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Professor Carolyn R. Bertozzi
2009 Nichols Medalist

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ChemTAG Meeting
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Monday, March 30, 2009

North Jersey Executive Committee Meeting
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MARCH HISTORICAL EVENTS IN CHEMISTRY

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

March 1, 1896

Antoine Henri Becquerel discovered radioactivity of uranite in pitchblende on this day.

March 3, 1709

Three hundred years ago, Andreas S. Marggraf, was born. He isolated zinc from calamine; distinguished between potash and soda by flame test; found alumina in clay; and discovered beet sugar in beetroot.

March 3, 1918

Fifty years ago, Arthur Kornberg, shared the Nobel Prize in Physiology or Medicine in 1959 with Severo Ochoa for their discovery of the mechanisms in the biological synthesis of ribonucleic acid and deoxyribonucleic acid. He was born on this date.

March 6, 1869

Aleksei E. Favorskii, a researcher in the anionic rearrangements of acetylenes and _haloketones, was born on this date.

March 10, 1762

Jeremias B. Richter, who was born on this date, discovered the law of equivalent proportions; was the first to establish stoichiometry, and founded the basis of quantitative chemical analysis.

March 12, 1824

One hundred and fifty years ago, Gustav R. Kirchhoff invented spectroscope with Robert Bunsen with which they discovered cesium (Cs, 55) in 1860, and rubidium (Rb, 37) in 1861. He was born on this date and discovered that substances, which emit radiation, absorb the same type of radiation when cool (Kirchhoff's Law).

March 14, 1984

Twenty-five years ago, the first atom of element of hassium (Hs, 108) was observed at GSI Laboratory, Darmstadt on this date.

March 16, 1834

One hundred and fifty years ago on this date, Hermann W. Vogel was born. He invented the orthochromatic photographic plate in 1873; designed a photometer; and was a researcher in spectroscopic photography.

March 19, 1900

Seventy-five years ago, Frédéric J. Joliot (Joliot-Curie), H. Halban and L. W. Kowarski proved experimentally that neutron emission occurs in nuclear fission. In 1935, Joliot shared the Nobel Prize in Chemistry with his wife Irène Joliot-Curie for production of artificial radioisotopes. He was born on this date.

March 19, 1984

Twenty-five years ago, the ten millionth CA Abstract was published in volume 100, issue number 12 of Chemical Abstracts on this date.

March 20, 1834

One hundred and fifty years ago on this date, Charles W. Eliot, a teacher of chemistry and president of Harvard University, was born.

March 24, 1884

One hundred and twenty five years ago, Peter Joseph William Debye was born. He was a researcher in dipole moments and powder method of x-ray diffraction andf was awarded the Nobel Prize in Chemistry in 1936 for his contributions to our knowledge of molecular structure through his investigations on dipole moments and on the diffraction of X-rays and electrons in gases.

March 31, 1811

One hundred and fifty years ago, Robert Bunsen invented the spectroscope with Gustav R. Kirchhoff with which they discovered cesium (Cs, 55) in 1860, and rubidium (Rb, 37) in 1861. He was born on this date and invented the Bunsen burner, filter pump, a galvanic battery, and with Henry E. Roscoe, the actinometer.

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

<http://faculty.cua.edu/may/Chemistrycalendar.htm> or This Week in Chemical History in the ACS website, <http://www.acs.org/whatischemistry>.

THIS MONTH IN CHEMICAL HISTORY - I

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

To quote verbatim from an earlier essay: "The idea of critically reviewing substantial areas of chemistry and producing a periodic report of progress originated with the great Swedish chemist of the early nineteenth century, Jons Jacob Berzelius (1779-1848). The original series of Jahresberichte, Berzelius' brain child and the first of the Annual Reports, did not survive its originator. But there are other long-lived series of such reports".

This essay will focus on Volume VI of the Annual Reports on the Progress of Chemistry issued by the Chemical Society (of London) which has now metamorphosed into the Royal Society of Chemistry. This ambitious attempt to encapsulate the total of the significant work in chemistry for a whole year covers 1909 in a mere 270 pages.

It was, relatively, a peaceful year in world history; 5 years before World War I. Tensions were building in Europe but had not yet reached a boiling point.

Reviewing general and physical chemistry T. M. Lowry, of Bronsted-Lowry fame, looks first at pressure effects on physical and chemical properties. R. Threlfall has found no conversion of graphite to diamond at pressures up to 10,000 atmospheres and "temperatures up to the melting point of magnesia" – about 3100K. A new form of ice (shades of Vonnegut?), Ice III, has been observed at 3000kg/square cm. P.W. Bridgman, the high-pressure guru, has described two new high-pressure gauges based on a direct measurement of gas volume and on the resistance of a mercury column. New precision has been achieved in measuring osmotic pressure, including investigations by the Earl of Berkeley and his colleagues; so much for the stereotype of the indolent nobility. Detailed studies of the thermal dissociation of calcium carbonate by Le Chatelier show marked deviations among different experimental studies, perhaps attributable to different levels of adsorption of carbon dioxide by differently sized particles. E.C. Franklin has been studying conductivities of electrolyte solutions in liquid ammonia; he had done many pioneering studies of this remarkable solvent. Ostwald's dilution law relating concentration and degree of ionization, has been investigated for a wide range of carboxylic acids.

In reviewing inorganic chemistry H. B. Baker (whose work on intensive drying I wrote on some years ago in the Journal of Chemical Education) writes: "it is difficult to give a general idea of a year's work" – presumably in the 22 pages or so allocated to him. He makes some interesting remarks which could well apply to work done a century later!

"In an ideal chemical world, nothing would be published until a complete account of the subject of research could be presented. But apart from the general question of publishing carefully worked out installments of a large research, the scramble for priority, happily not common in this country[!], is often responsible for the appearance of immature work."

Sir William Ramsay has been unable to detect helium in the radioactive breakdown of thorium. There has been much discussion of Prout's hypothesis, that all atomic masses should be integral on the scale of $H = 1$, but since 1909 was before the fuller understanding of isotopes the arguments descended into numerology rather than verifiable science. Meanwhile new determinations of atomic weights have improved values for, among others, chlorine, nitrogen, and carbon.

Silane and disilane have been obtained as pure compounds, and various chlorosilanes probably containing chains of four and six silicon atoms have been characterized. Raschig has isolated chloramine for the first time, and the dangerous nitrogen trichloride has also been prepared in pure form. A new electrolytic ozonizer produces as much as 23% of ozone in oxygen. The disputed existence of sulfur dichloride has now been confirmed.

In the next essay I look at other areas of chemistry from the perspective of 1909.

THIS MONTH IN CHEMICAL HISTORY - II

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

In continuing to review some significant developments in chemistry as reported in "Annual Reports of the Progress of Chemistry for 1909", published by The Chemical Society in 1910, I turn my attention first to the section on organic chemistry written by Cecil H. Desch and Arthur Lapworth. The latter was a significant pioneer in physical organic chemistry. To put the period in perspective (recall that Bohr's theory of the hydrogen atom is still in the future) let me quote: "The chemical importance of certain physical properties, notably colour and fluorescence, in their relation to structure, has been dealt with in several previous Annual Reports ... we are still far from possessing a complete theory of the phenomena. ... The formulation of ideas of structure in terms of the electron theory has so far made little progress in organic chemistry, the conception being still too indefinite for immediate application to so complex a problem."

A later paragraph goes on to say: "The influence of unsaturated or double linkings on the properties of a compound ... and the nature of so-called "partial valencies" are questions which recur..." We tend to think of Alfred Werner in connection with his insightful investigations into coordination compounds, but he came to that area via chemical and stereochemical studies of oximes with Hantzsch, and the 1909 Report goes into considerable detail on Werner's ideas on how "elements of decidedly electropositive or negative character" will exert their polar character on reactions of unsaturated compounds containing them in contrast to the relatively non-polar carbon and hydrogen.

Perhaps reflecting Lapworth's interests there is an extended section on "Mechanism of Chemical Change" of organic systems, including interpretation of the effects of acid catalysts in reactions of carbonyl compounds; kinetic studies of the rate of formation of urea from ammonium ions and cyanate ions (Wöhler's famous synthesis); the Walden inversion; and isomeric changes such as the Hofmann and Beckmann reactions.

The new catalytic reactions of Sabatier and Senderens include reductions with hydrogen over metal catalysts; and hydration, dehydration, oxidation, and elimination of hydrogen halide – versatile systems indeed. E. Fischer's syntheses of polypeptides and of amino-acids are reported.

A section on stereochemistry by H. O. Jones features prominently the first resolutions of organic compounds that have "enantiomorphism of the molecule without being assignable to a single asymmetric atom..." Perkin, Pope and Wallach resolved 1-methylcyclohexylidene-4-acetic acid and Mills and Miss Bain (!) 4-oximinocyclohexanecarboxylic acid. Each of these molecules is devoid of a plane of symmetry but contains no individual "asymmetric" atom. Optically active compounds with an "asymmetric" silicon atom have been resolved. Pasteur's biochemical method has been used to partially resolve benzaldehydecyanohydrin; emulsin catalyses the hydrolysis of the d-enantiomer more rapidly than that of the l-enantiomer. In addition a number of amino-acids have been resolved by the action of yeast in the presence of sugar including d-phenylalanine and d-serine. Further examples of optically active nitrogen compounds have been studied including the quite simple methylethylaniline oxide, resolved via its d-bromocamphorsulfonate salt.

I conclude with the report on radioactivity by none other than Frederick Soddy, Rutherford's collaborator, coiner of the term isotope, and Nobel Laureate for chemistry in 1921. The report starts with a metaphorical bang. Alpha radiation has been conclusively proved to be doubly charged helium atoms. The emanation from 140 mg of radium was collected and its emission spectrum confirmed that helium was produced by radium decay. You'll recall that this work is prior to Rutherford's proposal of the nuclear atom, and the next reports foreshadow that work. Two methods: zinc sulfide scintillations; and the Geiger counter announced by Rutherford and Geiger; can count individual alpha particles. The ratio e/m for beta particles has experimentally been determined to decrease as the velocity of the particles (electrons) approaches that of light. The results are in complete accord with the Lorentz equation and this "experimental proof appears also to have important metaphysical [!] consequences in establishing the Lorentz-Einstein principle of relativity."

Gamma rays are still, in 1909, regarded as particulate and the contemporary theory, known as the neutral-pair theory, holds that a gamma ray consists of an electrically neutral pair of a negative and a positive electron.

I cannot claim to have read carefully every word of Soddy's review, but I think I am correct in claiming that he never uses the word transmutation in describing radioactive change – an interesting reflection on the disrepute in which this alchemical term was held at that period.

WATER POLLUTION ANALYSIS IN NEW JERSEY — EMPLOYING THE CUTTING EDGE ANALYTICAL TECHNOLOGY OF 1876

By Kevin K. Olsen, Montclair State University

Part One: Telling the players without a scorecard

As this article is being written the ground outside is covered with snow and the forecast calls for several days of freezing temperatures. By the time it appears in *The Indicator*, the snow will most likely be melted and much of the water will be stored in one of our state's many reservoirs.

New Jersey has always depended on surface water for much of its potable water supplies, and for almost 300 years, much of its power as well. The New Jersey DEP has recently published a map identifying over 140 mill ponds and water canals that powered all types of mills.

It is therefore not surprising that significant portions of the Annual Report of the State Geologist feature detailed discussions of New Jersey's water resources. The report for 1876 provides us with valuable insights into the uses of surface water and what was known about pure water and public health. Sadly, the names of the individual scientists who worked on the report have not been recorded.

It had been known for centuries that there was a link between pure water and good health. But it was not until the pioneering epidemiological work of Dr. John Snow of London (1813-1858) that nature of the link was explored methodically. The first edition of Snow's groundbreaking *On the Mode of the Communication of Cholera* was published in 1849 and an expanded edition came out in 1855. By carefully mapping mortality and water supply, Snow became the first scientist to prove that contaminated water could spread disease. This was dramatically demonstrated during his study of two cholera outbreaks in London during 1854 and 1857. The 1854 outbreak was famous because Snow was able to trace its source back to a single contaminated well on Broad Street. According to legend, Dr. Snow was able to stop the outbreak by the simple expedient of removing the handle from the well's hand pump. Historians have recently come to doubt that the outbreak was stopped so easily, but in the public mind (and in that of many historians of science) the Broad Street pump handle marked the beginning of modern public health measures.

Dr. Snow did not have the advantage of the Germ Theory of Disease. Louis Pasteur (1822-1895) would not publish his own pioneering work, *Germ Theory and Its Applications to Medicine and Surgery* until 1878. There was at the time, however, a growing body of evidence that illnesses could be caused by the "specific poisons of the so-called zymotic diseases." These poisons consisted of "organized and living organic matter." Many scientists were "now certain that water is the medium through some, at least, of these diseases are propagated."

Thus the 1876 New Jersey Geological Survey report came out at time when the links between water supply and health were clear but the bacterial mechanisms behind the linkage were just beginning to be understood. What is fascinating about this report is how the Geological Survey scientists measured the disease-causing potential of a water supply without actually knowing exactly how diseases were transmitted.

In the summer of 1876 a committee consisting of the mayors of Newark, Jersey City, Hoboken, Bayonne, Orange, Bloomfield, and Montclair began collecting data on water usage and requested the aid of the State Geologist in identifying possible sources of supply. At the time, northern New Jersey had a population density of 1,118 persons per square mile. (For comparison, Newark today has a population density of 11,000 per square mile and Montclair has 6,056 persons per square mile.)

Twenty five years earlier, Jersey City selected a site on the Passaic near the present day city of Kearny for its municipal water intake. At the time, the Passaic was described as a "pleasant, limpid stream." But by 1874 it was recognized that potable water was no longer obtainable from the river anywhere below the city of Paterson. The water leaving that city was described as "dark as beer" and was said to contain the sewage of 50,000 persons, oil, coal tar, and the waste chemicals from dye works, textile mills, hat factories, and paper mills. Newark was also drawing its municipal water from an intake on the same stretch of the Passaic. City officials noted that recently dredged navigation channels allowed both salt

water and sewage from Newark to move farther upstream than they formerly did.

As part of the search for an alternative source of supply, chemists working for the state Geological Survey analyzed 23 water samples in July and August of 1876. The samples were drawn from wells in Newark, Jersey City, Elizabeth, Camden, New Brunswick; from the upper Passaic River, the Rockaway, Ramapo, Ringwood, and Pequannock rivers; and the Morris Canal at Bloomfield.

Eight analytical results were reported for each sample, solid matter (dried at 212°F and ash after burning), ammonia (free and albuminoid), chlorine, sulfuric acid, lime and magnesium. Each result was reported at "impurities in 1,000,000 parts of water" or ppm.

The growing population fostered a re-interpretation of the chemical analysis results. For most of the 1800s water analysis focused on the mineral content of the sample and the economic consequences. Lime and magnesium were measures of water hardness, sulfuric acid was thought non-hazardous to humans but harmful to boilers and manufacturing processes. In terms of public health, however, scientists now understood that, "both hard and soft water(s)" were "wholesome enough if they are otherwise pure."

The water quality chemists of 1876 were now more interested in the ammonia and chloride content. It was known that decaying animal and vegetable materials in water might undergo a "kind of putrefactive decomposition." During the process of decomposition a number of different products might result but all of the nitrogen would ultimately be converted to either ammonia or nitric acid. Albuminoid ammonia was defined as those nitrogen-containing substances that had not yet completely decomposed into free ammonia.

The authors of the report clearly understood that both free ammonia and nitric acid originated with nitrogenous organic matter. But it is not clear if they understood that it would remain as ammonia under anaerobic conditions and be converted to nitric acid under aerobic conditions. From fertilizer manufacturing and composting, they would have been very familiar with the conversion of ammonia to nitrates but could not entirely explain the mechanism without knowing about bacterial action. (The bacteria that convert ammonia to nitrate are strictly aerobic and cannot survive in low oxygen environments. This is why a poorly aerated compost pile smells strongly of ammonia.)

The authors of the report cite the authority of W.H. Corfield, when they recommended rejecting any water with more than 1 ppm of ammonia as a possible source for public consumption. Corfield was a professor at University College London, and one of the authors of the 1874 book, *A Manual of Public Health*.

Corfield and his fellow authors believed that the decomposing organic matter present in surface waters had its source in foul air. They explained that waters containing decomposing plant matter were not linked to intestinal illness. But because marshes were the source of such water, and marshes were also the source of yellow fever, this water should still be avoided. They wrote that waters contaminated with ammonia from animal matter contained poisons that could cause diarrhea, and in some cases, cholera, enteric fever or dysentery. Corfield correctly identified sewage as both a source of nitrogen and enteric diseases.

Thus in the absence of bacterial testing, chemists had found what seemed to be a reliable proxy measurement for sewage contamination. None of the New Jersey waters tested in 1876 had more than 0.133 ppm free ammonia and most contained less than 0.1 ppm. Albuminoid ammonia values ranged from a low of 0.112 ppm (Hackettstown) to 0.325 ppm (Jersey City). The USEPA does not currently regulate the levels of ammonia in drinking water but for comparison, surface waters in the United States today have an average concentration of about 0.18 ppm.

The chemists of the Geological Survey used a method published by the English chemist James Alfred Wanklyn of the London Institution. Wanklyn's method called for a half of liter of water to be distilled in a retort connected to a Liebig condenser. The free ammonia was distilled off and its quantity determined by reaction with Nessler's reagent (mercuric iodide-potassium iodide solution). To determine the amount of albuminoid ammonia, a strongly alkaline solution of potassium permanganate was added to the water remaining in the retort. This converted the organic nitrogen to ammonia and the solution was re-distilled. Wanklyn believed that the rate of this reaction could be used to determine the source of the nitrogen.

(continued on page 10)

WATER POLLUTION ANALYSIS IN NEW JERSEY

(continued from page 9)

If the reaction went quickly, the ammonia had an animal origin. Slower reactions indicated a vegetable origin.

The great weakness of the Wanklyn test was the assumption that the potassium permanganate reaction would always go to completion. Erratic results were often obtained under slightly different experimental conditions. The Geological Survey chemists attempted to validate their process by analyzing known amounts of urea. Recoveries were very low. They knew their results for organic nitrogen were going to be unreliable but no alternative method was available to them.

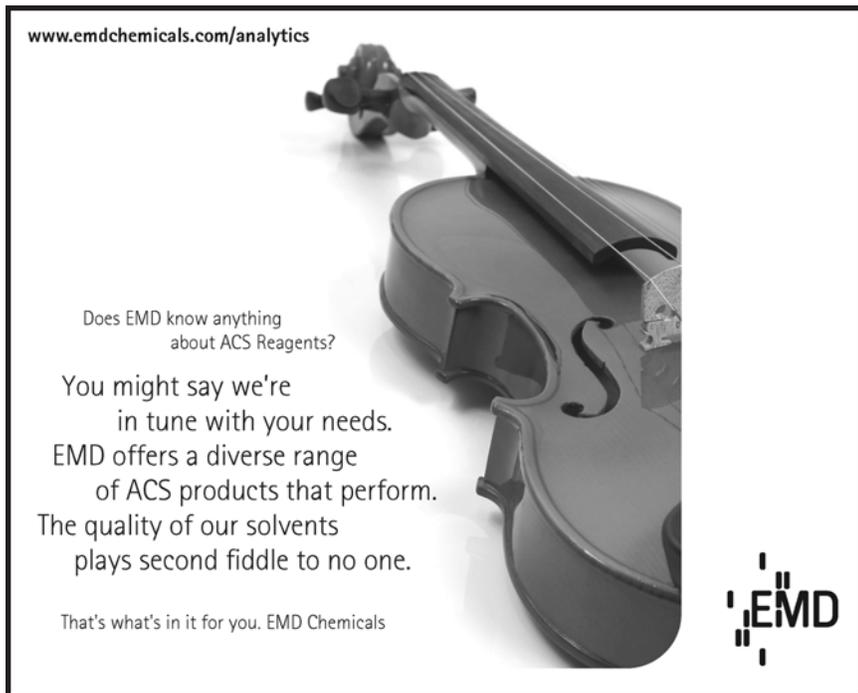
Chlorine (sic) was also recognized as a proxy marker for sewage contamination as well as what we might refer to today as "non point source" pollution. The Geological Survey report noted that while chlorine by itself was non-hazardous, it was often found in excrement and elevated levels could indicate sewage contamination. The authors of the report observed that very little chlorine was present in mountain streams, higher levels were found in cultivated areas, and the highest levels were found in rivers where towns and cities are located.

It is not entirely clear if the authors meant the chloride ion when they wrote about chlorine concentrations. They did discuss chlorine as a constituent of ordinary salt so it is likely that this is what they meant.

At that time the analysis of chloride by titration with silver nitrate was well established although journals from the period do not mention any sort of indicator being available to help identify the endpoint.

In part two of this article we will examine what conclusions about New Jersey's water resources were drawn from the chemical analysis.

END OF PART ONE



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Chemist of the Month — Franz von Soxhlet

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



Franz von Soxhlet was born on January 12, 1848, in Brünn (Brno), Mähren (Moravia, part of Bohemia at that time). After receiving a PhD in Chemistry at Leipzig University in 1872, he became an assistant at the Institute of Agriculture and Animal Chemistry in Leipzig. In 1873, he was appointed assistant at the Research Station of Agriculture Chemistry in Vienna. From 1879 to 1913, he was professor of animal physiology and dairy at the technical high school in Munich and was entrusted the leadership of the Landwirtschaftliche Versuchsstation für Bayern at this school. In 1894, he received a MD from the University of Halle.



He studied the physiological chemistry of milk in 1873 and butter formation in 1876. In 1879, he described a new device (Soxhlet Extractor) to extract fats from milk. This device improved the chemical study of lipids and is still used today. His studies on lipids led him to describe a simple device to measure directly milk fat contents in 1881. Also, he studied the chemical properties of assisted in the analysis of sugars (1880, 1892) and acidity (1897) in milk. In 1886, he described "pasteurization" of milk to prevent spoilage and transmission of diseases. His work on the sterilization of infant milk led him to describe a simple household device to sterilize (pasteurize) milk bottles (1891). He is considered in Germany as the "reformer of infant feeding" because of this invention. In 1893, he described the chemical differences between human and cow milk. He was the first to isolate the milk proteins, casein, albumin, globulin and lactoprotein and to describe lactose, the sugar present in milk. In 1900, he investigated the relationships between the milk content in calcium salts and the rachitis frequency.

He studied the connection between the iron content of human and cow milks and infant anemia in 1912.

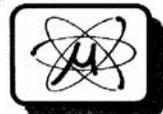
He died on May 5, 1926. .

References:

<http://www.cyberlipid.org/extract/soxhlet.htm>

<http://www.whonamedit.com/doctor.cfm/3041.html>

Jensen, E. B. *The Origin of the Soxhlet Extractor*, J. Chem. Ed. 1913, 84, 1913.



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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, March 30, 2009

Time: 6:00 PM

Place: Rutgers University
Wright-Rieman Labs, Room 231
Busch Campus, 610 Taylor Road
Piscataway, NJ 08854

Cost: \$5.00 - pizza dinner

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

Reservations: call (732) 463-7271 or email njacsoffice@aol.com prior to **Wednesday, March 25, 2009**.

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



CAREERS IN TRANSITION GROUP

Job Hunting??

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

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

The next meeting for the Careers In Transition Group will be held **Thursday, March 5, 2009**, 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 March 9, 2009

Time: 4:30 PM

Place: Chatham High School
255 Lafayette Avenue
Chatham, NJ

Contact: Paul Sekuler, (researchehs@hotmail.com) 732-542-2800



ChemTAG MEETING

TOPIC: TBA

Date: Thursday, March 19, 2009

Time: 4:00 – 6:00 PM

Place: Union High School
2350 North Third Street
Union, NJ 07083

Directions: <http://www.twpunionschools.org>. Click on "Directions" on left bar.

Contact: Gina Glorioso, (gglorioso@twpunionschools.org) 908-851-6500.

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THE NEW JERSEY GROUP OF SMALL CHEMICAL BUSINESSES

Continues its 2008 / 2009 Season
Surviving the Economic Downturn

Recent events in the global economy have presented significant challenges for the small business owner generally, and the small chemical business owner particularly. In light of this situation, the NJ Group of Small Chemical Businesses continues its 2008 / 2009 program season with meetings designed to address these challenges. We invite you to mark your calendars for the following meetings which will identify ways you can stabilize, secure and ultimately grow your business in these difficult economic times. Meeting abstracts and speakers will be finalized in the coming weeks and you will receive our regular meeting invitations detailing each presentation. Go to www.njgscb.org for details.

Lauterback Marketing

- Secure your business by learning how to “bullet-proof” it, and maintain your margins in this volatile economic environment.

Date: Thursday, March 19, 2009

Times: Networking Hour - Cash Bar
5:30 PM

Dinner and Introductions 6:30 PM
Presentation and Q & A 7:15 PM
Networking and Dessert 8:15 PM

Place: Holiday Inn, North (on the north side of Newark Airport)
160 Frontage Rd.
Newark, NJ

For map and directions, see
www.NJGSCB.org

***** Next Meeting *****

Fairleigh-Dickinson Institute for Sustainable Enterprise

- Grow your business by learning how to make it a “sustainable venture” thereby preparing it for, and aligning it with the challenges and opportunities in the evolving Green Business environment.

Date: Thursday, May 21, 2009

THE INDICATOR-MARCH 2009

POLYMER TOPICAL GROUP

**Polymers for Sensory and Energy-
Related Applications**

Organizer: Frieder Jäkle
Rutgers University - Newark

Speakers:

**“Separator Design for Lithium Ion
Batteries”**

Pat Brant
Exxon Mobil Chemical Company

**“Conjugated Polymer-Gold Nanoparticle
Assemblies in Sensory Applications”**

Uwe Bunz
Georgia Institute of Technology

**“Polymeric Material Strategies in
OLEDs”**

Kelly Chichak
GE Global Research

**“Conducting Polymer/Single Walled
Carbon Nanotube Composites for
Biosensor Applications”**

Huixin He
Rutgers University - Newark

**“Basic Research in Polymer Science for
Chemical and Biological Defense”**

Douglas Kiserow
Army Research Office, ARO

**“Selective Potentiometric Detection of
Macromolecules”**

Kalle Levon
Polytechnic Institute of NYU

This symposium will focus on functional polymers for applications as sensors, in optoelectronic devices including OLEDs, and in the emerging field of energy-related materials. Prominent researchers from academia, industry, and government labs will provide an overview of the state-of-the-art and discuss exciting new developments in these areas. The presentations will be accompanied by a poster session, and ample opportunities for networking with professionals involved in polymer chemistry will be provided. Updates will also be posted at the PTG website <http://www.njacs.org/ptg.html>.

Date: Thursday, May 14, 2009

Times: 1:00 to 6:30 PM

Place: Paul Robeson Campus Center
Bergen Room
Rutgers University
Newark, NJ

(continued on page 14)

POLYMER TOPICAL GROUP

(continued from page 13)

POSTER SESSION:

Poster submissions on any polymer-related topic are welcome!

CONTACT FOR POSTER SESSION:

Dr. Bin Wei, Henkel Corporation
(bwei01@gmail.com)

EXHIBITS & COMMERCIAL POSTERS:

Dr. Nicole Harris, Sun Chemical
(nicole.harris@sunchemical.com)

GENERAL INFORMATION: Prof. Jäkke,
Rutgers University (fjaekle@rutgers.edu).

Early Registration: Members: \$40; Non-members: \$50; Students: \$25; free for Rutgers students and staff with ID. **Early registration and poster submission deadline is April, 30, 2008.**

Regular Registration: Member, \$45; Non-member; \$55; Student, \$30. Online registration will start in late February

<http://www.njacs.org/ptg.html> OR 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, with the appropriate amount (please indicate whether you want your contact information shared with other participants).

Directions: Can be found at the Rutgers website <http://www.newark.rutgers.edu/maps/>.

Co-sponsors: ChemPharma, ACS North Jersey Local Section, Rutgers University.

Endorsing Organizations: NYSTAR sponsored College of Staten Island CUNY Center for Engineered Polymeric Materials, NJIT Medical Device Concept Laboratory.



ACS NORTH JERSEY SECTION TEACHER AFFILIATES — JOINT MEETING WITH THE NEW JERSEY INSTITUTE OF TECHNOLOGY

**24th Annual New Jersey Chemistry
Olympics - 2009**

Date: Wednesday, May 20, 2009

Place: Tiernan Hall
NJIT, Newark, NJ

Registration deadline: **March 1, 2009**

Additional information may be found at:
<http://geocities.com/njchemistryolympics/>



TEACHER AFFILIATES OF NORTH JERSEY SECTION

The newly elected officers for the Teacher Affiliates for the year 2009 are: Chair, Paul Sekuler from J.P. Stevens High School; Chair-Elect, Eve Krupka, retired; Treasurer, David Lee, retired. Two new Executive Board Members, serving from January 2009 – December 2010, are Claire Miller from Madison High School, and Susanne lobst from Passaic Valley Regional High School.



NORTH JERSEY SECTION — NATIONAL CHEMISTRY WEEK

Many thanks to all members who helped to make our Chem Expo 2008 at Liberty Science Center on October 25th a great success. We are also grateful for those who participated in "Cool Chemistry" as part of Liberty Science Center's "12 Days of Science" on December 28th. 2008 was a great year of exposure for the value and vivid picture of chemistry in our lives. We look forward to even more ventures in 2009.



"COOL CHEMISTRY" AT LIBERTY SCIENCE CENTER

On December 28, 2008, members of the North Jersey Section of the American Chemical Society and their Teacher Affiliates joined with Cub Scouts from Packs 31 (Port Reading), 53 (Fords), and 110 (Edison) and high school chemistry students from High Tech High School and County Tech (Hudson County) in setting up chemistry experiments for visitors to Liberty Science Center as part of their "12 Days of Science" celebration. Our "Cool Chemistry" program kept visitors busy with hands-on science and provided scientific explanations of the activities. As you can see from the pictures, everyone had a great time.

See pictures on the following page.

**"COOL
CHEMISTRY"**



New York Meetings

www.newyorkacs.org

ACS NEW YORK SECTION MEETINGS FOR 2009

The Board of Directors Meetings for the New York Section in 2009 are as follows:

Friday, March 13 Nichols Medal
Symposium and Dinner, Crowne Plaza,
White Plains, NY (See pages 18-20)

April 17

June 5

September 11

November 13

The regular Board Meetings will be held at St. John's University, 8000 Utopia Parkway, Jamaica, NY. These meetings are open meetings and all are welcome. If you are not a member of the Board of Directors and wish to attend please inform the New York Section Office at 516-883-7510 or njesper1@optonline.net.



CHEMICAL MARKETING & ECONOMICS GROUP

2009 Energy and Petrochemical Outlook

Speaker: Michael Kratochwill
Vice President
Finance and Strategy Practice,
Nexant / ChemSystems
White Plains, NY

Abstract

"The Outlook for the Petrochemical Industry in a Time of Wrenching Uncertainty"

The petrochemical industry and the global economy have undergone wrenching volatility and shifts in near term dynamics over the last few years. Until mid-2008 it appeared that the downturn in the housing industry and related problems with financial institutions would be largely confined to North America. As those problems intensified and worked through the interrelated global economy and financial structure, Europe and then Asia began having severe problems. It appears we are now in the aftermath of an unprecedented global credit binge and a similar and perhaps inter-related commodity price boom and bust.

Oh, for the good old days when it was only tulips, whale oil or petroleum! While volatile and rising feedstock prices were the primary broad challenge facing the chemical industry in 2007 and early 2008, even more funda-

mental concerns are now of utmost importance:

- What is the base level of global and regional demand in the postcredit binge era?
- What prices should one use for economic and project decisions when recent years have seen crude oil rise from the US\$20/barrel range of the 1990s to a peak of almost \$150 in 2008 just a scant 5 months before plunging to well below \$50?

In petrochemicals, the main concern of the industry had recently been to meet growing global demand without exposure to regions with uncompetitive feedstock prices. That concern has now withered under the duress of the dramatic global de-stocking of inventories and supply chains, both in petrochemicals and downstream. Combined with the present retail-level slowness of the housing, automotive and manufacturing sectors, there is no confidence on present, much less future, demand. Part of this is GDP related, but there is also a great fear that knowledge of the industry structure and supply-demand basics have become suddenly and completely in doubt.

To develop a realistic industry outlook requires addressing key issues such as the outlook for China and India, the anticipated stabilization and growth resumption in the large developed economies, and the role of governments and regulators in the global financial industry in the brave new world in which we find ourselves. Despite all these challenges, in this presentation we will endeavor to provide our own personal opinions and Nexant's latest thoughts on the most likely outlook for the petrochemical industry.

Biography

Mr. Kratochwill directs the Finance & Strategy Practice within Nexant's Energy & Chemicals business unit. This practice has responsibility for financially related work in the Americas and East Asia, and has advised on many of the significant transactions in those regions. With 40 years of industry experience, Mike is a recognized expert on the chemical and energy industries with respect to plant and business values, technologies and strategies. His areas of interest and Practice include fair market valuations and appraisals, chemical and refining economics and strategies, M&A due diligence, project feasibility, and techno-financial analysis. Mike is an experienced consultant and also has direct hands-on experience in banking and refining/chemical engineering and operations. In addition to analyzing the feasibility and eco-

nomics of over \$75 billion worth of projects and valuing over 125 plants/businesses, Mike has personally visited/inspected over 250 refineries, chemical plants and other energy facilities worldwide.

Before joining Chem Systems in 1991, Mike had been a Vice President in the Energy and Chemical Banking Group at Continental Bank (Illinois), and before that a Senior Analyst/Senior Process Engineer at Atlantic Richfield Company and ARCO Chemical Company. His additional work experience includes Cities Service Refining Company, Sun Oil Company and Great Canadian Oil Sands. Mike received his B.S. in Chemical Engineering (cum laude) from Drexel University and his MBA (magna cum laude) from Widener University. He is also an honor graduate of the US Army (Reserve) – Chemical/CBR School, Engineer School, and Command & General Staff College, and is a member of the American Institute of Chemical Engineers and the Society of Petroleum Engineers.

Date: Thursday, March 5, 2009

Times: Cocktails 11:30 AM
Luncheon 12 noon
Presentation 1:15 PM

Place: Club Quarters
40 West 45th Street
New York, NY

Cost: \$45 discount price for Members who reserve by Tuesday before the meeting (12 noon).
\$55 for Guests and Members (at the door without reservations)

To reserve: Please reserve early to be eligible for discount price. Call Vista Marketing at (917) 684-1659 or via e-mail to: cmegroup@mac.com. You can also pay online (via PayPal) go to our Website: <http://www.nyacs-cme.org/> and click the proper button.



LONG ISLAND SUBSECTION

Using Chemical Concepts in Microbiological Identification and Characterization

Speaker: Dr. Barbara D. Paul
US FDA Northeast Regional
Laboratory

The mere isolation of a microbial species from a patient or a food commodity, though important, often needs to be placed in the larger picture of an outbreak. In order to achieve this goal, microbiologists use the chemical principles of bond-making and breaking, polarization of molecules, their movement through matrices and their ability

to absorb and emit energy to analyze the relationships between related isolates. This lecture will provide an overview of polymerase chain reaction (PCR) and pulsed-field-gel electrophoresis (PFGE) as methods for detecting and characterizing microbes.

Date: Thursday, March 5, 2009

Times: Coffee 5:30 PM
Seminar 6:00 PM

Place: Hofstra University
Chemistry/Physics Building
Lister Auditorium

Dinner: 7:00 PM
Place: Neighboring restaurant
Cost: \$20.00



HIGH SCHOOL TEACHERS TOPICAL GROUP

Integrated Planning for Energy Security and Environmental Sustainability

Speaker: Dr. William Horak
Chair, Energy Sciences and
Technology Department
Building 475B
Brookhaven National Laboratory
Upton, NY

Date: Friday, March 13, 2009

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.



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



Symposium: Innovations in Chemistry Toward Advancing Biology

Award Recipient: Professor Carolyn R. Bertozzi (*See Biography on page 20*)
Howard Hughes Medical Institute and Departments of Chemistry
And Molecular and Cell Biology - University of California, Berkeley

Date: Friday, March 13, 2009

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

Place: Crowne Plaza Hotel, White Plains, NY

PROGRAM

- 1:30 PM Welcome Professor Barbara R. Hillery
2009 Chair, ACS, New York Section
State University of New York, Old Westbury
- 1:35 PM Opening of the Distinguished Symposium Mr. Frank R. Romano
2009 Chair-elect, ACS, New York Section
Agilent Technologies
- 1:45 PM Synthesis of Glycoconjugate Vaccine Adjuvants Professor David Y. Gin
Molecular Pharmacology and Chemistry
Memorial Sloan-Kettering Cancer Center
- 2:30 PM Fluorescent Reporters for Imaging Protein Trafficking and Interactions in Living Cells Professor Alice Ting
Department of Chemistry
Massachusetts Institute of Technology
- 3:15 PM Coffee Break
- 3:45 PM Testing the "Histone Code" Hypothesis Using Synthesis Professor Tom W. Muir
Selma and Lawrence Ruben Laboratory
of Synthetic Protein Chemistry
The Rockefeller University
- 4:30 PM Shedding Light on Glycans Professor Carolyn R. Bertozzi
NICHOLS MEDALIST
- 5:45 PM Social Hour
- 6:45 PM William H. Nichols Medal Award Dinner

More information regarding the Symposium is available on the New York Section's website at <http://www.newyorkacs.org>

Tickets may be reserved using the following form:

RESERVATION FORM

**2009 WILLIAM H. NICHOLS DISTINGUISHED SYMPOSIUM & MEDAL AWARD BANQUET
in honor of Professor Carolyn R. Bertozzi, University of California, Berkeley**

Return to: ACS, New York Section, c/o Dr. Neil D. Jespersen, Department of Chemistry,
St. John's University, 8000 Utopia Parkway, Jamaica, NY 11439
(516) 883-7510

Please reserve _____ places for symposium & banquet at \$90/person ACS member
_____ places for symposium & banquet at \$100/person Non-member
_____ places for banquet at \$80/person
_____ places for symposium at \$40/person, ACS member;
\$50 Non-member (Student or unemployed at \$20/person)

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tion tickets)

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Names of guests are: _____
_____ Indicate numbers in your group who choose:
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_____ Prime Rib _____
_____ Salmon _____

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important contacts."**

Rudy Behrens, CEO, Solaris Cybernetics, LLC

For more information contact:
Michel Bitritto, PhD Director, NJMC Business Accelerator
160 Chubb Avenue, suite 204 Lyndhurst, NJ 07071
(201) 438-1245
Michel.bitritto@njmeadowlands.gov
www.njmcaccelerator.com

PROFESSOR CAROLYN R. BERTOZZI — 2009 NICHOLS MEDALIST

The ACS New York Section congratulates and extends its best wishes to Professor Carolyn R. Bertozzi who will receive the **William H. Nichols Medal Award** on March 13, 2009 in White Plains, New York. The Nichols Medal is presented at an award dinner following the Nichols Distinguished Symposium. Professor Bertozzi's medal citation reads - "For new chemical methods for the study and control of biological processes."



Professor Carolyn Bertozzi is the T.Z. and Irmgard Chu Distinguished Professor of Chemistry and Professor of Molecular and Cell Biology at UC Berkeley, an Investigator of the Howard Hughes Medical Institute, and Director of the Molecular Foundry, a DOE Nanoscale Science and Research Center at the Lawrence Berkeley National Laboratory. She completed her undergraduate degree in Chemistry from Harvard University in 1988 and her Ph.D. in Chemistry from UC Berkeley in 1993. After completing postdoctoral work at UCSF in the field of cellular immunology, she joined the UC Berkeley faculty in 1996.

Professor Bertozzi's research interests span the disciplines of chemistry and biology with an emphasis on studies of cell surface glycosylation pertinent to disease states. Her lab focuses on profiling changes in cell surface glycosylation associated with cancer, inflammation and bacterial infection, and exploiting this information for development of diagnostic and therapeutic approaches. In addition, her group develops nanoscience-based technologies for probing cell function and for medical diagnostics.

Professor Bertozzi has been recognized with many honors and awards for both her research and teaching accomplishments. She is an elected member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the German Academy of Sciences Leopoldina. She has been awarded the Whistler Award, the Ernst Schering Prize, a MacArthur Foundation Fellowship, the ACS Award in Pure Chemistry, the Presidential Early Career Award in Science and Engineering, and the Irving Sigal Young Investigator Award of the Protein Society, among many others. Her efforts in undergraduate education have earned her the UC Berkeley Distinguished Teaching Award and the Donald Sterling Noyce Prize for Excellence in Undergraduate Teaching. Professor Bertozzi participates in high-school outreach programs such as the Catalyst Program sponsored by the Camille and Henry Dreyfus Foundation, as well as programs that promote the participation of women in science. She was recently given the Li Ka Shing Award for Women in Science in recognition of these efforts.

The William H. Nichols Medal was established in 1902 to honor a chemical scientist for outstanding original research. The Nichols Medal was awarded in 1903 for the first time and is a gold medal depicting the allegorical figure of Dr. Faust in his laboratory as described by Goethe, on one side, and, on the obverse side, bearing an inscription of the name of the medalist and the award citation. It is the first award of the American Chemical Society.



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

Therapeutic Inhibition of BACE1 for the Treatment of Alzheimer's Disease: Separating the Fantasy from the Reality

Organizers: David Riddell
Wyeth Discovery
Neuroscience

Ishrut Hussain
GlaxoSmithKline R&D

This symposium will review the current knowledge of the role of BACE1 in Alzheimer's disease pathogenesis and provide an update on the progress of drug development efforts.

Date: Tuesday, March 24, 2009

Time: 1:00 – 5:00 PM

Place: 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/events>

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.

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HUDSON-BERGEN CHEMICAL SOCIETY — JOINT MEETING WITH THE CHEMISTRY CLUB OF RAMAPO COLLEGE AND SIGMA XI, THE SCIENTIFIC RESEARCH SOCIETY

Global Warming Is Real, and What You Can Do About It

Speaker: Professor Alan Robock
Department of Environmental Sciences
Rutgers University
New Brunswick, NJ

Abstract

2005 was the warmest year on the planet in

more than 1000 years. The Earth has warmed by almost 1°C during the past 150 years, and by 0.6°C (1°F) in just the past 30 years. Was this just by chance or caused by human pollution of the atmosphere, especially by carbon dioxide? I will explain why the recent Intergovernmental Panel on Climate Change report said, "Most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations." I will explain the science behind global warming and describe how global warming will affect us, including sea level rise, stronger hurricanes, and threats to water resources and our food supply. Finally, I will discuss policy options for addressing the problem.

How the climate will change and the impacts of global warming can be addressed by science. What society chooses to do about this is a political decision, influenced by different values and interests. However, clear understanding of the science is a necessary input to these decisions, and in this talk I will clearly separate the science aspects from the policy aspects.

Biography

Alan Robock is a professor of climatology in the Department of Environmental Sciences at Rutgers University and the Associate Director of its Center for Environmental Prediction. Prof. Robock has been a researcher in the area of climate change for more than 30 years. He graduated from the University of Wisconsin, Madison, in 1970 with a B.A. in Meteorology, and from the Massachusetts Institute of Technology with an S.M. in 1974 and Ph.D. in 1977 in Meteorology. From 1977 until the end of 1997, he was on the faculty of the Department of Meteorology of the University of Maryland, where he was a Professor and the State Climatologist of Maryland (1991-1997). He moved to Rutgers University in January, 1998, where he is the Director of the Meteorology Undergraduate Program and a member of the Graduate Program in Atmospheric Science. He is a Fellow of the American Meteorological Society and President of the Atmospheric Sciences Section of the American Geophysical Union.

(continued on page 22)

HUDSON-BERGEN CHEMICAL SOCIETY

(continued from page 21)

Dr. Robock is a Professor II at Rutgers, equivalent to Distinguished Professor at other institutions. Prof. Robock's research involves many aspects of climate change, using analysis of observations and climate model simulations. He has published more than 250 articles on his research, including more than 145 peer-reviewed papers. He served as Editor of the Journal of Geophysical Research - Atmospheres, 2000-2005, and of the Journal of Climate and Applied Meteorology, 1985-1987. He was Associate Editor of Reviews of Geophysics, 1994-2000, and is once again serving since 2006. He served as a AAAS Congressional Science Fellow, 1986-1987, and spent subsequent sabbaticals at NOAA's Geophysical Fluid Dynamics Laboratory, and in Antarctica and at the Laboratoire de Météorologie Dynamique, Paris, France.

**Date: Thursday, April 23, 2009
(rescheduled from March 26)**

Times: Social 5:45PM
Seminar 6:00 PM

Place: Ramapo College of New Jersey
Room SC219 (Friends Hall)
Mahwah, NJ

Contact: Dr. Stephen Anderson, Ramapo College, standers@ramapo.edu



LONG ISLAND SUBSECTION

Twelfth Annual Frances S. Sterrett Environmental Chemistry Symposium

Reducing Our Ecological Footprint

The annual Frances S. Sterrett Symposium is dedicated to presenting the public with up-to-date, factual scientific information on environmental topics. Watch for updates at the New York section web site: www.newyorkacs.org.

SAVE THE DATE!

Date: May 21, 2009
Time: 8:30 AM – 2:00 PM
Place: Hofstra University

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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.

Call for Nominations

EDWARD J. MERRILL AWARD FOR OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER FOR 2010

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 2010.

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 George Gross, njmoxie1@verizon.net.

THE INDICATOR-MARCH 2009

Call for Papers

57TH 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 a Pace University graduate, Dr. Michael Alekshun, of Schering-Plough Corporation, speaking on "Contemporary Issues in Antibiotic Resistance: Problematic Bugs and the Therapeutic Strategies Used to Treat Them", presentation of student papers (15 minute talks to small groups), followed by a luncheon.

To:

1. Submit an abstract on-line
2. Print a flyer for posting - Print "Call For Papers" frame
3. Obtain directions to Pace University at Pleasantville. Go To: http://newyorkacs.org/grp_students.html

Date: Saturday, May 2, 2009

Place: Pace University
Pleasantville, NY

If you have any questions please contact:

Alison Hyslop, Co-chair
hyslopa@stjohns.edu

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

JaimeLee Iolani Rizzo, Co-chair
jrizzo@pace.edu

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Call for Posters

LABORATORY ROBOTICS INTEREST GROUP

Fifth Annual Student Poster Contest

The Mid Atlantic Chapter of the Laboratory Robotics Interest Group is pleased to announce that their fifth annual student poster contest will be held on Tuesday, May 19th, 2009 at the Hilton East Brunswick, 3 Tower Center Boulevard, East Brunswick, NJ.

Student Posters may be on ANY TOPIC in engineering, or the biological, chemical, earth, environmental, and physical sciences.

Content related to robotics or automation is NOT required for entry.

There will be two poster divisions this year, college and high school. Cash prizes will be awarded in both divisions as well as special members' choice awards. Participants in the high school division should plan to be at their posters between 4 and 5 pm to meet with the judges and participants in the college division should plan to be at their posters between 5 and 6 pm. An awards ceremony will follow the judging at 7:00 PM.

A career seminar is available for high school students before the meeting begins.

There is no charge to attend the meeting. There will be FREE FOOD and CASH PRIZES.

Reimbursements of travel expenses for entrants in the college division are available.

The contest is held in conjunction with the chapter's annual technology exposition. One of New Jersey's largest scientific meetings, this event is attended by more than 700 scientists and more than 90 laboratory technology companies.

Please pre register for the meeting at:

<http://lab-robotics.org/> (Click on the Mid Atlantic Chapter's link listed under "Upcoming LRIG Meetings.")

To enter a poster, simply send your name and the title of the poster to Kevin Olsen at the address below anytime **before May 7**.

Olsenk@Mail.Montclair.edu
(973-655-406)

Others

RUBBER DIVISION OF THE ACS

Reprinted from the North Brunswick-South Brunswick Sentinel (North Brunswick, N.J.: weekly circulation 17,000) issue of January 15, 2009

“Linwood student could turn rubber into paper”

Abigail Bonett used to put rubber bands on the handles of her father's filing cabinet, plucking the bands to create a musical-like sound. Little did she know that a few years later, her childhood game would lead to a semifinalist position in the **Rubber Band Contest for Young Inventors**. Bonett, an eighth-grade student at Linwood Middle School, created a harplike instrument out of different color and size rubber bands. She mounted the bands onto a wooden board and wrapped them around nails to create "The Rubber Band and Orchestra." Bonett is one of 370 students selected from across the country to participate in the Rubber Division of the American Chemical Society, the Akron Global Polymer Academy and the University of Akron event. The top three finalists should be announced next week. The finalists visited Akron, Ohio, for an awards ceremony on Feb. 14. The grand-prize winner will receive a \$10,000 savings bond, while the second- and third-place winners will receive a \$5,000 and \$2,500 savings bond, respectively.



ACS SPRING REGIONAL MEETINGS

The 2009 Regional Meetings are online and planning their programs. All three of the spring meetings will have programming pertaining to the environment, and GLRM and CERMACS have planned their meetings around an environmental theme. Plans are underway to open their abstract programs and advance registration in the immediate future.

The Great Lakes Regional Meeting (GLRM), <http://www.glr2009.org/> will take place in Lincolnshire, IL, just outside Chicago, May 13 – 16. Their theme is "A Better Environment through Chemistry." Symposia planned include plant biochemistry, material science/polymer chemistry, ethics in college education, non-crystalline x-ray structural chemistry and the environ-

ment, and molecular simulation in and for the environment.

The Central Regional Meeting (CERMACS), hosted by the Cleveland Section, which will be celebrating its 100th anniversary. Mark the dates, May 20 -23, and visit their website at <http://www.case.edu/cermacs/> for details. Their theme is "Meeting Energy and Environmental Challenges through Functional Materials." Four other societies will co-sponsor and submit programming to CERMACS. They are the Electrochemical Society, Society for Applied Spectroscopy, American Vacuum Society, and the Yeager Center for Electrochemical Science. Case Western Reserve University also is a contributor.

The Northwest Regional Meeting (NORM) will take place June 28 – July 1 at Pacific Lutheran University, Tacoma, WA. Visit their website at <http://www.chem.plu.edu/norm2009/> for information on their plans. Included in their program are sessions on bioanalytical mass spectrometry, chemistry of the bioregion; chemistry, energy, and sustainability; clinical chemistry, and instruments for the teaching laboratory.



FORMER ACS PRESIDENT BURSTEN PRAISES HOUSE SPEAKER'S SUPPORT FOR SCIENCE

Bruce Bursten, Ph.D., immediate past president of ACS, has praised U.S. House Speaker Nancy Pelosi for her promise that science will be of major importance in the upcoming Congress.

Leaders of major institutions representing government, academia, business and science were invited to attend the Innovation Roundtable hosted by House Speaker Nancy Pelosi at Princeton University last December.

In his remarks to the gathering, Dr. Bursten said "Science and engineering must be the engines of the innovation that assure our economic prosperity, our national security, our energy independence, and our responsible stewardship of our planet." Dr. Bursten is Dean of the College of Arts and Sciences at the University of Tennessee, Knoxville.

The purpose of the annual roundtable was to discuss how Congress could move ahead to renew the national commitment to the physical sciences and energy research.

TRY OUT AN ACS WEBCAST! IT'S EASY AND ECONOMICAL.

Few companies are immune from the economic hardships in the headlines and many budgets have been trimmed. But it is still crucial to your career to engage in continuing education to expand your skills and stay abreast of new topics. So save your time and money and take a look at the courses available online through ACS. ACS offers a wide variety of webcast short courses and our winter/spring schedule is open for registration now.

ACS Webcast Short Courses provide the same quality training that ACS has long been known for, but, because the courses are presented over the Internet, they offer added convenience and flexibility.

- **Economical:** Most ACS Webcasts cost less than \$100 an hour, which is far less than most technical training.
- **Easy:** Our technology is easy to use and works with all typical computer systems so virtually anyone can easily take a webcast from the comfort of their home, office, or lab.
- **Convenient:** Class attendance is NOT required. If you miss a class, simply use your on-demand access to the session recording so you can catch up on your own time.
- **Informative:** All class materials are available for download and you can email the instructor anytime.

There are expanded course offerings in analytical, organic, pharmacology, engineering, instrumentation, and other areas. For the full list of Webcast Short Courses and more information on available discounts, visit www.acs.org/webcourses.

MINI-GRANTS AVAILABLE FOR COLLABORATIVE ACTIVITIES

Proposals are being sought for Equipping the 2015 Chemical Technology Workforce mini-grants. Up to \$500 will be awarded to collaborative activities that support technician education and career development.

Equipping the 2015 Chemical Technology Workforce has three goals:

- 1) Raise awareness of the changing needs of chemical technicians, operators, analysts, and other applied chemical professionals.
- 2) Highlight opportunities for industry, academia, professional societies, and the community to collaborate on meeting those needs
- 3) Increase involvement of applied chemical professionals in the American Chemical Society

To qualify for a mini-grant, one or more sectors of the chemical enterprise (industry, academia, professional organizations, etc.) must collaborate on the activity. Activities must also support one or more of the goals of Equipping the 2015 Chemical Technology Workforce and take place in the 2009 calendar year.

The deadline for proposals is 20 February 2009.

To learn more about Equipping the 2015 Chemical Technology Workforce and the mini-grants, to get ideas for activities, or to gather information about the chemical technology profession in today's marketplace, please visit the Equipping the 2015 Chemical Technology Workforce website (go to www.acs.org and follow the path, Funding & Awards > Grants > Chemical Technology Partnership).

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ACS Continuing Education announces two new drug discovery conferences for Spring 2009 in Boston and NJ

Invest in yourself by staying current in drug development and design
Smaller conferences guarantee good networking opportunities

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April 26 – 29, 2009 in Boston, MA

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- Keynote by **Magid Abou-Gharbia** of Temple University, recently retired VP of Wyeth
- A full day program on structure-based drug design, with **Peter Mueller** of Vertex to keynote
- Sessions on blood brain barrier permeability and PK/PD successful transitions to the clinic
- **Scott Biller** of Novartis, **William Greenlee** of Schering Plough, and **Alan Palkowitz** of Eli Lilly on successful small molecule drugs their companies have developed

Accelerating Drug Discovery via Translational Research: PK/PD for Medicinal Chemists

May 4 – 6, 2009 in New Brunswick, NJ

Our PK/PD conference has been expanded for 2009 to include other translational approaches. The program features:

- Industry case studies on the value of translational PK/PD approaches in the discovery of better drug molecules
- Overviews on the application of each to drug development:
 - Translation research and biomarker development
 - Prediction of human PK and dose
 - PK/PD in discovery
 - Molecular imaging
- Sessions on neurosciences; metabolic & cardiovascular diseases, oncology & immunology, and antivirals

PLEASE GO TO ACSProSpectives.org for more information on both conferences and to REGISTER.

Questions? Please email acsprospectives@acs.org or call 1- (800) 227-5558 and ask for ACS ProSpectives

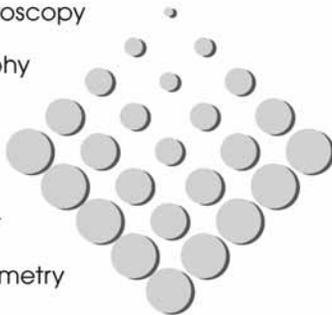
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