions to Queensborough Community College.

Go To: http://newyorkacs.org/grp_students.html

If you have any questions please contact:

Alison Hyslop, Co-chair
hyslopa@stjohns.edu

Sharon Lall-Ramnarine, Co-chair
slallramnarine@qcc.cuny.edu

JaimeLee I'olani Rizzo, Co-chair
jrizzo@pace.edu

Others

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Snapshots of Consulting Projects

Speakers: John Bonacci
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and

Richard Goodman
RMG Consulting LLC

Dr. Bonacci will describe several interesting case history summaries ranging from expert witness experiences to a project on Global Warming primarily from a technology application perspective. These experiences evolve from work for clients of his company Fibonacci, Inc. over a 20 year period but with recent emphasis. The case histories emanate from catalyst applications, air pollution control, safety & accidents and some design work.

Dr. Goodman will focus on the diversity of experiences as a consultant. Having worked for Kodak, Richard Goodman established his consultancy, RMGC LLC, based upon the needs of Kodak for an expert delegate representative to the ISO TC 130 Graphic technology Working Groups. He will also touch on the diversity of his other clients from very different business areas and how one can prepare himself for these other opportunities.

Dr. John C. Bonacci is a PhD Chemical Engineer with degrees from Clarkson University and U. of Pennsylvania. He has a P.E. and US Patent Agent license and is a Fellow Member of AICHE and this local chapter. He holds 101 global patents and has authored dozens of papers and presentations. He has been an Adjunct Professor at Rutgers and Stevens and is currently President of ACC&CE. His most recent publication is a paper in the Jan. 2007 issue of CEP.

Dr. Goodman is a PhD surface chemist with degrees from the Universities of Michigan and California. He has had a thirty-five year career with large companies, including the

original American Cyanamid Company and the Kodak Polychrome Graphics JV owned by Kodak, with entrepreneurial enterprises, e.g. connected to the 1970's energy crisis and running his own consulting businesses. He has 15 US patents and has been Chair of the New York Section of the ACS, President of the Technical Association of the Graphic Arts and is the current VP of ACC&CE.

Date: Tuesday, April 8, 2008
Time: Cash Bar 6:00 PM
Dinner 6:30 PM
Presentation 7:30 PM
Place: Snuffy's Restaurant
Park & Mountain Ave.
Scotch Plains, NJ
Cost: \$35 Members, \$45 Non-members

To Reserve: Call 1-973-729-6671 or
e-mail: accce@chemconsult.org
Advanced registration is required.



ChemShorts FOR KIDS —2008

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by Dr. Kathleen A. Carrado, Argonne National Labs kcarrado@anl.gov

ChemShorts Home

The Elementary Education Committee of the ACS Chicago Section presents this column. They hope that it will reach young children and help increase their science literacy. Please share with children and local teachers.

Please note: All chemicals and experiments can entail an element of risk, and no experiments should be performed without proper adult supervision.

December, 2007

Mustard Mystery

Kids, is there really silver in that silver coin? Even though our dimes, quarters, half dollars, and "silver" dollars are silver in appearance, those minted after 1971 actually have no silver in them. Silver was completely removed from dimes and quarters in 1965 and replaced with an outer layer of copper-nickel alloy bonded to an inner core of pure copper. The half dollar and "silver dollar" followed suit in 1971. Believe it or not, our

"copper" pennies nowadays are mostly zinc and our "silver" coins are mostly copper!

Dimes and quarters minted before 1965 were composed of an alloy of 90% silver and 10% copper, and they are considered somewhat valuable by collectors. You can easily test for the presence of silver with a simple experiment. Using a plastic knife, apply a generous portion of mustard (yes, the yellow stuff you put on your hotdog) to both pre-1965 and post-1965 dimes and quarters. Let them sit overnight on a paper towel. The next day, rub off the mustard. A black spot will remain on the true silver coin but not on a non-silver coin.

What's happening? Mustard contains natural sulfur compounds. Sulfur is an element that is very common in our day-to-day world. Sulfur reacts with the silver to form a black powder (a "precipitate") of silver sulfide. The chemical formula for silver sulfide is Ag₂S.

One of the challenges for this experiment will be in hunting down the pre-1965 coins - good luck and happy hunting!

Here is an interesting tidbit. Eggs also contain a lot of sulfur. If you eat eggs with a silver plated fork you will find that your fork has black tarnish on it when you are finished. You made a new chemical while eating your breakfast!

Check out the ChemShorts October 2000 article on "The Science of Money" for other interesting trivia about coins and paper money (<http://membership.acs.org/C/Chicago/ChmShort/CS00.html#10.00>).

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