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**Thursday, October 6, 2005**

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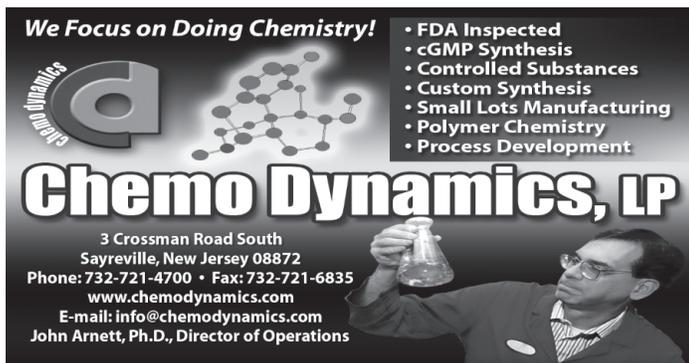
**Deadline for items to be included in the  
December 2005 issue of *The Indicator*  
is October 15, 2005.**

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### THIS MONTH IN CHEMICAL HISTORY (Part 1)

By Harold Goldwhite, California State University, Los Angeles

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

When I first encountered Le Chatelier's principle in my physical chemistry course (back in those far-off times and benighted times the beginning chemistry course did not include any thermodynamics) I somehow assumed that its propounder was an early eighteenth century scientist. Later, when I became more aware of the historical development of the sciences I realized that my assumption could not hold. In fact Henri Louis Le Chatelier lived well into the twentieth century. He was born in Paris on October 8th 1850 and died in Mirabelle des Echelles, in the Isere, on September 17th 1936, just short of his 87th birthday.

Le Chatelier's career is fully described by Cecil H. Desch in "Chemical Society Memorial Lectures Volume IV, 1933-1942" and this article is based on that account. His father had been educated at the Ecole Polytechnique and the Ecole des Mines and played an important part in many industrial developments including steel and aluminum production. He was friendly with many leading French chemists including Chevreul and Dumas, and maintained a private chemical laboratory. Henri, the oldest of six children, entered the Ecole Polytechnique, the most respected scientific and technical university in France, in 1869. In 1871, following in his father's footsteps, he transferred to the Ecole des Mines for more work in engineering. During a brief interlude in government service he published his first short article on the analysis of slag in wrought iron.

Le Chatelier was asked to rejoin the Ecole des Mines as professor of general chemistry in 1877 and in addition to teaching began research on cements for his doctoral thesis. He clarified the mechanisms of setting of a wide range of siliceous and calcareous cements. Throughout his career Le Chatelier recognized no distinction between pure and applied research. One of his favorite examples was the work of Sadi Carnot trying to understand the efficiency of steam engines, which led to the second law of thermodynamics. In 1887 he greatly improved the operation of thermocouples developing the platinum/platinum plus 10% rhodium couple which became the international standard.

The next set of researches was on the problem of methane and carbon monoxide explosions in mines. Ignition temperatures and flame velocities of various gas mixtures were determined, as well as heat capacities and enthalpies of combustion, and Le Chatelier and his collaborators developed improved methods for analyzing gases in mines, and safer explosives for mining. These studies of gas mixtures and concurrent work on thermal dissociation of calcium carbonate led Le Chatelier to a fuller appreciation of thermodynamics and in 1884, generalizing an idea put forward by van't Hoff for the effects of temperature on equilibria, came the first statement of what later became famous as Le Chatelier's Principle. In a paper of over 100 pages published in the "Annales des Mines" for 1888 the Principle was stated in a compact form which I can recommend to instructors of chemistry: "Every change of one of the factors of an equilibrium occasions a rearrangement of the system in such a direction that the factor in question experiences a change in a sense opposite to the original change." The Principle was applied to a wide range of systems in this article, but the Annales was not a widely read journal, and it was not until 1909 that Nernst made a wider range of scientists aware of this work.

Le Chatelier was among the first in Europe to appreciate the thermodynamic ideas of J. Willard Gibbs, and he translated some of Gibbs' work into French and used the Phase Rule in metallurgical studies. In 1898 he moved to the Chair of mineral chemistry at the College de France where his clear and thorough teaching was widely admired. He also published a number of authoritative texts. Entering a new field he began lecturing on metallurgy, and started a study of alloys which led him to develop new microscopy methods for metals and alloys. During World War I Le Chatelier worked on improving casings of artillery shells and after the war he contributed articles on the relationship between science and industry and the teaching of chemistry and technology.

Le Chatelier received many honors during his lifetime from French and foreign scientific societies, including the Academie des Sciences, the Royal Society, and the Chemical Society. He married in 1876 Mlle. Genevieve Nicolas and his surviving family in 1937 included his widow, seven children, thirty four grandchildren, and six great grandchildren.

## HARLEM CHILDREN SOCIETY

*'The Purpose of souls is to Assist each other.'*

The 'Harlem Children Society' was founded by Dr. Sat Bhattacharya in 2000 as a private, Not-for-Profit Organization [501(c) 3]. He currently serves as the President and CEO of the 'Harlem Children Society'. The Goal of the organization is to increase awareness in the Sciences and to provide an opportunity for Inner city High School Students & Youth and their families living in Under-resourced & Under-served Communities & School districts. Our involvement with these communities is an enterprise and an experiment to help increase the entrepreneurial spirit of the communities. It is an Enterprise for generating Hope, for creating a culture, for arming a community with Knowledge to propel itself to the future.

The Harlem Children Society's Experiment with a Dream project selects young people living and attending schools in under-resourced urban communities and engages them in hands-on scientific work-study at major research institutions. "It is thrilling to give the gift of hands-on learning to young people, and to see them share in the excitement of discovery. If we are able to bring science out of the academic stratosphere and give it a context, which attracts and inspires young people, we are accomplishing a great deal. If we insure that that context is inclusive of all young people – exclusive of none – then we will have succeeded," said Harlem Children Society president and CEO, Dr. Sat Bhattacharya.

"We view our involvement with these communities as an experiment and as an enterprise – an enterprise for generating hope and for arming young people with the skills and knowledge that will propel them into the future," Bhattacharya added. "These awards come after long hours of challenging work. The determination of these young people is evident. I am very proud of my students; their families, teachers, mentors and communities should also be very proud."

This year saw the participation of 100 plus High school students from 34 schools (Grades 9 - 12) from inner-city neighborhoods (mostly in NYC) and from the states of NJ, CT, TN, NC and the Native American Hopi and Navajo Reservations in AZ. They conducted research under the mentorship of over 125 renowned scientists and researchers in over 28 institutions such as - Memorial Sloan Kettering Cancer Center, Cornell University Medical Center, Columbia University, Rockefeller University, Albert Einstein School of Medicine, Beth Israel Hospital, Stevens Institute of Technology, Hunter College of CUNY, New York University, American Museum of Natural History, Fordham University, Bronx River Alliance, The Gaia Institute, and the Lehman College Natural Sciences. Some of these bright students will participate in the 'After-school all-year-round Research Program where they will continue their research in the Fall & Spring of 2005-06. The students were selected based on their motivation, enthusiasm & performance at school, on the recommendations from their principal and science teachers, and the interview during the selection process – which earned them a spot in the summer internship.

The year's activities were capped off by the Harlem Science Street Fair and Festival, where students presented their work on the streets of Harlem alongside music and other forms of entertainment. Awards were given for best presentations. Various companies and universities also participated in the event by presentation of booths or other displays promoting science. (Pictures from 2004 fair available at <http://www.harlemchildrensociety.org/fair.html>)

The Harlem Children Society is dedicated to promoting innovative science education programs to children and youth living in under-resourced and underserved communities and school districts. The organization seeks to engage learners in a healthy enquiry of the world, and to expose them to opportunities available in the field of science that might be otherwise out-of-reach. The pursuit of higher education and career achievement is emphasized by providing students with knowledge, skills, guidance, encouragement and understanding. The Harlem Children Society is a private, not-for-profit organization, recognized by the city, state and federal governments. Donations to the Harlem Children Society are tax-deductible to the extent allowed by law.

Contact: Dr. Sat Bhattacharya, President & CEO, Harlem Children Society, (646) 643-8563, e-mail: [bhattach@mskcc.org](mailto:bhattach@mskcc.org), website: [www.harlemchildrensociety.org](http://www.harlemchildrensociety.org).

## New York Meetings

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

### LONG ISLAND SUBSECTION

#### Porphyrin Complexes Containing Heterocycles on the Periphery for Use in Assembling Arrays

**Speaker:** Dr. Alison G. Hyslop  
St. John's University  
Department of Chemistry

Porphyrin arrays are ubiquitous in nature and play a key role in light harvesting processes of photosynthesis through absorbing light energy and transferring the energy to a reaction center. Nature takes advantage of the well-controlled geometry, precise electronics, and catalytic properties that porphyrin arrays afford for a variety of applications and functions, from oxygen transport in hemoglobin to electron transfer in cytochrome *c* to light harvesting in photosynthetic systems.

Our research is focused on the formation of new porphyrin complexes which possesses a group on the porphyrin periphery capable of non-covalent interactions with a metal center.

**Date:** Thursday, October 6, 2005

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

**Place:** Hofstra University  
Lister Auditorium  
California Avenue  
New Chemistry Building

## CHEMICAL MARKETING & ECONOMICS GROUP (CM&E)

### The Evolution of the Global Nanotechnology Industry

**Speaker:** Magnus R.E. Gittins  
President & CEO  
Advance Nanotech, Inc.  
New York, NY and  
London, UK

**Date:** Thursday, October 6, 2005  
[Note: CM&E will be meeting on first Thursday of the month from now on]

**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 **Tuesday, October 4th** (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 (718) 961-8958, or via e-mail to: [cmegroup@yahoo.com](mailto:cmegroup@yahoo.com). To pay online by credit card (via PayPal), go to the CM&E Website: <http://www.nyacs-cme.org/>

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## HIGH SCHOOL TEACHERS TOPICAL GROUP

### Transforming the Microscopic World with Computer-Generated Holograms

Speaker: Prof. David Grier  
New York University

Please refer to <<http://physics.nyu.edu/grierlab/>> with special attention to the section on holographic optical trapping, which Prof. Grier describes as "very visual material, and can be quite appealing to non-scientists."

Date: Friday, October 21, 2005

Times: Social and Dinner — 5:45 PM

Place: Caffè 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.



## FOUNDER'S DAY LECTURE — ST. JOSEPH'S COLLEGE

### Imaging Addiction in the Human Brain: Using Molecular Imaging to Understand How Drugs of Abuse Affect the Brain

Speaker: Dr. Joanna Fowler  
Senior Chemist  
Brookhaven National  
Laboratories

Dr. Fowler will discuss her research using chemistry to synthesize radiotracers with positron emitters. These compounds are used in positron emission tomography (PET) studies of neurotransmitter activity in the human brain. These studies have demonstrated the ways brain circuits change in response to addictive drugs.

Dr. Fowler, a senior chemist at the U.S. Department of Energy's Brookhaven National Laboratory, has been the recipient of numerous awards including the American Chemical Society's (ACS) 2002 Glenn T. Seaborg Award for Nuclear Chemistry.

Date: Monday, October 24, 2005

Time: 4:30 PM

Place: St. Joseph's College Auditorium  
245 Clinton Avenue  
Brooklyn, NY

Cost: Free and open to the public



Dr. Joanna Fowler

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

### Therapeutic Opportunities of the Wnt Signaling Pathway in Cancer

Organizers: Matthew Lorenzi and  
Brent Rupnow  
Bristol-Myers Squibb

Speakers: Stuart Aaronson  
Mount Sinai School of Medicine  
Randall Moon  
University of Washington

Eric Fearon  
University of Michigan Cancer  
Center

Paul Polakis  
Genentech, Inc.

Date: Tuesday, October 25, 2005

Times: 1:00 - 5:00 PM

Place: New York Academy of Sciences  
Main Hall  
2 East 63rd Street (between  
Fifth and Madison Avenues)  
New York, NY

Space is limited. Reserve a seat on-line at <http://www.nyas.org/events> or telephone (212) 838.0230 x322.

NYAS Members and BPDG Affiliates may attend BPDG meetings free of charge. Non-members may attend for a fee of \$20 per event; Student Non-members for \$10. To become a Member of the Academy, visit <http://www.nyas.org/landing.html>.

## BROOKLYN SUBSECTION — JOINT PROJECT WITH THE CHEMICAL EDUCATION COMMITTEE

### High School Poster Session XI

The eleventh annual High School Poster Session sponsored by the Chemical Education Committee and the Brooklyn Subsection will take place on Saturday, October 29, 2005 at St. Joseph's College, Brooklyn, New York. Participants are invited to arrive from 9:00 am and judging will take place from 10:00 am until noon.

Dr. Christian M. Rojas of the Department of Chemistry at Barnard College will be the Guest Speaker for this year's audience.

All are welcome to attend.

Date: Saturday, October 29, 2005

Times: 9:00 AM - 12:00 Noon

Place: St. Joseph's College  
245 Clinton Avenue  
Brooklyn, NY

Additional information can be obtained at (718) 636-7243 or on line at [mmaier8082@aol.com](mailto:mmaier8082@aol.com).





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## North Jersey Meetings

<http://www.njacs.org>

### EXECUTIVE COMMITTEE

All ACS members are welcome to attend.

**Date:** Monday, October 24, 2005  
**Times:** Meeting 5:30 PM  
**Place:** Fairleigh Dickinson University  
285 Madison Avenue  
Rice Lounge  
New Academic Building  
Madison, NJ  
**Cost:** Dinner approx. \$10.00  
(Pizza and Soda)

Reservations: For dinner, call (732) 463-7271 or email [njacsoffice@aol.com](mailto:njacsoffice@aol.com) prior to Wednesday, October 19, 2005.

**Dinner at the North Jersey 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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ANALYSIS FOR THE CHEMICAL ELEMENTS

### 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, October 6, 2005**, 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.



### NJACS-TEACHER AFFILIATES

#### Executive Meeting

**Date:** Monday, October 10, 2005  
**Time:** 4:30 PM  
**Place:** Chatham High School  
255 Lafayette Avenue  
Chatham, NJ

Contact Diane Krone at  
[kroned@alumni.stevens-tech.edu](mailto:kroned@alumni.stevens-tech.edu) or  
(201) 385-4810.

## We Salute Our Veterans





### NORTH JERSEY CHROMATOGRAPHY GROUP

#### Fast and Ultra-Fast HPLC and LC/MS — What Are You Willing to Change?

**Speaker:** Thomas M. Trainor, Ph.D.  
Agilent Technologies  
Andover, MA

#### Understanding High Performance Gradient Separations

**Speaker:** Rita K. Steed  
Agilent Technologies, Inc.

#### Date: Tuesday, October 11, 2005

**Times:** Social 5:30 PM  
Dinner 6:30 PM  
Seminar 7:30 PM

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

**Cost:** \$35 for Dinner (\$15.00 for Students)  
Open seating for those not attending the dinner.

Reservations: Please reserve by **Thursday, October 6, 2005**. Preregistration 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.



### ORGANIC CHEMISTRY TOPICAL GROUP

#### Fall Symposium — Successful Drug Discoveries: Case Studies and Reflections

**"Discovery of Sitagliptin (MK-0431): A Potent Orally Active Dipeptidyl Peptidase IV Inhibitor for the Treatment of Type 2 Diabetes"**

*Dooseop Kim*  
Merck & Co., Inc.

**"Himbacine-based Thrombin Receptor (PAR-1) Antagonists as Novel Antithrombotic Agents"**

*Samuel Chackalamannil*  
Schering-Plough Research Institute

#### "Adventures in the Discovery and Development of a Novel CDK Inhibitor"

*Allen J. Lovey*  
Hoffmann-La Roche Inc.

#### "A Nucleoside Analog Program - the Discovery of Entecavir"

*Robert Zahler*  
Bristol-Myers Squibb Co.

#### "Screening diverse chemical libraries is the worst way to discover a drug"

*Chris Lipinski*  
Pfizer (Adjunct)

#### Date: Friday October 21, 2005

**Times:** Continental Breakfast 8:00 AM  
Meeting 9 AM to 12 noon and  
1:30 PM to 4 PM

Buffet lunch will be served  
**Place:** The Embassy Suites Hotel  
121 Centennial Ave.  
Piscataway, NJ

For directions, information and further details please visit our website:

[www.njacs.org/organic.html](http://www.njacs.org/organic.html)

Due to limited seating, registration and payment are required by **October 13th**.  
Registration, continental breakfast and lunch

Regular: .....\$75  
Students or Post-docs: .....\$30

Name \_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

E-mail \_\_\_\_\_

To register:  
Send above registration information with a check made payable to "North Jersey Section ACS" to:

Dr. Jianshe Kong  
Schering-Plough Research Institute  
2015 Galloping Hill Rd.  
Mail Drop K-15-2-2800  
Kenilworth NJ 07033  
E-mail: [jianshe.kong@spcorp.com](mailto:jianshe.kong@spcorp.com)

**NATIONAL CHEMISTRY WEEK IS COMING SOON**

Do you enjoy generating lots of smiles and hearing an excited youngster ask if they can try that experiment? Why not join the North Jersey Section of the American Chemical Society (ACS) this year in its outreach to the general public? On Saturday, Oct. 22 from 9:30-4:30 (you can divide this into shift work at Fairleigh Dickinson University in Madison, the Section will be celebrating chemistry with the next generation of future scientists. Volunteers are needed to put on hands-on activities geared for 8 to 12 year olds.

The theme for this year is "The Joy of Toys". You are not limited to this topic but it would be appreciated, if many of our activities dealt with this topic. As usual our first priority is safety. Preferably, we would like presenters to use household materials to demonstrate a scientific principle. Hopefully, the students will be able to redo these experiments at home and at school. To help in the representation of the activities, hand-out instructions are very useful.

If you are out of ideas for safe activities for a table, you can look at the NCW page at the ACS website. To minimize duplication of the presentations, we will need to know by October 2 the activity you would like to conduct at your table. Individuals contacting us first with their idea(s) will be given priority, so please let us hear from you as soon as possible. **By October 12**, we need to have the names and addresses of the individuals who will be joining you at your table.

As usual we are looking for financial support to cover the many expenses associated with our activities and would be most grateful, if you would contact the appropriate individuals at your company.

Please fill out the following forms and return them to me:

**Form 1. Count me in.**

My name is: \_\_\_\_\_  
 I am volunteering to work on:  
**Saturday, Oct. 22,** 9:30-12:30  
 (Underline times) 12-4:00  
 or all-day  
 I can be reached at: \_\_\_\_\_  
 (work phone number)  
 My complete address is: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

I am an employee at: \_\_\_\_\_  
 \_\_\_\_\_  
 The activities at my table will be: \_\_\_\_\_  
 \_\_\_\_\_  
 In addition to a table, I also need: \_\_\_\_\_  
 \_\_\_\_\_  
 I will be bringing handouts on activities that the students can do at home. Yes No  
 I will need more than one table. Yes No  
 How many additional tables will you need? \_\_\_\_\_

**Form 2. My company would like to support these efforts.**

The following company/individuals are willing to help defray the costs of these events: (Checks should be made out to the North Jersey Section and sent to me.)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

An acknowledgement letter for this contribution should be sent to (name and full address):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Form 3. I will be joined at my table by the following volunteers.**

Complete Name: \_\_\_\_\_  
 Institution: \_\_\_\_\_  
 Address (snail mail): \_\_\_\_\_  
 \_\_\_\_\_  
 Acknowledge letters should be sent to:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Activity: \_\_\_\_\_  
 \_\_\_\_\_  
 Time Volunteering: \_\_\_\_\_

Thanks very much for all of your help. The Section is most appreciative of your efforts.

Valerie J. Kuck  
 45 Warfield St.  
 Upper Montclair, NJ 07043  
**vjkuck@yahoo.com**



**ChemTAG MEETING**

**Date:** Saturday, October 22, 2005  
**Time:** Immediately following National Chemistry Week Celebration  
**Place:** Fairleigh Dickinson University Madison, NJ

Contact Diane Krone at **kroned@alumni.stevens-tech.edu** or (201) 385-4810.

**CHEM ESSENTIALS**

Are you A NEW Chemistry Teacher? A Teacher NEW to Chemistry? A Chemistry Teacher Who Is Looking for Something NEW?

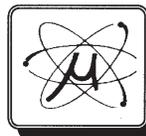
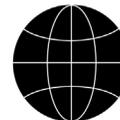
**Then CHEM ESSENTIALS is for YOU!**

Friday evening workshops will include content, activities, labs, and alternate assessment centered around a different topic each quarter.

The 2005-06 Workshops include:

- Periodic Table (November 11)
- Reactions (February 10)
- Equilibrium Kinetics (April 21).

Contact Brenda Rosenau at **BKRosenau@aol.com**



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**2005 LEO HENDRIK BAEKELAND AWARD SYMPOSIUM AND PRESENTATION TO PROFESSOR YOUNAN XIA, DEPARTMENT OF CHEMISTRY, UNIVERSITY OF WASHINGTON**



**Date: Thursday, Nov 10, 2005**

**Place:** Lucent Technologies, Murray Hill, New Jersey

1:00 – 1:30 Registration

1:30 – 2:30 "Controlling Inorganic Crystallization at the Nanoscale Using Organic Templates; Lessons from Biomineralization"

2:30 – 3:30 "Materials and Patterning Techniques for Microelectronics"

3:30 – 4:00 Break

4:00 – 5:00 "Catalytic Motors and Pumps"

5:00 – 6:00 "Soft Lithography. Recent Results in Techniques for Fabrication of Functional Micro- and Nanostructures Using Stamping, Molding, and Derived Techniques"

6:00 – 7:30 Reception, Dinner, and Presentation of the Baekeland Medal

7:30 "Shape-Controlled Synthesis of Nanostructures: Simple Chemistry Meets Complex Physics"

Dr. Joanna Aizenberg  
Bell Labs  
Lucent Technologies

Professor John Rogers  
University of Illinois at Urbana-Champaign

Professor Tom Mallouk  
Pennsylvania State University

Professor George Whitesides  
Harvard University

Professor Younan Xia,  
University of Washington

Pre-registration is recommended. Please register online at [www.njacs.org](http://www.njacs.org). Deadline is **Thursday, November 3, 2005**. The site also has directions, maps and parking information etc.

Price: \$75.00 (students: \$30). Payable at the symposium, or in advance using the form below: Cash or check, no credit cards, please!

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Institutional Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

Please make your check or money order payable to the North Jersey Section of the ACS.

Please return to: John Haberman  
34 Mitchell Ave.  
Roseland, NJ 07068  
**(By Nov 3)**



**NATIONAL CHEMISTRY WEEK 2005**



**Poster Contest: "The Joy of Toys"**

As part of the National Chemistry Week 2005 celebration and in recognition of its theme, "The Joy of Toys", the American Chemical Society (ACS) is sponsoring a poster contest for students in Kindergarten – Grade 12.

**Students are invited to create a poster that will serve as a public service announcement emphasizing the role of science/chemistry in toys** (i.e. toy development, toy production, materials of which toys are made, toy safety through chemistry, toys from different times in history and different cultures, toys that use chemistry to make them work).

Participants should create a poster that has a chemistry/science in toys message for the general public.

**Prizes...Prizes...Prizes....Prizes...**

First and second place in each of the following grade categories:

- K – 2nd
- 3rd – 4th
- 5th – 8th
- 9th – 12th

Prizes for teachers of winning students

Local Section Prizes for first second and third winners and their teachers in each category.

**EDUCATORS:**

Find important information about this contest—connections to chemistry and alignment to the National Science Education Standards at [chemistry.org/ncw](http://chemistry.org/ncw).

For more information contact Jeannette Brown [Jebrown@infionline.net](mailto:Jebrown@infionline.net) [www.njacs.org/ncw](http://www.njacs.org/ncw)

**Posters to be submitted by December 1** to: North Jersey ACS NCW Poster Contest  
4 Cameron Rd . Piscataway, NJ 08854

**National Chemistry Week Poster Contest**

ACS local sections are encouraged to participate in the NCW poster contest by inviting Kindergarten – Grade 12 students with-

in their geographic area to compete in the contest.

**Contest Rules:**

- All entries must be original works without aid from others.
- Posters must be no larger than 14 x 22 inches in size.
- Entries on foam board will not be accepted.
- Entries must be drawn using crayons, paint, colored pencils or markers.
- Only one entry per student will be accepted.
- All entries **must** have the following information included on the back of the poster: name of local section, student's name, grade, name of school, school address, teacher's name, and school telephone number teacher's email address (optional).
- Entries lacking complete and legible information will be disqualified.
- **Posters must be submitted by December 1, 2005.**
- ACS is not responsible for lost, damaged, or delayed postal shipments.
- All posters become the property of the American Chemical Society.
- Acceptance of prizes constitutes consent to use winners' names and entries for editorial, advertising and publicity purposes.

**Judging:**

Participant entries will be evaluated on how well the message in the poster promotes the chemistry found in toys.

Four criteria will be used to determine the top entry for each age group:

1. **Artistic merit** (use of color, poster design and layout)
2. **Poster Message** (related to chemistry's role in the science of toys).

*Note: To be competitive on the national level, poster content must correlate with the National Science Education Standards. For detailed information—see online guide at [chemistry.org/ncw](http://chemistry.org/ncw).*

3. **Originality** (unique, clever and/or creative design)

*(continued on page 16)*

## NATIONAL CHEMISTRY WEEK

(continued from page 15)

4. **Neatness** (free of spelling and grammatical errors and/or stray marks)

The North Jersey Section will identify and submit one winning poster in each of the four (4) grade categories to the ACS Office of Community Activities in Washington, DC. All posters will be displayed during the 231st ACS National Meeting in Atlanta, GA, March 26 – 30, 2006. First and second place winners will be selected for each grade category during this meeting. Winners will be notified by April 14, 2006.

National Chemistry Week is a program of the American Chemical Society

Membership Division - Office of Community Activities, 1155 Sixteenth Street, NW, Washington, DC 20036 • 800-227-5558, ext. 6097 • [ncw@acs](mailto:ncw@acs)

## Call for Nominations

### 2006 RICHARDS MEDAL

Nominations are invited for the 2006 Theodore William Richards Medal Award for conspicuous achievement in any area of chemistry. The Northeastern Section of the American Chemical Society awards the Richards Medal, honoring America's first chemistry Nobel laureate and initially presented in 1932, every two years.

The medal was last presented to Prof. John Ross of Stanford University. The next presentation will be made in March 2006.

A nomination package consists of a brief curriculum vitae, a list of up to twenty citations for key publications, and a clear and concise nomination letter outlining the nominee's "conspicuous achievements in chemistry." These materials **must** be submitted electronically in a single Adobe® PDF format file to:

Dr. Charles Kolb  
Aerodyne Research, Inc.  
BillERICA, MA 01821-3976  
[kolb@aerodyne.com](mailto:kolb@aerodyne.com)

Nominations must be received by **November 1, 2005**. Nominators are responsible to confirm receipt of their email nomination package. For additional information contact: Chuck Kolb, phone: (978) 663-9500, ext. 290; fax: (495) 663-4918; email: [kolb@aerodyne.com](mailto:kolb@aerodyne.com).

## Others

### FAIRLEIGH DICKINSON UNIVERSITY — COLLEGE AT FLORHAM

#### Fall Seminar Series

**Tuesday, October 4**

Title: TBA  
Dr. William Orton  
SynDesign Corporation

**Tuesday, October 11**

"Voyage to the Bottom of the Sea. Chemistry of the Hydrothermal Vents"  
Dr. Donald Nuzzio  
Analytical Instrument Systems

**Tuesday, October 18**

"Crime Scene Investigations and DNA Analysis"  
Professor Lawrence Kobilinsky  
John Jay University

**Tuesday, October 25**

"Design and Synthesis of Matrix Metalloproteinase Inhibitors for the Treatment of Osteoarthritis".  
Dr. Leslie McQuire, Novartis Corp.

**Tuesday, December 6**

"Tiny Conspiracies: Cell-to-Cell Communication in Bacteria"  
Professor Bonnie Bassler  
Princeton University

Times: Seminars will begin at 4:00 PM  
Place: Science Building, Room 18.

Light refreshments. For more info, call (973) 443-8781.



### NJIT — DEPARTMENT OF CHEMISTRY & ENVIRONMENTAL SCIENCE

#### Seminar Series — Fall 2005

**Wednesday, October 5**

"Development of Micro-Scale and Automated Membrane"

Xiaoyan Wang  
New Jersey Institute of Technology  
Department of Chemistry & Environmental Science

**Wednesday, October 19**

"Materials for Anti-Stokes Cooling"  
Dr. James Guiheen  
Specialty Materials  
Honeywell International, Inc.  
Morristown, NJ

Times: 11:30 AM - 1:00 PM

Place: New Jersey Institute of Technology  
Department of Chemistry & Environmental Science

Seminar Series Coordinator: Dr. Zeyuan Qiu, (973) 596-5357 [qiu@njit.edu](mailto:qiu@njit.edu)



### WILLIAM PATERSON UNIVERSITY — DEPARTMENT OF CHEMISTRY & PHYSICS

#### Fall 2005 Seminar Series

**Thursday, October 6, 2005**

"Understanding How Fuel Cells and Batteries Work: NMR Studies of Disordered Materials"

Professor Clare Grey  
Department of Chemistry  
Stony Brook/SUNY, New York, NY

**Tuesday October 18, 2005**

"Laser Processing of Electrochemical Materials"

Professor Craig B. Arnold  
Department of Aeronautics  
Princeton University, Princeton, NJ

**Thursday, October 27, 2005**

"Quantum Computing"  
Professor Steve Lyons  
Department of Electrical Engineering  
Princeton University, Princeton, NJ

**Tuesday, November 8, 2005**

"Triggered Chirality in Molecules and Materials"

Professor James Canary  
Department of Chemistry  
New York University, New York, NY

Times: 12:30-1:50PM

Place: Science Room 433

<http://www.wpunj.edu/cos/chem-physics/>

Seminar coordinator: Dr. SH Chung; (973) 720-3458; [ChungS@wpunj.edu](mailto:ChungS@wpunj.edu)

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**BROOKLYN COLLEGE OF THE  
CITY UNIVERSITY OF NEW  
YORK**

**Chemistry Department Colloquium —  
Fall 2005**

**Friday, October 21**

Topic to be announced  
*Prof. Glen Kovach*  
Department of Chemistry  
The City College of CUNY

**Friday, October 28**

Topic to be announced  
*Prof. Rabi Ann Musah*  
Department of Chemistry  
State University of New York  
at Albany

**Friday, November 4**

Topic to be announced  
*Prof. Ruel Desamero*  
Department of Natural Sciences  
York College of CUNY

**Thursday, November 10**

**Twenty-First H. Martin Friedman Lecture  
12:30 PM, Room 148NE**

"Watching Molecules React: Chemistry with  
Computers"  
*Prof. Kendall N. Houk*  
Department of Chemistry and Biochemistry  
University of California  
Los Angeles

**Friday, December 2**

"New Directions in Environmental  
Separations: Arsenic, Perchlorate, and  
Bifunctional Polymers"  
*Prof. Spiro Alexandratos*  
Department of Chemistry  
Hunter College of CUNY

Times: Colloquium 2:30 PM  
Social Hour 3:30 PM

Place: Room 432 Ingersoll Extension  
Brooklyn College  
2900 Bedford Avenue  
Brooklyn, NY

**HAMAMATSU**  
photonics  
LEADING WITH LIGHT

**A morning with just a few molecules**

On Thursday, November 17, 2005 at 9:30 a.m. Hamamatsu Corporation will host a Leading With Light Seminar, presented by Professor Richard N. Zare, the Marguerite Blake Wilbur Professor in Natural Science at Stanford University. Professor Zare will present what he believes to be a superior way to carry out single molecule spectroscopy, a technique he calls few molecule spectroscopy.

**Abstract:** Single Molecule Spectroscopy breaks the ensemble average and allows the observation of rare events that would otherwise be hidden by the average response of a collection of molecules. Examples of the application of few molecule spectroscopy to detect different conformational states of molecules, will be presented.

Professor Zare's seminar is intended for students, researchers, engineers, and managers who are interested in using spectroscopy to better understand the behavior of biological molecules. The seminar will interest workers in drug discovery, biochemistry, cell biology or chemical physics.

Seating is limited - Registration: <http://sales.hamamatsu.com/forms/techseminar>. Or contact:

Alison Perrine, 908-231-0960 x 2151, [aperrine@hamamatsu.com](mailto:aperrine@hamamatsu.com)  
Katie Clerico, 908-231-0960 x 2134, [kclerico@hamamatsu.com](mailto:kclerico@hamamatsu.com)

**Puzzle**

**"Grecian Formula"**

by Arthur Bradley

1	2	3	4	5	6	7	8	9	10	11	12	13	
14			15	16				17					
18				19				20					
21				22			23						
		24				25							
26	27			28		29			30	31	32	33	34
35			36					37		38			
39					40				41		42		
43				44		45				46			
47							48					49	
					50	51	52			53		54	
55	56	57	58					59				60	61
62							63				64		
65							66				67		
68							69					70	

**ACROSS**

- Ash receptacle
- Often refers to time
- Trojan War reporter
- Weaving machine
- Without solvent
- County in South Africa
- Brief message
- He wanted a huge lever
- Jim Thorpe was a great one
- Bessie's blues title
- Wear away with acid
- The \_\_\_ pack
- Alcohol's revenge
- Zeus cheated on her
- Not concealed
- Inoffensive substitute
- Lowest point
- Spanish nursing
- Could be liquid or frozen
- A kind of art
- Shakespeare was one
- Demands immediate action
- Jane or Henry
- A code we all have
- Prefix denoting error
- Electron property

**DOWN**

- Part of an arm
- Part of a tree
- Bad actor
- A thing detested
- French father
- Bomber squadron
- Anesthetic
- He had good vibes
- Rainbow word
- Fashion
- Sunset times
- Betsy or Lanny
- Change state
- \_\_\_ bad boy!" (Costello)

- \_\_\_ ion (formation)
- Mr. \_\_\_ (rock tune)
- A kind of coffee
- A kind of jet
- Go higher
- In \_\_\_ (enter by force)
- Adam and Eve recollection
- Starlet Christina
- Aikman and Donahue
- Like a diamond
- \_\_\_ schaum (claylike mineral)
- What fashion designers do
- Sneky coward
- Brisith prison
- Support pin
- Brief concession speech
- annoyed
- They inspect your books
- Photography fluid
- Aleutian island
- At that time
- Projecting overhang
- Cathartic from African plant
- It's for the birds
- Cheery word

**Solution on page 23.**

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14	L	O	O	M	N	E	A	T	A	V	O	V	O	
18	N	O	T	E	A	R	C	H	I	M	E	D	E	S
21	A	T	H	L	E	T	E	E	M	P	R	E	S	S
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26	D	T	S	H	E	R	A	O	V	E	R	T		
35	E	U	P	H	E	M	I	S	M	N	A	D	I	R
39	C	R	I	A	A	S	S	E	T	D	E	C	O	
43	A	B	A	R	D	E	M	E	R	G	E	N	C	Y
47	F	O	N	D	A	A	R	E	A	M	I	S		
50	S	P	I	N	N	O	S	E						
55	C	H	A	T	T	E	L	E	D	L	O	M	A	N
62	P	Y	T	H	A	G	O	R	A	S	R	O	L	E
65	A	P	T	E	R	S	A	V	E	E	R	O	S	
68	S	O	U	N	D	T	H	E	T	A	Y	E	T	

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