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2006 Chair  
ACS New York Section



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### EDITORIAL DEADLINES

March	January 14, 2006
April	February 14
May	March 15
June	April 14
September	July 14
October	August 15
November	September 15
December	October 15
January 2007	November 14
February	December 15



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

# January Calendar

## NEW YORK SECTION

Thursday, January 12, 2006

Chemical Marketing & Economics Group  
See page 11.

Friday, January 20, 2006

High School Teachers Topical Group  
See page 11.

Saturday, January 21, 2006

NY Section Wide Meeting  
See page 6.

Tuesday, January 24, 2006

Biochemical Topical Group  
See page 12.

## NORTH JERSEY SECTION

Monday, January 9, 2006

Teacher Affiliates Executive Committee  
See page 7.

Monday, January 9, 2006

Careers in Transition  
See page 7.

Tuesday, January 10, 2006

Mass Spectrometry Discussion Group  
See page 8.

Wednesday, January 11, 2006

Chem Central  
See page 8.

Thursday, January 12, 2006

ChemTAG  
See page 8.

Thursday, January 19, 2006

No. Jersey Group of Small Chemical  
Businesses  
See page 9.

Monday, January 23, 2006

No. Jersey Section Executive Committee  
See page 7.

**Deadline for items to be included in the March 2006 issue of The Indicator is January 14, 2006.**

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## NEW YORK CHAIRMAN'S MESSAGE

All of you who are involved in our section know that this organization serves a crucial role in creating bridges between industry, academia and the public. Our members volunteer throughout our local communities, educating the public and promoting chemistry in society.

Our large NY section is distinguished by six sub-sections whose meetings and programs foster chemical communities throughout the metropolitan area. Our section has a long and distinguished history of nationally recognized events such as the William H. Nichols Symposium and Medal. In 2006 we will be honoring our 100th medallist, Professor K. Barry Sharpless of the Scripps Research Institute for his novel contributions in the field of Organic Chemistry. Our topical groups are venues for chemical specialists to come together and share ideas. We also sponsor numerous annual events that inspire young people to pursue chemistry as a profession. These include the Undergraduate Research Symposium, Project Seed, the Chemistry Olympiad, Chemagination, and the High School and Graduate Student Poster Sessions. To honor those who support our chemistry students, the section presents the Nichols Foundation Chemistry Award for High School Teachers. We are involved in many public outreach programs and were very pleased to add a day of chemistry demonstrations at the New York Hall of Science in recognition of National Chemistry Week 2005. We hope that the college students who volunteered their time to make this event a success sparked an interest that will help to inspire the next generation of chemists.

As I begin my tenure as Chair of the New York Section, I am honored to have the opportunity to address you and outline some of the areas that I would like to focus on in 2006.

### I. The Academic - Industrial Partnership

The demographic shift in our section has been from industry to academics. As a result, most of the active membership at the local level is affiliated with colleges and universities. We need to focus on and strengthen the ties to the businesses in our area so that we can rediscover the synergy in our goals. We need to work together to foster the development of young professionals and enhance the public perception of chemistry and the essential role it plays in our lives.

### II. Energizing Our Younger Members

Student Affiliates and the Younger Chemists Committee are groups that are designed to serve the needs and interests of younger chemists, including new professionals, graduate and undergraduate students at colleges and universities in our area. Creating a community in the New York area for them will contribute to continuing the vitality of our local section.

### III. Easy Ways To Get Involved

The need to invite all chemists — young and old — to make valuable contributions to our organization and to participate in various activities is essential to the vitality of the section. I am asking all of the leaders of topical groups, subsections and committees to find areas where important functions in their groups and in organizing activities can be delegated, so that new members or members seeking growth and change can experience the gratification and rewards that the variety of activities in our section can provide.

I look forward to an exciting rewarding year working with all of you.

Jill Rehmann, Ph.D.  
2006 Chair ACS - New York Section

## NEW YORK SECTION'S 2006 SECTION-WIDE CONFERENCE

Date: Saturday, January 21, 2006

Times: 9:30 AM – 1:00 PM

Place: Pace University, 861 Bedford Road  
Pleasantville, NY; Kessel Student Center; Gottesman Room  
(Entrance 3 off of Route 117 in Pleasantville)

Cost: Free to all

### PROGRAM

- 9:30 AM **Arrival and Refreshments** - Welcome to the ACS, New York Section's 2006 Section-wide Conference and to Pace University
- 10:00 AM **Greetings from the 2006 Chair of the ACS New York Section** Jill K. Rehmman
- 10:10 AM **Award Presentations:**  
Service Plaque and Pin to the 2005 NY Section Chair James W. Canary  
New York Section Outstanding Service Award for 2005 David N. Rahni
- 10:30 AM **Report of the 2006 Elections Nominating Committee** Joan A. Laredo-Liddell  
(Presentation of Candidates) 2006 Chair-elect
- 10:45 AM **Keynote Presentation: Preparing the Next Generation of Chemists: A Partnership Between Academia and Industry Salutes to Excellence Awards – Internship Programs for Chemistry Students**
- 11:45 AM **Coffee Break**  
(Poster Presentations by New York Section Project Seed Students)
- 12:00 PM **ACS, New York Section Committee Planning Sessions for 2005**  
**Educational Activities** (Chemagination, Chemical Education, Continuing Education, Graduate Student Posters, High School Olympiad, National Chemistry Week, Nichols Foundation Teacher Award, Project Seed, Public Outreach, Student Affiliate) Chair: Sr. Mary L. Maier  
**Member Affairs** (Awards, Employment and Professional Relations, NYACS History, Indicator, Membership, Minority Affairs, Outstanding Service Award) Chair: Ralph Stephani  
**Program Review** (Subsection and Topical Discussion Group Chairs) Chair: Anne T. O'Brien  
**Public Affairs** (Academe and Industrial Relations, Community Relations and Publicity, Congressional Science Counselors, Environmental Chemistry, Fund Raising, Information Technology, Speakers Bureau) Chair: Robert P. Nolan
- 12:45 PM **Reports from the Chairs of the Committee Planning Sessions**
- 1:00 PM **Conclusion of the Meeting.**  
Join with colleagues for lunch at a local restaurant.

To inquire about the Section-wide Conference, please call the New York Section Office at 516-883-7510 or e-mail Marilyn Jespersen, Office Administrator, at: [njesper1@optonline.net](mailto:njesper1@optonline.net)

Directions are at <http://www.pace.edu/admissions>. Select Campus Tours and Information Sessions, select Pleasantville campus, select directions. Train information as well as driving information will appear. For Parking: Use any available lots around the student center. Emergency # for closings: 914-773-3398.

**Scientists, teachers and students of all levels are invited to participate.**

## North Jersey Meetings

<http://www.njacs.org>

### EXECUTIVE COMMITTEE AND SECTION MEETING

Section officers, councilors, committee chairs, topical group chairs, and section event organizers meet regularly at the Section 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. Members interested in being on section committees should contact the section chair, Stephen Waller ([waller@njacs.org](mailto:waller@njacs.org)) prior to this meeting.

Date: Monday, January 23, 2006

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, January 18, 2006**. 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 searching.

The next meeting for the Careers In Transition Group will be held **Thursday, January 6, 2006**, 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

Date: Monday, January 9, 2006

Time: 4:30 PM

Place: Chatham High School  
255 Lafayette Avenue  
Chatham, NJ

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

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## MASS SPECTROMETRY DISCUSSION GROUP

Advanced Methodology for Proteomics  
and Metabolomics

Sponsored by: Bruker Daltonics

### Topic 1:

"Proteomics and Metabolomics Using  
FTICR-MS for Biomarker Discovery"

Dr. Christoph Borchers

University of North Carolina Medical School

### Topic 2:

TBA

Date: Tuesday, January 10, 2006

Time: Social 5:30 PM

Dinner 6:30 PM

Announcements and  
Presentations 7:15 PM

Place: Somerset Marriott

Cost: None

Please visit [www.njacs.org / ms.html](http://www.njacs.org/ms.html) for  
registration.

## CHEM CENTRAL

Date: Wednesday, January 11, 2006

Time: 4:00 PM

Place: West Windsor/Plainsboro South  
High School  
346 Clarksville Road  
Princeton Junction, NJ

Contact: Karen Shannon@ww-p.org



## ChemTAG

Date: Thursday, January 12, 2006

Time: 4:00 PM

Place: Newark Academy  
91 S. Orange Avenue  
Livingston, NJ

Contact: Josephine Allocca at  
[jallocca@newark.edu](mailto:jallocca@newark.edu)

## SURPRISE

our editor by calling and saying you appreciate  
the quality and content of our newsletter. Our  
editor works hard to maintain a publication of  
interest to our membership. Oh, and by the  
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## NEW JERSEY GROUP OF SMALL CHEMICAL BUSINESSES

Understanding More about Online  
Marketing for the Small Chemical  
Company

Speaker: John Strazza  
Director of E-Media  
Chemical Week

By understanding more about the online  
marketing arena you can better tailor the  
design of your web site and your market plan  
to peak and meet your audience's interests.  
Today's topic includes questions like:

- "Should my company market its products  
online in the current financial environ-  
ment?"
- "What are the best methods and places  
to market on the web?"
- "How will buyers find my product?"
- "What about e-commerce, driving traffic  
to the site and ROI?"

Chemical industry professionals who are  
asking about marketing online will find  
John's delivery refreshing and enlightening  
while enabling them to make educated deci-  
sions about E-media marketing, a new ser-  
vice being offered to chemical manufactur-  
ers and distributors by Chemical Week.

John Strazza, Director of E-Media for the  
Chemical Business Media Division of  
Access Intelligence, LLC, has a no-non-  
sense approach to today's migration to mar-  
keting and content delivery on the web. His  
expertise: developing E-products and meth-  
ods that market well in this new arena, and  
aiding companies who are facing the transi-  
tion from traditional marketing methods to  
online methods. Being a public speaker for  
over a decade and having a background in  
the visual and audio arts, add to John's abil-  
ity to clearly convey this hot and sometimes  
confusing topic of marketing online.

Date: Thursday, January 19, 2006

Times: Networking - Cash Bar, Hors  
d'Oeuvres 5:30 PM  
Dinner - Attendee Introductions  
6:30 PM  
Presentation 7:15 PM  
Q&A - Networking - Dessert  
8:00 PM

Place: Holiday Inn, North Frontage Rd.  
Newark, NJ  
On north side of Newark Airport

Advance Registration is required.

Reserve electronically at our web site:  
<http://NJChemBus.org>.

Reserve by: January 17, 2006. Please  
reserve early.

Cancellation Policy: Please cancel 48 hours  
before the meeting, or be invoiced.

Check payable to, and Mail Payment to: NJ  
Group of Small Chemical Businesses, P.O.  
Box 423, Summit, NJ 07902.



## NORTH JERSEY ELECTION RESULTS

### Chair-elect - 2006

Krone	391
Goodnow	357

### Councilors 2006-2008

Kuck	427
Cooper	421
Kelly	347
Waller	313
Erickson	304

### Alternate Councilors 2006-2008

Suits	296
Gorman	289
Penna	270
Noether	263
Potenza	258



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## CHEMISTRY AS A LIFE SCIENCE SYMPOSIUM XIII

Friday the 17th of March, 2006

The thirteenth in this series of biennial symposia will be held at:

**The Paul Robeson Campus Center  
Rutgers, The State University  
Newark, New Jersey**

**Distinguished Speakers:**  
**Robert H. Grubbs\***,  
*California Institute of Technology*

**Amir H. Hoveyda**,  
*Boston College*

**Madeleine M. Joullié**,  
*University of Pennsylvania*

**Koji Nakanishi**,  
*Columbia University*

**Matthew D. Shair**,  
*Harvard University*

**F. Dean Toste**,  
*University of California at Berkeley*

\***Congratulations to the 2005 Nobel Laureates in Chemistry:**  
**Yves Chauvin, Robert H. Grubbs, Richard R. Schrock**

This symposium is free and open to the public. Further information regarding the symposium is available on the website for the North New Jersey Section of the American Chemical Society. Due to limited seating, advance registration is required using a form located on the website.

<http://njacs.org/caals2006.html>

## New York Meetings

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

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

#### Using Global Scenarios for Strategic Long-Term Planning

**Speaker:** Andrew J. Slaughter  
Senior North American Energy  
Advisor - Global Business  
Environment  
Shell Exploration & Production Co.  
Houston, TX

**Date:** Thursday, January 12, 2006

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

**Place:** The Chemists' Club  
40 West 45th Street  
New York, NY

**Fees:** \$40 discount price for Members  
who reserve by **Tuesday, January  
10th** (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/>



### HIGH SCHOOL TEACHERS TOPICAL GROUP

#### Macromolecular Chemistry for Safe and Sustainable World

**Speaker:** Kalle Levon  
Polytechnic University

The presentation will discuss the important role of macromolecular chemistry for the development of sensors and sensor networks for security and for the preparation of tools for health diagnostics.

**Date:** Friday, January 20, 2006

**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.



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


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ANALYSIS FOR THE CHEMICAL ELEMENTS

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

**Neurophysiological Anomalies in Schizophrenia: Potential Drug Targets or Biomarkers?**

**Organizers:** Mihaly Hajos  
Pfizer Global R & D

and

Clay Scott  
AstraZeneca

**Speakers:** Kevin Spencer  
Harvard Medical School  
Georg Winterer  
Heinrich-Heine University  
Düsseldorf  
Gunvant Thaker  
Maryland Psychiatric Research  
Center

and

Daniel Javitt  
New York University  
School of Medicine

**Date:** Tuesday, January 24, 2006

**Time:** 1:00 – 5:15 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 x 322.

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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>



**NEW YORK SECTION BOARD OF DIRECTORS MEETINGS FOR 2006**

The ACS New York Section's Board of Directors Meetings for 2006 will be held at St. Joseph's College, Brooklyn, NY on the following dates.

February 10  
April 28  
June 9  
September 22  
November 10

The Board of Directors Meetings are open meetings. If you would like to attend please notify the New York section office at 516-883-7510 or [njesper1@optonline.net](mailto:njesper1@optonline.net)

Other important New York Section meetings in 2006 are:

The Section-wide Conference on **January 21, 2006** at Pace University, Pleasantville, NY.

The William H. Nichols Symposium and Medal Award Dinner on **March 10, 2006** at the Crowne Plaza Hotel, White Plains, NY – honoring Professor Barry Sharpless.

The programs for both of these events appear in this issue.

Directions and further details can be found on the New York Section website at [www.newyorkacs.org](http://www.newyorkacs.org)

**TENTH ANNUAL FRANCES S. STERRETT ENVIRONMENTAL CHEMISTRY SYMPOSIUM**

**NPS Pollution — What's in Your Sump?**

**Date:** Thursday, May 25, 2006

**Place:** Hofstra University  
Hempstead, NY

Save The Date!



**ACS SPONSORED HIGH SCHOOL CHEMISTRY CLUBS**

In the Fall of 2005, the Education Division initiated a pilot program for ACS affiliated high school chemistry clubs across the US. ACS staff contacted interested teachers, produced a handbook, identified interesting and appropriate club activities, and established contacts with membership programs. Staff plans to set up a Web page for posting resources and encouraging communication among clubs. As funds permit, logo-bearing banners and pins will add to the starter package.

Supporting and establishing ACS high school chemistry clubs is an attractive idea that has been under discussion for several years. A survey sent out to high school teacher members—several of whom already sponsor clubs—confirmed support for such a program. A self-selected group of these teachers signed on for the 2005-06 pilot program and received assistance from the Office of High School Education in launching their chemistry clubs. Additionally, these teachers were encouraged to contact their local ACS sections and nearby ACS Student Affiliate Chapters to initiate joint activities and acquire member support.

The HS Clubs program is designed as a member benefit for high school teacher members. In order to be an ACS high school chemistry club advisor, the teacher must be affiliated with ACS at some level—including national, divisional, and/or local section affiliate.

Local ACS sections are encouraged to be proactive in this pilot phase of the project. Any section wishing to initiate a partnership with an area high school to establish an affiliated club is welcome to move forward with the plan. Education Division staff is collecting contact information for the 2006-2007 academic year. In exchange for certain charter-initiating documents, schools will receive ACS resources and support. Please email staff at [education@acs.org](mailto:education@acs.org) with questions, plans and/or suggestions.

Initial support for the clubs may include the following:

- A tabbed binder and CD with detailed start-up materials for establishing a club
- A sample constitution and bylaws
- A charter application
- A collection of safety-reviewed activities (Some of these will support various established ACS programs like National Chemistry Week, Chemagination, Kids & Chemistry, U.S. National Chemistry Olympiad, Chemists Celebrate Earth Day, and Green Chemistry.)
- Career information
- Information on ACS Accredited Colleges and Universities
- A Website
- Logo imprinted items (pins, banners, perhaps t-shirts and other items)
- Contact information for Local Sections and Student Affiliate groups
- Community Service Project ideas

The New York Section is interested in knowing the moderators and schools where the ACS HS Chemistry Clubs are initiated. We would like to acknowledge these members. Please send information or questions to [JLaredoLiddell@aol.com](mailto:JLaredoLiddell@aol.com). I am a member of the ACS SOCED Committee.

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

In honor of Professor K. Barry Sharpless  
The Scripps Research Institute

**Topic:** Keeping It Simple: Click Chemistry in Action

**Date:** March 10, 2006

**Place:** Crown Plaza Hotel, White Plains, NY

1:30 PM Welcome

Professor Jill K. Rehmann  
2006 Chair, ACS New York Section  
St. Joseph's College

1:35 PM Opening of the Distinguished Symposium

Mrs. Joan A. Laredo-Liddell  
2006 Chair-Elect, ACS New York Section  
Marymount College of Fordham University

1:45 PM Dipolar Cycloadditions:  
Old Dogs, New Tricks

Professor Valery V. Fokin  
The Scripps Research Institute

Despite of the high energy content, organic azides and alkynes are chemically orthogonal to an unusually broad range of reagents, solvents, and other functional groups. Although their thermal cycloaddition reaction is exceedingly slow due to the high energy of activation (ca. 24-26 kcal/mol), their reactivity towards each other can be revealed by means of an appropriate catalyst. For example, copper(I) results in the formation of the 1,4-disubstituted 1,2,3-triazoles, while ruthenium(II) catalyzes formation of the complementary 1,5-regioisomers. Catalytic azide-alkyne cycloadditions are now among the most efficient ways to permanently unite diverse structures by means of the triazole connections -- permanent chemically inert links that bring together blocks with desired functionality.

Representative examples from our laboratories, as well as important mechanistic aspects of these processes and their implications for the design of other catalytic systems will be discussed in the lecture.

2:30 PM Towards Bioactive CyClick Peptides.

Professor Jan H. van Maarseveen  
University of Amsterdam

Small cyclic peptides have been isolated from several species and often they show potent bioactivities. Further exploration is, however, hampered by the difficult synthetic accessibility. It turned out that replacement of one or more backbone amide bonds in small cyclic peptides by 1,4-substituted triazole units greatly improves the synthesis. In addition, it turned out that both electronically and sterically 1,4-substituted triazoles are perfect trans amide isosteres. CyClick analogs will be discussed of the natural cyclic tetrapeptide c[Pro-Val-Pro-Tyr], a tyrosinase inhibitor that cannot be cyclized using traditional lactamization methods.

3:15 PM Coffee Break

3:45 PM Using Organic Chemistry to Control the Properties of Nanoscopically Defined Materials: From Microprocessors to Hydrogels.

Professor Craig J. Hawker  
University of California, Santa Barbara

In designing polymeric materials for use in nanotechnology it rapidly becomes apparent that control over all aspects of polymer structure (molecular weight, polydispersity, number and position of functional groups, architecture, etc.) is required if these materials are to be used successfully to create nanostructures in the sub-50 nm size regime. Equally important to the rapid introduction and incorporation of these materials into devices is the development of robust and simple techniques for their synthesis. This last feature will allow a wide range of materials to be prepared efficiently while also permitting non-experts to prepare well-defined materials. The development of facile chemistry for the design and application of materials in advanced storage devices and microelectronics for the information technology industry will be discussed. Further examples will demonstrate that these new synthetic techniques may also have application in other areas such as bio-sensors, DNA chips, delivery devices and high modulus hydrogels.

4:30 PM How Much Reactivity Does a Chemist Need?

Professor K. Barry Sharpless  
The Scripps Research Institute

I have borrowed my title from Leo Tolstoy's famous short story How Much Land Does a Man Need? The original is a morality tale writ large, a short story about a man who, in his lust for land, forfeits everything, including his own life. However, though I read it some 50 years ago, it has stuck as a vivid memory and a meaningful icon.

My lecture will consider the chemists' love affair with reactivity. How much more 'new reactivity' we think we need, and how by seeing the known in new light we might find creating new properties and functions much easier than we had ever imagined possible, and how chemical orthogonality can enable us to create "Trojan Horse" molecules using Nature's own biochemical tools without Her ever noticing.

5:30 PM Closing of the Distinguished Symposium

## NEW YORK SECTION IN PICTURES



The High School Teachers Topical Group of the NY Section presented at the Annual Conference of the Science Teachers Association of New York State. Ivi Tamm's pumpkin experiment at work.

The HSTTG members who presented: (left to right) Joan Laredo-Liddell, Jean Delfiner, Ivi Tamm and Abby Kurnit.



Jean Delfiner (l) and Joan Laredo-Liddell (r) present Craig Zoltowski, Manager, Biersdorf, Inc., a certificate of appreciation for his presentation, "Emulsion Chemistry & Chemical Engineering: Application to the Consumer Product Industry." Joseph Sencen, Westchestr director, is at the far left.

NY Section National Chemistry Week was celebrated at the NY Hall of Science. Children admire their chromatography Christmas trees. The activity was conducted by the Student Affiliate Group of Manhattan College.







November 17, 2005  
Volume 4, Number 11

## TRAINED WASPS MAY BE USED TO DETECT BOMBS, BUGS, BODIES AND MORE

Contact: Michael Bernstein  
202-872-4400  
m\_bernstein@acs.org

An unusual device that uses trained wasps, rather than trained dogs, to detect specific chemical odors could one day be used to find hidden explosives, plant diseases, illegal drugs, cancer and even buried bodies, according to a joint study by researchers at the University of Georgia and U.S. Department of Agriculture.

The trained wasps are contained in a cup-sized device, called a "Wasp Hound," that is

capable of sounding an alarm or triggering a visual signal, such as a flashing light, when the insects encounter a target odor. The sensor is cheaper to use than trained dogs and more sensitive than some sophisticated chemical detection methods, including electronic noses, the researchers say. Their experimental device is described in a study slated to be published in the Jan.-Feb. issue of *Biotechnology Progress*, a joint publication of the American Chemical Society and the American Institute of Chemical Engineers.

The idea of using unconventional biological sensors to detect target odors is not new, according to study leaders Glen C. Rains, Ph.D., a biological engineer with the University of Georgia in Tifton, Ga., and W. Joe Lewis, Ph.D., a research entomologist with the USDA's Agricultural Research Service, also in Tifton. Rats, honeybees, fish and even yeasts have all been used experimentally to detect various explosives or toxins, they say.

"We've now developed a prototype device that puts the idea of using chemical-sensing wasps into a practical framework and its possibilities are astounding," says Rains,

who believes that the device could be ready for commercialization in five to ten years. Like batteries in a smoke detector, the trained wasps won't live forever and will eventually have to be replaced, he says.

In the current study, the researchers used *Microplitis croceipes*, a species of tiny parasitic wasps that can be trained to detect certain odors by associating the odors with a food reward. The wasps are not capable of stinging humans, the scientists say. Training a single wasp to detect a target odor can take as little as five minutes and the insects can be easily bred by the thousands, they say.

The research team developed a special ventilated device, composed of PVC pipe, which holds a small cartridge containing five trained wasps. The wasps were trained to detect 3-octanone, a chemical produced by certain toxic fungi that infect corn and peanut crops. The presence of the fungi can result in costly crop losses.

The Wasp Hound contains a tiny camera that is linked to a computer to record the movement of the wasps. In a controlled test, the device was exposed to batches of dried feed corn containing either the target chemical, myrcene (a compound of neutral interest to the wasps) or corn alone. In comparison to a group of untrained wasps, the trained wasps showed significantly stronger behavioral responses to the target odor than to the myrcene and control treatments. Responses include moving toward the target odor source and congregating around the device's odor inlet. This movement can be translated into an alarm signal to indicate the presence of a toxic plant fungus, the scientists say.

Besides detecting plant diseases, the device has a wide variety of other potential applications. In previous studies, the researchers demonstrated that they also could train the wasps to detect 2,4-dinitrotoluene (2,4-DNT), a chemical used in certain explosives. The wasps can also be used to detect chemical odors that are associated with certain human diseases, including lung cancer, skin cancer and stomach ulcers, they say. More recently, their group has been looking into the possibility of using the wasps to detect odors associated with hidden bodies, from murder victims to victims of disasters.

The other collaborator in this study was student Samuel L. Utley, M.S., currently a

research engineer with the University of Georgia. The study was funded by the university and by the USDA. The researchers have filed a patent application for the Wasp Hound.

## Call for Nominations

### SOCIETY FOR APPLIED SPECTROSCOPY, NEW YORK SECTION

#### Undergraduate and Graduate Student Awards in Applied Spectroscopy

The New York section of the Society for Applied Spectroscopy is pleased to announce the Undergraduate and Graduate Student Awards program for Academic Year 2006. The SAS is seeking nominations for its annual Student Awards that recognize excellence in the field of Applied Spectroscopy. The field of Applied Spectroscopy is broadly defined, and includes the use of traditional atomic and molecular spectroscopic techniques as well as the use of spectroscopic detectors in hyphenated instruments, spectroscopic detectors in microscopy, imaging and related fields.

One graduate and up to five undergraduate awards will be presented. Each candidate should be an undergraduate in at least their junior year or a graduate student majoring in science. The graduate awardee will receive a \$500 cash award, a plaque, a one year membership to the SAS, plus an invitation to the student awards dinner. The New York Section Graduate Student Awardee will also be nominated for the National SAS Student Award which will be presented at the 28th Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS). Each undergraduate awardee will receive a \$100 cash award, a plaque, a one year membership to the SAS, plus an invitation to the student awards dinner.

Applications should include the following items for evaluation. Documents should be sent electronically if possible:

- A letter of recommendation from his/her research advisor.
- Letters of recommendation from two additional faculty members who are familiar with the quality of the student's work.

(continued on page 18)



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## CALL FOR NOMINATIONS

(continued from page 17)

- c) Transcripts that document all university credits (unofficial transcripts are OK).
- d) A one page summary of the research project written by the student including reference to any of the student's published work, demonstrating applicability of the research to the field of applied spectroscopy.
- e) Telephone numbers, addresses and e-mail addresses of both the student & research advisor.

The deadline for award nominations is **March 1, 2006**. Please submit nominations to:

Dr. Eileen M. Skelly Frame 518-383-0946  
46 Deer Run Hollow 518-373-2770 (FAX)  
Halfmoon, NY 12065 **Skellye@aol.com**



## CHIRALITY MEDAL 2006

The Chirality Medal was instituted by the Societa Chimica Italiana in 1991 to honor internationally recognized scientists who have made a distinguished contribution to all aspects of chirality. Any scientist is invited to submit a nomination for the 2006 Chirality Medalist. **The deadline for nominations is March 1, 2006.** The Medal will be presented at Chirality 2006, the 18th International Symposium on Chirality (ISCD-18) to be held on June 25-28, 2006 in Busan, South Korea (Chirality 2006 web site: [www.chirality2006.org](http://www.chirality2006.org)).

Please email the letter of nomination with supporting documents by March 1 to the Chair of Chirality 2006, Professor Myung Ho Hyun at [mhhyun@pusan.ac.kr](mailto:mhhyun@pusan.ac.kr)

Previous Chirality Medal Winners are as follows:

- 1991 Gil-Av (Israel) and J. Jacques (France)
- 1992 V. Prelog (Switzerland)
- 1993 K. Mislow (USA)
- 1994 W. Pirkle (USA)
- 1995 K. Nakanishi (USA)
- 1996 E. L. Eliel (USA)
- 1997 R. Noyori (Japan)
- 1998 H. Kagan (France)
- 1999 V. Davankov (Russia)
- 2000 B. Sharpless (USA)
- 2001 Y. Okamoto (Japan)
- 2002 D. Seebach (Switzerland)
- 2003 D. Armstrong (USA)
- 2004 V. Schurig (Germany)
- 2005 K. Soai (Japan)

## Retired Chemists

### A POSSIBLE LIE DETECTOR

The aggressive interrogation of detainees to obtain information needed for purposes of national defense is obviously a very sensitive topic. Yet the progress made over the centuries to ascertain whether or not the truth is being told is minuscule. Courts generally will not accept evidence from "lie detectors" based on changes of the electrical conductivity of skin. Similarly "truth drugs" have long been discredited.

There is another possibly fruitful approach. An editorial in the Journal of Chemical Education (1) discussed Functional Magnetic Resonance Imaging which can detect brain activity in relatively small volume elements.

Conscious thinking results in an increase of blood flow in the brain and this is detectable using functional MRI. The purpose of the editorial was concerned with the possible quantitative measurement of learning.

It is possible that MRI could be the basis of valid lie detection. A person who is asked probing questions may have to think harder to give mendacious answers than one who tells the truth. The measurement of this possible difference may require more sensitive MRI scans than are now available and may require an improved time scale of less than the current 30 seconds (2). I suggest research in using functional MRI to ascertain whether the signal can be correlated with veracity of subjects. Preliminary experiments using volunteers who sometimes deliberately lie should make it possible to ascertain whether a) current MRI technology could measure truthfulness, b) whether feasible technological improvements are likely to lead to fruitful results, or c) whether there is no correlation.

#### References

- (1) Moore, J. W., J. Chem. Educ., 2004, vol 81, p 919
- (2) fMRI - About Functional MRI (General). Functional MRI Research Center, Columbia University: <http://www.fmri.org/fmri.htm>

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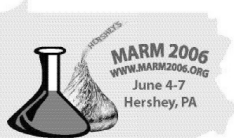
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### MARM 2006: REGISTRATION NOW OPEN

Registration and abstract submission are now open for the 2006 Middle Atlantic Regional Meeting (MARM 2006) of ACS. A program filled with the latest chemical research will be held in the **Conference Center of Hershey Lodge, Hershey, PA, on June 4 to 7, 2006**. Check the meeting website at <http://www.marm2006.org> for regular updates and registration. Abstracts can be submitted at: <http://acs.confex.com/acs/marm06/cfp.cgi>

A brief summary of program items follow:

- \_ A technical chemical program emphasizing Analytical, Food (especially chocolate), Organic, Medical/Pharmacology, Exemplary Plenary Sessions, Burger Symposium, and Copes Scholars Symposium.
- \_ Additional program areas planned are: 100 years of FDA Regulation, Mass Spectrometry, Forensics, Education, Law, Computers, History (esp. Joseph Priestly), Inorganic, Polymers, Bench to Pilot Plant, and Physical.

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- January 27** **Professor M.C. Finn**, Scripps Research Institute  
H: Kirshenbaum *Chemically Tailoring the Form and Function of Virus Particles*
- February 3** **Professor Dennis A. Dougherty**, California Institute of Technology  
Host: Schuster *Chemical-Scale Studies of the Nicotine Receptor*
- February 10** **Dr. Gerhard Hummer**, National Institutes of Health  
H: Tuckerman *Water, Proton, and Ion Transport Through Molecular Pores: From Nanotubes to Biomolecular Machines*
- February 17** **Professor David Tirrell**, California Institute of Technology  
H: Kirshenbaum *TBA*
- March 3** **Professor Aiichiro Nakano**, University of Southern California  
H: Tuckerman *Ultrascale Atomistic Simulations of Nanosystems*
- March 24** **Professor Jacob Schaefer**, Washington University in St. Louis  
H: Jerschow *Structure and Function in Bacteria and Plants by REDOR NMR*
- March 31** **Professor Scott J. Miller**, Boston College  
Host: Arora *Biomimetic Approach to Asymmetric Synthesis*
- April 7** **Professor Anthony W. Czarnik**, University of Nevada at Reno  
Host: Chang *Glucose Monitoring Using Fluorescent Chemosensors: The Dye That Blinds*
- April 14** **Professor Karen L. Wooley**, Washington University in St. Louis  
Host: Arora *TBA*
- April 28** **Professor Sharon Hammes-Schiffer**, Pennsylvania State University  
Host: Y.Zhang *Hydrogen Tunneling and Protein Motion In Enzyme Reactions*

Colloquia will be held on Fridays at 3:30 p.m. in Room 1003 Silver Center.  
Reception to follow.

100 Washington Square East, New York, NY 10003-6688 (212) 998-8400

# STEVENS

## Institute of Technology

Chemistry and Chemical Biology Department  
Hoboken, NJ 07030

### SPRING SEMESTER EVENING GRADUATE COURSES

Classes 6:15-8:45 PM • Semester Begins January 17, 2006

#### *Special Courses*

##### **CELLULAR SIGNAL TRANSDUCTION — Ch 690 (Thurs.)** *New*

The role and mechanism of signal transduction in mammalian cells: transduction pathways, tissue organization, examples of biological processes controlled by specific cellular signal transduction pathways. Implications for stem cell biology, tissue regeneration, human disease.

*Prereq.* — *UG cell & molecular biology.*

Prof. Xu

##### **ADVANCED INSTRUMENTAL ANALYSIS — Ch 660 (Weds.)**

Modern instrumental techniques, theory and practice of spectrometric and electroanalytical methods, Fourier Transform techniques (FTIR, FTNMR, etc.), mass spectrometry, surface analysis methods.

*Prereq.* — *UG instrumental analysis lab.*

Prof. East

#### *Also offered:*

Advanced Physical Chemistry — Ch 520 (Mon.)

Advanced Inorganic Chemistry — Ch 610 (Fri.)

Thermodynamics & Kinetics — Ch 620 (Tues.)

Physical Chemistry of Polymers — Ch 671 (Thurs.)

Biochemistry I — Ch 580 (Tues.)

Biophysical Chemistry — Ch 582 (Thurs.)

Computational Biology — Ch 668 (Mon.)

Immunology — Ch 686 (Tues.)

**For Application:** Graduate School (201) 216-5234

**For Information:** Department (201) 216-5528