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# THE Indicator

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## February Calendar

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**Thursday, February 1, 2007**

Long Island Subsection  
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**Friday, February 9, 2007**

High School Teachers Topical Group  
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**Friday, March 16, 2007**

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### NORTH JERSEY SECTION

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**Monday, February 12, 2007**

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NMR Topical Group  
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**Monday, February 26, 2007**

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**Deadline for items to be included in the April 2007 issue of *The Indicator* is February 14, 2007.**



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### THIS MONTH IN CHEMICAL HISTORY

Harold Goldwhite, California State University, Los Angeles

hgoldwh@calstatela.edu

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

The name of Jean Baptiste Perrin may not resonate strongly with most chemists, which is a pity. Perrin made contributions to science late in the 19th century and in the early decades of the 20th that were essential to understanding the fine structure of matter. The ideas that flowed from Perrin's contributions are discussed in every general chemistry course. The following biographical sketch is drawn in part from material on the Nobel Foundation's website; Perrin won the Nobel Prize in physics in 1926.

Jean Perrin was born in Lille, France, in September 1870. He studied at the Ecole Normale Supérieure in that city, was appointed to an assistantship in physics, and began studying the novel and exciting fields of cathode and X-rays. He earned his doctorate in 1897 and received a post in physical chemistry at the Sorbonne in Paris in the same year. Most of his professional career was spent at the Sorbonne where he was appointed Professor in 1910. He held that post for the next 30 years.

In 1895 in a paper in Comptes Rendus, based on the research he later presented for his doctorate, Perrin provided evidence supporting the idea that cathode rays were particulate rather than wave-like. This was a topic of intense interest and debate at this time. Evidence for wave-like behavior had included observations that cathode rays, like X-rays, could penetrate thin sheets of aluminum. In an elegant set of experiments Perrin collected the cathode rays in a hollow cylinder and showed that negative charge steadily accumulated on the collector. The cathode rays were also retarded by negative electric charge. In 1897 J.J. Thomson, building on these experiments of Perrin, carried out his definitive studies of cathode rays which indicated the existence of electrons in atoms.

Chemists unfamiliar with the history of their subject are usually unaware of the intense debated within the scientific community about the reality of the existence of atoms at the end of the 19th and the beginning of the 20th century. Among the most skeptical of the necessity of physical atoms was the father of physical chemistry, Wilhelm Ostwald. Perrin's work on Brownian Motion finally convinced the sceptics. Observations on colloidal suspensions, in which the colloid particles moved constantly and in apparently random directions, were interpreted by Perrin in 1909 as due to the uneven bombardment of the particles by the molecules of the liquid medium in which they were suspended. Perrin developed the theory of this motion. By observations on the rates of movement of the particles and their distribution by depth at equilibrium he was able to deduce values of Avogadro's Number that agreed with those derived from totally different lines of experiment. In effect Perrin had "observed" the discontinuous nature of matter, and this was the subject of the citation for his Nobel Prize.

Perrin wrote many articles and several influential books. The most widely read was his book on "Atoms", first published in 1913 and translated into several languages, which sold over 30,000 copies. He was awarded many honors in addition to his Nobel Prize; honorary memberships in half-a-dozen national societies; honorary doctorates from 8 universities; major scientific prizes in England, Italy, and France. He was also influential in scientific politics, creating the organization that is still at the center of French science, the Centre National de la Recherche Scientifique (CNRS); and helping to found a major science museum in Paris, the Institute of Astrophysics, and the Institute of Physico-Chemical Biology.

Perrin served his country as an officer in the Corps of Engineers in World War I and when France fell in World War II in 1940 he escaped to the United States and died in New York in April 1942. His body was repatriated to France on the battleship Jeanne d'Arc in 1948 and was reburied in the Pantheon in Paris which is dedicated to the memory of the most outstanding citizens of France.

*(continued on page 6)*

## THIS MONTH IN CHEMICAL HISTORY

(continued from page 5)

Previously, I discussed the career of Jean Perrin, Nobel Laureate in physics in 1926. Perrin's major contributions, which had a considerable impact on chemistry, were his demonstration that cathode rays were particulate, a precursor to J.J. Thomson's discovery of the electron; and his studies of Brownian motion which led not only to a value of Avogadro's number but also to an acceptance of the existence of physical atoms.

Perrin's best-known book "Les Atomes" went through many editions and was translated into several languages. My copy of the second English edition revised was translated by D. L. Hammick of Oriol College Oxford and was published by Constable and Company in London in 1923. It is entitled, simply, "Atoms". I mean to compliment the author when I say that the text is argued in a particularly logical and — dare I add — French manner in the spirit of Descartes, Pascal, and Poincare. A quotation from the Preface will give the flavor: "To divine ... the existence and properties of objects that still lie outside our ken, to explain the complications of the visible in terms of invisible simplicity, [italics are in the original] is the function of the intuitive intelligence which, thanks to men such as Dalton and Boltzmann, has given us the doctrine of atoms." "Induction and intuition have both up to the present made use of two ideas that were familiar to the Greek philosophers; these are the concepts of fullness (or continuity) and of emptiness (or discontinuity)."

Through discussions of such familiar observations as the thickness of gold leaf and his own observations on the uniform fluorescence of very dilute solutions of fluorescein Perrin is able to conclude that the mass of a hydrogen atom must be less than 10-21g. This estimate can be refined by studies of very thin ("black") soap films and thin oil layers on water to give an order of magnitude of the mass of one hydrogen atom as about one-thousandth of this.

Perrin's discussion of internal energies of molecules and specific heats is both lucid and up-to-date (recalling that this is a 1923 text.) He integrates quantum theory (first enunciated by Planck to little acclaim in 1900, but given a substantial impetus by Einstein's work on the photoelectric effect in 1905) with its applications by Einstein and Nernst to both vibrational energies of molecules and the quantization of rotational energy.

Not surprisingly, the discussion of the Brownian Movement in this book is magisterial. After tracing the history from the time of the British botanist Robert Brown in 1827 who had the advantage of working with some of the first achromatic microscope objectives Perrin summarizes the work of other contributors to the area including Wiener, Gouy, and Ramsay. He then outlines the ideas which led him to his theory of the Brownian Motion. His own elegant experiments are then detailed, including the equipment needed to obtain photographs of the distribution of particles as a function of depth in a colloidal suspension. These results then lead to a value of Avogadro's number very close to the currently accepted value.

Current events (2006) may be reflected in a couple of remarkable statements in "Atoms". In a discussion of isotopes early in the book Perrin suggests (following Soddy and Fajans) that although ordinary chemical methods of isotope separation will fail completely the forces of inertia should make the separation possible. "A sufficiently energetic centrifugal fractionation should be capable of bringing it about." I am not sure if this prediction was tested during the Manhattan Project. Perrin used centrifuges rotating at around 2500 r.p.m. to produce a centrifugal force of around 1000g to separate dye particles for his work on the Brownian motion. "I need scarcely point out that, as in all other kinds of fractionating work, a good separation is a lengthy process. In the most careful of my fractionations I treated 1 kg of gamboge [a dye] and obtained after several months a fraction containing a few decigrammes of grains having diameters approximately equal to the diameter I wished to obtain."

Perrin concludes his discussion of the atom with the observation that many widely divergent phenomena, apparently unconnected, can in fact be linked by atomic and quantum theories of the early 1920's. I can close with nothing better than the following remarkable quotation: "... the equations for black [body] radiation and the Brownian motion ... enable us to predict the rate of diffusion of spherules 1 micron in diameter in water at ordinary temperatures if the intensity of the yellow light in the radiation issuing from the mouth of a furnace containing molten iron has been measured!"

## New York Meetings

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

### CHEMICAL MARKETING & ECONOMICS GROUP

#### Licensing and Patenting Issues in the Pharmaceutical Industry

Speaker: Arnold I. Rady  
Partner, Morgan & Finnegan, LLP  
New York, NY

Date: Thursday, February 1, 2007

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

Place: The Chemists' Club  
40 West 45th Street  
New York City

Fees: \$40 discount price for Members who reserve by the Tuesday before the meeting (12 noon). \$55 for Guests and Members (at the door without reservations).

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### LONG ISLAND SUBSECTION

#### Morphological Studies of Conducting Polymer Nanomaterials

Speaker: Dr. David Sarno  
Assistant Professor  
Department of Chemistry  
Queensborough Community College

Conducting polymers are a unique class of materials that combine certain characteristics of conventional plastics (e.g. flexibility and processability) with those of metals (e.g. electrical conductivity). Polyaniline is the most widely studied conducting polymer because of its ease of synthesis, environmental stability, and reversible electrical conductivity. For decades, its chemical synthesis was found to yield only amorphous materials. Recently, however, new methods have demonstrated the ability to reproducibly manipulate the nanoscale structure of polyaniline. This has revealed new or enhanced properties and hence new applications, especially for sensors and electronic devices. Following a general introduction to conducting polymers and their preparation as nanomaterials (fibers, tubes, spheres), our studies on polyaniline nanofibers and the factors that influence their morphology will be discussed.

Date: Thursday, February 1, 2007

Times: Coffee 5:30 PM  
Seminar 6:00 PM  
Dinner 7:00 PM

Place: Hofstra University  
Chemistry Building  
Lister Lecture Hall  
Hempstead NY

Cost: Dinner \$20.00

For information contact Professor Eugene Brown 516-572-7579

## POLYMER PROBLEMS?

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**Speaker:** Dr. Monica Plisch  
Senior Research Associate  
Center for Nanoscale Systems  
Cornell University  
Ithaca, NY

According to Einstein's theory, light is composed of particles called photons and the color of light determines the wavelength and energy of the photons. Students investigate these relationships by shining colored light from super-bright LEDs onto phosphorescent and fluorescent materials. They determine which LEDs activate glow-in-the-dark tape, measure their wavelengths and calculate the photon energies. Students are then asked to apply their knowledge of photons to explain the behavior of fluorescent paints.

**Date:** Friday, February 9, 2007  
**Time:** 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.)

**Time:** Meeting 7:15 PM  
**Place:** New York University  
Silver Center Room 207  
32 Waverly Place (south-east corner Washington Sq. East)  
New York, NY

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

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

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

**Active Resolution of Inflammation: A Promising and Innovative Therapeutic Approach**

**Organizers:** Charlie Serhan  
Harvard Medical School  
Boston  
  
George B. Zavoico  
Cantor Fitzgerald  
New York

Inflammation is part of our body's response to injury. In a well-coordinated response, coagulation limits blood loss, inflammatory cells are recruited to debride the wound, migration and proliferation of various cell types leads to tissue regeneration, and, finally, remodeling builds tensile strength and ensures integrity of the regenerated tissue. In chronic inflammation, the process stalls at the second step.

Understanding mechanisms that stimulate the resolution of inflammation may underpin the development of drugs that attenuate chronic inflammation and accelerate healing in directed and controlled ways.

**Charlie Serhan**  
Harvard Medical School  
Boston, MA  
**Resolvins and Protectins: Novel Lipid Mediators in Resolution**

**Derek Gilroy**  
University College London  
London, UK

**Aspirin-inhibited COX-2 Generates Resolvins that Promote the Resolution of Inflammation**

**John Parkinson**  
Berlex Laboratories  
Richmond, CA  
**Title to be announced**

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**Chris Karp**  
University of Cincinnati College of Medicine  
Cincinnati, OH  
**Lipoxin-Mediated Anti-Inflammatory Pathways in Cystic Fibrosis**

**Julio Aliberti** (invited)  
Cincinnati Children's Hospital Medical Center  
Cincinnati, OH

**Date:** Tuesday, February 27, 2007  
**Time:** 1:00 – 5:00 PM  
**Place:** The New York Academy of Sciences  
7 World Trade Center – 40th Floor  
250 Greenwich Street  
New York, NY 10007

**Directions:** <http://www.nyas.org/about/directions.asp>

To reserve a seat, go to the NYAS calendar at [www.nyas.org/bpdg](http://www.nyas.org/bpdg) and fill out the online reservation form, e-mail [BPDG@nyas.org](mailto:BPDG@nyas.org), or call (212) 298.8616.

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William P. Schweitzer Professor of Chemistry, Columbia University

**Date:** Friday, March 16, 2007  
**Times:** 1:00 PM Registration 1:30 PM – 5:30 PM Symposium  
5:45 PM Reception 6:45 PM Award Dinner  
**Place:** Crowne Plaza Hotel, White Plains, NY

**PROGRAM**

1:30 PM	Welcome	Mrs. Joan A. Laredo-Liddell 2007 Chair, ACS, New York Section Marymount College of Fordham University
1:35 PM	Opening of the Distinguished Symposium	Professor Marc A. Walters 2007 Chair-elect, ACS, New York Section New York University
1:45 PM	DNA Charge Transport Chemistry and Biology	Professor Jacqueline K. Barton Arthur and Marian Hanisch Memorial Professor of Chemistry, California Institute of Technology
2:30 PM	Terrestrial and Extraterrestrial Chirality	Professor Ronald E. Breslow S. L. Mitchill Professor of Chemistry Columbia University
3:15 PM	Coffee Break	
3:45 PM	Protein Folding, Misfolding, and Disease	Professor Harry B. Gray Arnold O. Beckman Professor of Chemistry California Institute of Technology
4:30 PM	Photons, Spins and Special Pairs: An Integration of Photochemistry, Magnetic Resonance and Supramolecular Chemistry	Professor Nicholas J. Turro 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:

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**HUDSON-BERGEN CHEMICAL  
SOCIETY**

On December 1, 2006, Dr. Ariel Fenster from McGill University OSS (Office of Science and Society), delivered a talk for the Hudson-Bergen Chemical Society at Ramapo College entitled "Miracle Materials: The World of Plastics."

A photograph taken at that meeting is shown below.



From left to right, Dr. Mihaela Leonida (FDU, Chair HBCS), Dr. Steven Anderson (RCNJ, Past-Chair HBCS and President Sigma Xi Chapter Ramapo College), Dr. Ariel Fenster, Speaker (McGill University, OSS), Dr. Michael Fenster (Bristol-Meyers-Squibb), and Ann Marie Fenster.

(Photo courtesy of Dr. Grace B. Borowitz)

**LONG ISLAND SUBSECTION**

**Eleventh Annual Frances S. Sterrett  
Environmental Chemistry Symposium**  
Mark your calendar and save the date!

The annual Frances S. Sterrett Symposium is dedicated to presenting the public with up-to-date, factual scientific information on environmental topics. Email questions to Dr. Barbara Hillery at [hilleryb@oldwestbury.edu](mailto:hilleryb@oldwestbury.edu).

**Date:** Thursday, May 24, 2007  
**Place:** Hofstra University



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## North Jersey Meetings

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### NORTH JERSEY EXECUTIVE COMMITTEE MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Executive Committee Meeting to discuss topics of importance to running the section and representing the membership. All ACS members are welcome to attend this meeting and to become more involved in section activities.

**Date:** Monday, February 26, 2007

**Time:** 5:30 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](http://view.fdu.edu/default.aspx?id=238)

**Reservations:** call 732-463-7271 or email [njacsoffice@aol.com](mailto:njacsoffice@aol.com) prior to Wednesday, February 21, 2007.

**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.**



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Dr. Kenneth R. Henery-Logan  
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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, February 1, 2007**, 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](mailto:vjkuck@yahoo.com), if you plan on attending this meeting.



## TEACHER AFFILIATES

### Executive Committee Meeting

**Date:** Monday, February 12, 2007

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

**Contact:** Diane Krone at 201-385-4810 or [kroned@optonline.net](mailto:kroned@optonline.net)

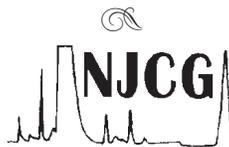
## ChemTAG MEETING

**Date:** Tuesday, February 13, 2007

**Time:** 4:00-6:00 PM

**Place:** East Brunswick High School  
380 Cranbury Road  
East Brunswick, NJ

**Contact:** Karen Posluszny at [KPOSLUSZNY@ebnet.org](mailto:KPOSLUSZNY@ebnet.org)



## NORTH JERSEY CHROMATOGRAPHY GROUP

*Seminar is sponsored by Thermo Electron*

**Fast and Efficient Separations Using Sub-2  $\mu$ m Particles and Ultra-high Pressures in Liquid Chromatography**

**Speaker:** Dr. Naijun Wu  
Research Fellow  
Merck & Co., Inc.

**High Speed Chromatographic Separations using the new Thermo Accela LC System**

**Speaker:** Diab Elmashni, M.B.A.  
Thermo Electron

**Date:** Tuesday, February 13, 2007

**Times:** Social 5:30 PM

Dinner 6:30 PM

Seminar 7:30 PM

**Place:** Somerset Marriott Hotel  
110 Davidson Avenue  
Somerset, NJ

**Cost:** \$10 for Dinner (free of charge for Students) Open seating for those not attending the dinner

**Reservations:** Please reserve by **Friday, February 9, 2007**. Pre-registration is required.

To register online, go to [www.njacs.org](http://www.njacs.org), click on chromatography. Or phone: David Kohler, ES Industries, 856-753-8400.

THE INDICATOR-FEBRUARY 2007

## NMR TOPICAL GROUP

**Titles to be Announced on**  
<http://njacs.org/nmr.html>

Presentations from Varian, Inc.

**Date:** Wednesday February 21, 2007

**Times:** Dinner 6:30 PM

Seminar 7:00 PM

**Place:** Woodbridge Hilton

**Directions:** [http://njacs.org/d\\_woodhilt.html](http://njacs.org/d_woodhilt.html)

**Cost:** Free, sponsored by Varian, Inc.

Advanced registration preferred (50 maximum): <http://njacs.org/nmr.html>, or via E-mail to [WENQING.FENG@SPCORP.COM](mailto:WENQING.FENG@SPCORP.COM)



## MORE NORTH JERSEY ELECTION RESULTS

**Alternate Councilors, 2007-2009**

Ray Baylouny	259
Jiwen Chen	248
Allene Johnson	240
Amber Charlebois	178
Cecelia Marzabadi	175



## NORTH JERSEY CHROMATOGRAPHY GROUP



Dr. Richard Henry at NJCG November 2006 meeting.

## ORGANIC TOPICAL GROUP

### Discovery, Selection & Development of Drug Candidates: A Senior Leadership Perspective

Date: November 17, 2006  
Place: Somerset Marriott Hotel  
Somerset, NJ.

The speakers for this amazing and unique symposium were:

*Dr. Carl P. Decicco*  
Bristol-Myers Squibb Co.  
"Innovation in Drug Discovery"

*Dr. Malcolm MacCoss*  
Merck & Co. Inc.  
"Emend® (Aprepitant): a Potent, Orally Active Substance P Antagonist for the treatment of Chemotherapy Induced Nausea and Vomiting (CINV). From the Medicinal Chemistry Bench to the Clinic"

*Dr. Paul L. Feldman*  
GlaxoSmithKline Inc.  
"PPAR Pan Agonists – The Next Generation PPAR Ligands"

*Dr. Bruce D. Roth*  
Pfizer  
"The Discovery and Development of Lipitor"

The Keynote Speaker was  
*Dr. P. Roy Vagelos*  
Retired Chairman and CEO  
Merck & Co. Inc.  
"The Changing Pharmaceutical Industry"

The meeting was introduced and organized by Dr. Michael M. Miller the current NJACS Organic Topical Group Chair from Bristol-Myers Squibb.

**Dr. Carl P. Decicco** was the first speaker and he began his talk by discussing some data on creativity. A young child begins with very creative minds but as they grow up to adulthood this creativity is "educated" out of them by the need to conform to standard ways of thinking and learning. His premise was that creativity is what is needed by scientists in the drug discovery process and some scientists still have this knowledge. His talk included three drugs that Bristol-Myers Squibb has advanced recently within their pipeline. "Apixaban" is a new drug for deep vein thrombosis. The clinical data will be presented at the upcoming ASH meeting to be held in Orlando, FL in December so he

was not at liberty to disclose that data at this meeting. It is a drug that prevents clot formation without unnecessary bleeding. Computer assisted drug design was used to find an inhibitor of the active site and the compound was furnished and tested. But this was not the only method used to find active compounds by the scientists at BMS, they used their creativity and empirical thinking to design and test other candidates.

Hepatitis B is caused by a virus which attacks the liver which can eventually cause cancer (another one of the cancers caused by a virus). The scientist put in five years of work to find a key compound by testing numerous analogues that were discovered during their medicinal chemistry program. Some of these compounds had been made by a multistep synthesis which involves much time and energy. They did a bio study of the lead compounds in woodchucks over three years to assure the efficacy of the compound. This study was needed to encourage the company that it was safe to move forward into the clinic.

The last drug he spoke about was Dasatinib which is a second generation drug for Chronic Myeloid Leukemia (CML). This drug was featured in a Business Week article on smart drugs. CML represents 20% of the adult leukemia's and can be controlled by targeting the Philadelphia Chromosome. Gleevec was the first breakthrough drug for CML but it has some severe side effects so BMS decided to continue and advance a program to prepare a therapeutic alternative for in this area of unmet medical need. Dasatinib was the result and is active in all phases of CML. This drug was made possible through creative thinking.

**Dr. Malcolm MacCoss** detailed the history of the discovery of EMEND which is a Substance P antagonist for the treatment of chemotherapy induced nausea and vomiting. This involved a long term research project until the final compound was found. During this research project one of the biochemists on the projects was diagnosed with breast cancer. She had so much trouble during her first session of chemotherapy that she was not going to undergo it again. She asked to be able to use EMEND during the early clinical phase of the drug under "compassionate use." This drug enabled her to undergo her last chemotherapy without a problem. This story was used to exemplify that at Merck "patients come first!"

**Dr. Paul Feldman** spoke about PPAR Pan Agonists. This class of compounds are involved in metabolic syndrome which involves obesity, hypertension, cardiovascular disease and diabetes. About 25% of the public has metabolic syndrome. Obesity is a growing problem as even teenagers are becoming obese at an early age. Currently the FDA does not recognize it as a disease. The scientist identified the PPAR ligand and then tested 5,000 molecules to find the one which would interact with the receptor. The GSK chemists enhanced the target molecule through medicinal chemistry techniques. It was remarked that efforts like this one needs to be done because patients are waiting for new compounds to counteract obesity and other areas of metabolic syndrome.

**Dr. Bruce Roth** is the single patent holder for Lipitor. He entertained the audience with the story of the discovery and development of Lipitor by the research and development teams at Pfizer. The discovery of Lipitor is an amazing story of innovation and perseverance, as well as risk on the part of the pharmaceutical industry to advance a compound in a medical landscape congested with a large amount of competition.

After dinner **Dr. P. Roy Vagelos** gave the keynote address. He was introduced by Dr. Malcolm MacCoss, VP of Basic Chemistry and Drug Discovery Sciences of Merck, Rahway, NJ.

Dr. Vagelos gave an overview of his time at Merck and the Pharmaceutical Industry in general. Dr. Vagelos was a researcher who brought his interest in research to Merck. He said that he had fun at Merck because of the "drug discovery process." When he was CEO of the company, the organization was at its heyday and the industry was held in high respect. In 2004 there was a Harris Poll about the Pharmaceutical Industry. People had lost confidence in the industry because of the high prices and because they did not respond to the needs of people in the developing countries.

The problem of pricing has to do with the long time that the discovery and development process takes. For example the precursors to the drug Mevacore was discovered in 1978 but was not launched until 1987. The second generation drug Zocor took 5.5 years from discovery to launch. This is one of the reasons for the high prices of drugs, it accounts for the enormous cost

poured into R&D each year to address unmet medical needs of the public's interest.

With respect for improving the health of people in the third world, Dr. Vagelos was responsible for the donation of Metizin for the prevention of River blindness to the developing countries. When scientist William Campbell discovered a compound that was active to prevent the disease, it was decided that it should be donated to the people who would need it. A new drug application was filed in France and approved in two months. After determining that the US government would not help with this donation, Merck decided to do it alone.

He then talked about the three drug cocktail for AIDS. It costs about \$25,000 a year for the treatment of people with AIDS which transform the disease from a lethal disease to a chronic disease. It was known that this disease was endemic in Africa but the industry decided not to donate it to the people who need it. An Indian company began making the drugs at a lower cost and selling it to the people who need it. It was then the Pharmaceutical Industry changed their minds about the donation and the price, but as Dr. Vagelos said it was too late. They had already lost their credibility with the public. He suggested that each company should pick one country or area of the world to contribute to the welfare of the people through donation of such life saving drugs.

He spoke briefly about VIOX by saying all drugs (including aspirin) have side effects. They are tested in limited populations for a limited time. When a side effect is discovered during use within a patient pool, the company should tell the FDA and then change the label describing the side effect, but not take it off the market.

He said that big pharma is no longer a growth industry because many drugs are going off patent. The new growth will come from small companies which start with zero sales. These companies are started by professors who recruit their best students to work for them. Many of these companies fail but the chemists are able to go from company to company for new employment.

He said currently, big pharma can be considered mature companies. They are:

- Outsourcing the discovery process

(continued on page 16)

## ORGANIC TOPICAL GROUP

(continued from page 15)

- The development process is done in-house
- Early in the clinical research process they are genotyping people to discover the eventual side effects.
- Outsourcing manufacturing
- Sales and marketing should be changed. Sales representatives waste a lot of time trying to see doctors. Three academic medical schools have banned sales reps.

Companies need to find new ways to get the information to doctors.

- Direct advertising to the consumer puts a great demand for the drugs to the doctors. He feels they should limit the direct advertising until there has been a lot of human exposure to the new drugs.

He summed it up by saying that the pharmaceutical industry affects the lives of all people in a positive way. It is through the efforts of the thousands of scientists that tirelessly work to find cures of disease that life saving new drugs are found and dispersed to society.

## SCENES FROM THE CECIL BROWN LECTURE



Dr. Robin Hochstrasser,  
2006 Cecil Brown Lecturer.



Jiwen Chen, NJACS Awards Chair, David Talaga, Rutgers Univ. Professor, Robin Hochstrasser, Cecil Brown Lecturer and Bill Suits NJACS Meetings Chair.

## SCENES FROM METRO WOMEN CHEMISTS — JOINT MEETING WITH CSE STUDENT AFFILIATES ON DECEMBER 4, 2006



Pictured, left to right, are Professor Elena Colicellis (College of St. Elizabeth), Sr. Marian José Smith (CSE), Maureen Chan, Gloria Anderle (Fairleigh Dickinson University), Amber Charlebois (FDU), Michelle Silva (president of the CSE Student Affiliates), Anita Brandolini (FDU), Amanda Bien (GSK) and Jackie Erickson (GSK).



(Left) Valerie Kuck at the podium.

(Below) The rapt audience.



## Call For Papers

### 55TH 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. Spiro Alexandratos, Professor of Chemistry at Hunter College CUNY, 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 Manhattan College. Go To: [http://newyorkacs.org/grp\\_students.html](http://newyorkacs.org/grp_students.html)

Date: Saturday, May 5, 2007  
Place: Manhattan College  
Riverdale

If you have any questions please contact:  
Alison Hyslop, Co-chair  
[hyslopa@stjohns.edu](mailto:hyslopa@stjohns.edu)  
Sharon Lall-Ramnarine, Co-chair  
[slallramnarine@qcc.cuny.edu](mailto:slallramnarine@qcc.cuny.edu)  
JamieLee Rizzo  
JaimeLee l'olani Rizzo, Co-chair  
[jrizzo@pace.edu](mailto:jrizzo@pace.edu)

## Call For Nominations

### 2007 LIFETIME ACHIEVEMENT AWARD OF THE NORTH JERSEY SECTION

The biennial award, funded by Novartis, consists of \$1,000 prize and a plaque. It recognizes a North Jersey chemist or chemical engineer over fifty years of age, for conspicuous achievements in chemistry, not heretofore recognized by any major scientific awards.

Please submit nominations and supporting letters to Jiwen Chen, Awards Committee Chair, c/o NJ ACS, 4 Cameron Road, Piscataway, NJ 08854. Tel: 609-818-6319, email: [jiwen.chen@yahoo.com](mailto:jiwen.chen@yahoo.com). (Electronic submission of the nomination package welcomed) Nominations must be received by **Feb 15, 2007**. Visit <http://www.njacs.org/awards.html> for more information and a list of past recipients.

### GOLD MEDAL AWARD — SOCIETY FOR APPLIED SPECTROSCOPY, NEW YORK SECTION

Nominations are being sought for the 2007 Gold Medal Award of the New York Section of the Society for Applied Spectroscopy. This coveted award was established in 1952 to recognize outstanding contributions to the field of Applied Spectroscopy. The Gold Medal will be presented at a special award symposium, arranged in honor of the awardee, at the 2007 Eastern Analytical Symposium. A nominating letter describing

the nominee's specific accomplishments should be submitted along with a biographical sketch by March 15th, 2007. Please send all materials to Richard Castino, Analytical and Characterization Group, c/o Sun Chemical Corp., 631 Central Avenue, Carlstadt, New Jersey 07072.

If you have any questions or require more information, you may contact me at 201-933-4500, ext. 1238, or email me at [rich.castino@na.sunchem.com](mailto:rich.castino@na.sunchem.com).

Thank you for your consideration.

Sincerely,  
Richard Castino

## Others

### TRAVEL AWARDS AVAILABLE

The Eli Lilly & Company is once again sponsoring a program to provide funding for undergraduate, graduate, and postdoctoral women chemists to travel to scientific meetings in 2007 to present the results of their research. Grants may be applied only for registration, travel, and accommodations, and are restricted to travel to meetings within the United States. Grant funds are limited, but there are some funds set aside for undergraduates. Only U. S. citizens and permanent residents are eligible. Applications should be limited to one per research group. Awards will be given with preference to the following order: (1) any applicant who will be

making her first presentation (regardless of format) at a national or major meeting, (2) graduate or postdoctoral applicants who have not presented at a national or major meeting since leaving undergraduate school. Women who have received a prior award under this program are ineligible.

The deadline is **February 15, 2007**, for receipt of applications for meetings between July 1 and December 31, 2007. For application and more information visit the WCC Web site <http://membership.acs.org/WWCC/> or write [wcc@acs.org](mailto:wcc@acs.org).

### 2007 ACS ProSpectives CONFERENCES

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- Case studies and the latest research for medicinal chemists and life scientists. Every conference features a roster of speakers from both academia and the pharmaceutical and biologics industry, so you get a balanced, whole-view perspective on the subject.

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**2007 ACS ProSpectives  
CONFERENCES**

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**Crystallization Process Development:  
Case Studies & Research**

Chairs: Robin Rogers of the University of Alabama and Allan Myerson of Illinois Institute of Technology

Feb. 25-27, 2007 in Cambridge at the Royal Sonesta Boston

\*\*\*\*

**Discovery and Selection of Successful  
Drug Candidates**

Chairs: Andrew Combs of Incyte and Greg Roth

April 29 - May 2, 2007 in Boston at the Hotel Intercontinental

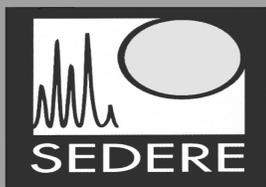
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**Advances in Structure-Based Drug  
Discovery**

Chair: Charles Reynolds of Johnson & Johnson, Kenneth Merz of the University of

(continued on page 23)

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### 2007 ACS ProSpectives CONFERENCES

(continued from page 19)

Florida, and Dagmar Ringe of Brandeis  
 Sept. 9-11, 2007 in San Francisco at the  
 Hyatt Regency Airport

\*\*\*\*

### Process Chemistry in the Pharmaceutical Industry

Chairs: Joe Armstrong of Merck and Chris  
 Senanayake of Boehringer-Ingelheim

Sept. 30 - Oct. 3, 2007 in Cambridge at  
 the Royal Sonesta Boston

\*\*\*\*

### PK/PD for Medicinal Chemists

Chair: David Rodriguez of BMS

Oct. 28-30, 2007 in Philadelphia at the  
 Westin Philadelphia

\*\*\*\*

### Successful Biologics: Formulation to Manufacturing

Chairs: Wenchang Ji of Amgen and  
 LaToya Jones Braun of University of  
 Colorado

November 4-6, 2007 in Philadelphia at the  
 Westin Philadelphia

### On the Move

Dr. Ratna Shekhar (2003 Section Chair)  
 moved last November to Wyeth Pharma-  
 ceuticals' headquarters in Collegeville, PA,  
 as PPU Director for external supplies within  
 the Technical Operations & Product Supply  
 organization. After completing his post-doc  
 at MIT, he joined Novartis in East Hanover,  
 NJ, where he has spent nine years within  
 the chemical and analytical development  
 area. Recently, he completed an internation-  
 al assignment at Novartis Pharma AG in  
 Basel, Switzerland where he led several  
 drug substance development project teams  
 and served on global technical R&D teams.  
 Ratna led a project team for fast-track API  
 development of a Bcr-Abl inhibitor  
 (Tasigna®) where scale up, technology  
 transfer for production launch and dossiers  
 for CMC regulatory submissions were suc-  
 cessfully accomplished in the near-record  
 time. While in Basel, Ratna received training  
 in Six Sigma/Lean methodologies and was  
 also the Team Leader of the first productiv-  
 ity improvement project within Pharma  
 Development.

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