



# THE NUCLEUS

September 2006

Vol. LXXXV, No. 1

## Monthly Meeting

*Medicinal Chemistry Symposium,  
Vendor Fair and Career Services*

## Education Night

*May 11, 2006*

## National Chemistry Week Events

## Local Section Websites

*by Don Rickter*





# National Chemistry Week Events

*Celebrating*



**Your Home – It's All Built on Chemistry!!**

**October 22, 2006 – Wellesley College Science Center**

***Phyllis A. Brauner Memorial Lecture by Dr. Bassam Shakhashiri***

Dr. Bassam Shakhashiri is a Professor of Chemistry at the University of Wisconsin-Madison and is the William T. Evjue Distinguished Chair for the Wisconsin Idea. Professor Shakhashiri has captivated audiences with his scientific demonstrations at a variety of locations, including Boston's Museum of Science, the National Academy of Sciences, and the Smithsonian's National Air and Space Museum in Washington.

**Room 277, 11 am – 12 pm and 2 pm – 3 pm**

The Sunday presentations are free and open to the public. Tickets are available on a first come, first serve basis, though reservations are recommended. To reserve tickets, please contact Marilou Cashman either via email [mcash0953@aol.com](mailto:mcash0953@aol.com) (preferred) or by phone 1-800-872-2054 before October 19, 2006. Tickets will be available for pick-up outside of the Science Center on the 22nd. Parking is free. For directions to Wellesley College, please visit <http://www.wellesley.edu/Admin/travel.html>. While at Wellesley, a visit to the arboretum and greenhouses (which are open to the public) is a must.

For more information, visit <http://www.wellesley.edu/FOH/greenhouse.html>.

***Kicking off National Chemistry Week 2006 festivities***

Join us in a variety of hands-on activities related to the yearly theme. Taking place from 10 am – 3:30 pm on October 22, 2006 inside the Wellesley Science Center. For more information, please visit [www.nesacs.org](http://www.nesacs.org).

**October 28, 2006**

**Boston Children's Museum**

NCW volunteers will be on hand to perform demonstrations and assist in hands-on activities related to the yearly theme.

**Museum of Science, Boston**

NCW volunteers will be on hand to perform demonstrations and assist in hands-on activities related to the yearly theme.

**October 22 – 28, 2006**

K-12 students participate in the NCW **poster competition**. Grades 9-12 may participate in the **puzzle contest** as well. See [www.nesacs.org](http://www.nesacs.org) for detailed information.

**The Northeastern Section of the American Chemical Society, Inc.**

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**Cover:** *Dr. Michael Block, AstraZeneca R&D, evening speaker at the September meeting. He will speak on "The Development of Selective Aurora A and B Inhibitors" as part of the symposium on Oncology. (Photo by Lori Perrin.)*

**Deadlines:** *November 2006 Issue: September 15, 2006  
December 2006 Issue: October 13, 2006*

## THE NUCLEUS

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# Northeastern Section- American Chemical Society Vendor Fair

## Call for Nominations

### *Gustavus John Esselen Award for Chemistry in the Public Interest*

The Northeastern Section of the American Chemical Society will hold a vendor fair jointly with the Medicinal Chemistry Symposium on Thursday, September 21, 2006 3-7 pm at the Holiday Inn Select, 15 Middlesex Canal Park Road, Woburn, MA. If your business provides technical products or services for pharmaceutical, medicinal, analytical chemists, biochemists or other related technical disciplines, this is your chance to network with over one hundred qualified prospects. This is a chance to meet face-to-face with existing customers, to generate new business opportunities and to introduce new products and services.

If you are interested in this vendor fair please contact: Marilou Cashman, NESACS Office 1-800-872-2054. mcash0953@aol.com

**Cost: \$400 per 6-foot table**  
(address checks to NESACS).◇

## New Members

### *Invitation to attend a meeting*

You are cordially invited to attend one of our upcoming Section meetings as a guest of the Section at the social hour and dinner preceding the meeting.

Please call Marilou Cashman at 800-872-2054, 508-653-6329 or: Mcash(at)aol.com by noon of the first Thursday of the month, letting her know that you are a new member. ◇

The Northeastern Section (NESACS) is inviting nominations for its prestigious Gustavus John Esselen Award for Chemistry in the Public Interest. This award is given annually to a chemical scientist whose scientific and technical work has contributed to the public well-being and has thereby communicated the positive values of the chemical profession. The significance of this work should have become apparent within the five years preceding nomination. The awardee shall be a living resident of the United States or Canada at the time of the nomination.

There is no limitation to the field of chemistry. The selection committee focuses on the general public recognition of the work, as well as its scientific/technical significance.

The Award consists of a bronze medal and the sum of \$5,000. Travel expenses incidental to the conferring of the award will be reimbursed. The award will be presented at the April 12, 2007 meeting of the Section. The Awardee is expected to deliver an address related to the work for which the honor is conferred.

Nominations shall include the names of two co-sponsors, a biography of the nominee, a description of the work, which has been recognized as communicating the positive values of the chemical profession, along with copies of pertinent articles and popular news and feature articles indicative of public interest. Joint nominations are acceptable. Further information is available at [www.nesaes.org](http://www.nesaes.org).

### **Nominations Due October 15, 2006.**

Award recipients will be notified by February 1, 2007.

### *Nominations shall be directed to:*

*Dr. Robert Langer, c/o Karen Piper  
19 Mill Rd., Harvard, MA 01451.*

*Inquiries may be made to Robert Langer, Tel. (617) 253-3107;*

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## Save the Date!

### *The 5<sup>th</sup> Annual New England Environmental Research Symposium*

**Saturday, November 11, 2006**

**9:00 am – 3:00 pm**

### **Bridgewater State College**

Undergraduate and graduate student research posters in all environmental disciplines are welcome.

*Please email Ed Brush  
([ebush\(at\)bridgew.edu](mailto:ebush(at)bridgew.edu)) to add your  
name to our email distribution list. A  
formal "Call for Abstracts" will be sent  
electronically in mid-September. ◇*

*e-mail: [rlanger\(at\)mit.edu](mailto:rlanger(at)mit.edu)  
or Karen Piper: Tel. (978) 456-8622  
e-mail: [piper28\(at\)attglobal.net](mailto:piper28(at)attglobal.net). ◇*



# Monthly Meeting

*The 871<sup>st</sup> Meeting of the Northeastern Section of the American Chemical Society*

*organized by the Medicinal Chemistry Section of NESACS*

**Symposium: NEW TRENDS IN ONCOLOGY (Part II)**

**Thursday - September 21, 2006**

**Holiday Inn Select Hotel**, 15 Middlesex Canal Park Road, Woburn, MA

2:30:4:30 p.m.: In conjunction with the Symposium: *Career Services Program and Resume Reviews*. Presentations by **Mukund Chorghade**, **Jennifer Sass** and **Megan Driscoll** of Pharmalogics Corporation. Please bring a copy of your CV.

3:00:7:00 p.m.: *NESACS Vendor Fair*

## **Symposium Program:**

2:45 pm Refreshments

3:00 pm Welcome

Raj (SB) Rajur, Program Chair

3:05 pm Introductory Remarks

Norton Peet, North Andover, MA

3:15 pm TBA

4:00 pm TBA

4:45 pm *Toward Improved Topoisomerase I Inhibitor Anticancer Agents*; **Beverly A. Teicher**, PhD, Vice President, Oncology Research, Genzyme Corporation, Framingham, MA.

5:30 pm *Novel Small-Molecule Inhibitors of Oncogenic Protein Kinases: Tackling Selectivity and Resistance*; **Tomi Sawyer**, Senior-Vice President, Drug Discovery, ARIAD Pharmaceuticals, Cambridge, MA.

6:15 pm Social Hour

6:45 pm Dinner

7:45 pm *The Development of Selective Aurora A and B Inhibitors*, **Michael Block**, Director of Chemistry, Cancer Research Center, AstraZeneca R&D, Boston, MA.

Dinner reservations should be made no later than 12:00 noon on Thursday, September 14, 2006. If you prefer to pay at the door, please contact Marilou Cashman at (800) 872-2054 or (508) 653-6329 or mcash0953@aol.com. Reservations not canceled at least 24 hours in advance must be paid. Members, \$28.00; Non-members, \$30.00; Retirees, \$15.00; Students, \$10.00. Anyone who needs handicapped services/transportation, please call a few days in advance so that suitable arrangements can be made.

**Directions to Holiday Inn Hotel** (<http://www.radisson.com/woburnma>)

**A. From Boston - Cambridge - Points North:** Take Route I-93 to Route 95/128 West. After 1 mile, take Exit 35 South to Route 38 (Main Street).

\*After about 500 feet at the traffic light, turn right into Middlesex Canal Street to the hotel entrance.

**B. From the West:** Take Route 95/128 North to Exit 35 South (Route 38 - Main Street. Follow directions from \* above.

THE PUBLIC IS INVITED

## **Beverly Teicher**

### ***Toward Improved Topoisomerase I Inhibitor Anticancer Agents.***

Topoisomerase I is a nuclear enzyme involved in unwinding DNA during replication. The Topo I enzyme binds directly to DNA and produces a single strand-break allowing strand passage and then relegation to restore the duplex DNA. Topo I is essential for cell proliferation but is very difficult to over-express in cells. Camptothecin is a natural product that inhibits Topo I in such a way that the cleaved DNA/enzyme/camptothecin complex forms a stable unit which is called the "cleavable complex," thus trapping the cell with DNA strand breaks, a lethal event. Two camptothecin derivatives, topotecan and irinotecan, are approved anticancer drugs. A limitation of these agents results from pH-sensitive opening of the lactone ring of the camptothecin structure. The ring-opened form of the molecules is toxic to normal tissue but is not an effective Topo I inhibitor. We are exploring the possibility that non-camptothecin Topo I inhibitors can be developed with an improved therapeutic index and increased broad spectrum anticancer activity.

**Beverly A. Teicher** is Vice President of Oncology Research at Genzyme Corporation, Framingham, MA. Upon completion of her Ph.D. in Bioorganic Chemistry at the Johns Hopkins University, Dr. Teicher accepted a postdoctoral position at Yale University School of Medicine. Her postdoctoral training focused on the development of models to study the response of hypoxic cells to anticancer therapies and synthesis of potential hypoxic cell selective cytotoxic agents. Dr. Teicher joined the staff of the Dana-Farber Cancer Institute as an Assistant Professor of Pathology and rose to the rank of Associate Professor of Medicine and Radiation Therapy, Harvard Medical School at the Dana-Farber Cancer Institute and Joint Center for Radiation Therapy. Dr. Teicher pioneered the application of perfluorochemical and hemoglobin oxygen delivery agents in cancer therapy and

*Continued on page 8*

# Inorganic Colloquium at UMass Dartmouth

The 11<sup>th</sup> Boston Regional Inorganic Colloquium (BRIC-11) will be held on Saturday, October 14, 2006 at UMass Dartmouth, North Dartmouth, MA.

Invited speakers are: Ms. Katherine Lovejoy (MIT), Professors Zhifeng Ren (Boston College), Dwight Sweigart (Brown University), and Klaus Theopold (University of Delaware). Registration will be at 9:00 am and talks will run from 9:30 am – 4:15 pm. Lunch will be served at noon. Driving instructions as well as a campus map can be found on the UMass Dartmouth homepage

(<http://www.umassd.edu/directions>)

Individuals interested in attending are asked to please contact [Jgolen\(at\)umassd.edu](mailto:Jgolen(at)umassd.edu) (508-999-8245)

# Local Section Websites

by Don Rickter

Which local section of the American Chemical Society had the first web site? Websites are now a powerful tool for communication by individuals and all kinds of organizations, but they have been around only for a decade or so. My memory is that the Cincinnati Section and the Virginia Blue Ridge Section were among the pioneers. These two were up and running by August 1995. This was at a time in the primitive past when most companies did not have web sites and very few individuals did. The number of websites of local sections doubled by November 1995 with the addition of Ole Miss and NE Oklahoma. There was another doubling, to eight sections, in a few weeks. There were six-

or [Mguo\(at\)umassd.edu](mailto:Mguo(at)umassd.edu) (508-999-8871) before October 4th. The colloquium is sponsored in part by BRIC, EPIX Pharmaceuticals, STREM Chemicals, and UMass Dartmouth ◇

teen by June 1996. Now most of the 189 local sections (and the 33 ACS Divisions) have at least one website each. Their styles vary, but all are useful, valuable resources for communication within our chemical society and related sites.

Our NESACS site was first up on 16 September 1996. We can celebrate its tenth anniversary this month. We are grateful to Arthur Obermayer for his vision, showing what internet presence can do for our members. He and Betty Solbjor created our first website at a time when it was a difficult, pioneering project. There were no templates available. Arthur was aided by a task force chaired by Doris Lewis. Its members included Myke Simon, Don Rickter, and the late Stan Israel. The Board of Publications at that time was chaired by Joe Billo. He was aided by Joe Lima, Doris Lewis, Myke Simon, and the late Arno Heyn.

I found in my archives the content of our first loading of our website. Today it looks primitive — just twelve pages of text like that published in *The Nucleus* — with no pictures or graphics. The officers were listed (with Pat Samuel as Chair and Marty Idelson as Chair-elect). The big event was the October meeting at Regis College, with Dr. James Thackeray of Shipley Company speaking on Photoresists.

All of our Websters, Webmasters, and Web Divas — including Sathish Rangarajan, Samuel P. Kounaves, Rachel Schindler, Frank R. Gorga, Michele Mandrioli, Marietta Schwartz, and, of course, Arthur Obermayer and Betty Solbjor, deserve big thanks from all of us for keeping our website interesting, accurate, and timely.

I thank Prof. Emel Yakali of the University of Cincinnati for sharing the history of the website of the Cincinnati Section. Their March 15, 1995, meeting was the first one to be placed on the website meeting archives. Their newsletter CINTACS

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# Brandeis Chemists Honored

Brandeis University chemists Dagmar Ringe and Greg Petsko received the Abram L. Sachar Award on June 8, 2006. Dagmar Ringe is the Lucille P. Markey Professor of Biochemistry and Chemistry. Greg Petsko is the Gyula and Katica Tauber Professor of Biochemistry and Molecular Pharmacodynamics. The award is presented by the Brandeis University National Women's Committee and honors individuals who have made outstanding contributions to education and to the enhancement of knowledge.

Ringe and Petsko are the first Brandeis faculty members to receive the Sachar Award and Petsko is the first man to be so honored.

Established in 1968, the Sachar Award is the highest honor bestowed by the Brandeis University National Women's Committee. Past recipients include opera director Sarah Caldwell, actress Helen Hayes, medical physicist and Nobel laureate Rosalyn S. Yalow, and former Surgeon General M. Jocelyn Elders. ◇

## Local Section Sites

*Continued from page 6*

came out quarterly at the time. The Spring 1995 issue had a statement by the then chair, Jim Hershberger, that the section already had a website, created by Jeff Nauss. The Virginia Blue Ridge Section home page goes back to 1995. The current webmaster, Gwen Sibert, has records going back to 1998, but we have been unable to document the beginning of the website. ◇



# Conjunction of Phoenixes Dreyfus Foundation Award

By Don Rickter

Has anyone else noticed the conjunction of phoenixes this year? Our national meetings in 2006 are held in two great cities with interesting histories. Atlanta rose from the ashes of war and adopted the phoenix as its symbol in 1888. San Francisco has had a city flag since 1900, which pictures the bird rising from the flames — not of 1906, which was in the future, but of the disastrous fire of 1852.

Of course, we chemists use the phoenix as a symbol of the interconversion of matter and energy, and as the emblem of the American Chemical Society.

### NOTE ADDED:

New Orleans, where we had our 2003 Spring National Meeting, also uses the phoenix as a symbol of its renewal after Katrina. ◇

## to Northeastern Professor

**Penny Beuning**, Assistant Professor of Chemistry & Chemical Biology at Northeastern University has been named as a recipient of the prestigious 2006 Camille and Henry Dreyfus Foundation New Faculty Award. Penny joined Northeastern July 2006 following postdoctoral research with Professor Graham Walker (MIT Biology) and received her doctorate in chemistry from the University of Minnesota in 2000, working with Professor Karen Musier-Forsyth. Professor Beuning's research group is investigating repair pathways linked to DNA polymerase enzymes and uncovering new mechanisms of resistance to DNA damage. Outside of the laboratory, Penny has served as President of the Boston chapter of Graduate Women in Science [GWIS] since 2002. ◇

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## Symposium

Continued from page 5

tumor imaging. Dr. Teicher also elucidated mechanisms by which solid tumors are resistant to antitumor agents, especially antitumor alkylating agents. Dr. Teicher hypothesized that tumors growing in a host would develop drug resistance through mechanisms involving the host and established a model system where drug resistance in a solid tumor was developed *in vivo*. Dr. Teicher went on to incorporate antiangiogenic agents into solid tumor treatment paradigms. In July 1997, Dr. Teicher was appointed Research Advisor in Cancer Drug Discovery at Lilly Research Laboratories. While there she founded and chaired the Tumor Microenvironment Action Group, chaired the Cell Cycle Action Group, and headed the In Vivo Tumor Models Group. Dr. Teicher joined Genzyme Corporation in January 2002. Dr. Teicher is a very active member of the international scientific community. She has authored or co-authored more than 400 scientific publications, has edited seven books, is senior editor for

the journal *Clinical Cancer Research* and is series editor for the *Cancer Drug Discovery and Development* book series.

### **Tomi Sawyer** *Novel Small-Molecule Inhibitors of Oncogenic Protein Kinases: Tackling Selectivity and Resistance*

Oncogenic protein kinases are key therapeutic targets for drug discovery. X-ray crystallographic, biochemical and cellular studies have revealed both structural and mechanistic properties of several oncogenic protein kinases. In an increasing number of cases, resistance to inhibition has been shown to involve critical amino acid mutations in the ATP or proximate binding sites for small-molecule inhibitors. These challenges are being addressed by both chemical biology and drug design strategies. A case example is T315I mutation of Bcr-Abl kinase and drug discovery campaigns focused on the generation, optimization and development of novel small-molecule inhibitors of Bcr-Abl kinase and mutants thereof. The clinical signi-

fance of selectivity and resistance will be discussed in terms of future directions.

**Tomi Sawyer** received a B.Sc. degree in Chemistry at Moorhead State University (now Minnesota State University–Moorhead) and Ph.D. in Organic Chemistry at the University of Arizona. His research has integrated synthetic chemistry, drug design, structural biology, chemoinformatics, biochemistry, cell biology and *in vivo* disease models with a focus on cancer. Tomi's drug discovery track record includes contributions to clinical candidates and/or noteworthy molecular tools for several therapeutic targets, including GPCR receptors (melanocortin), aspartyl proteases (renin and HIV protease), and protein kinases (Src and Abl). He has published more than 200 scientific articles, reviews, commentaries, monographs and books. Tomi is an inventor with more than 50 issued patents and patent filings. He worked at Upjohn Company and Parke-Davis/Warner-Lambert (now both Pfizer Global Research & Development), and is currently Senior Vice President, Drug Discovery, at ARIAD Pharmaceuticals. He is concurrently Adjunct Professor, Chemistry, as well as Biochemistry & Molecular Biology, University of Massachusetts and also Adjunct Professor, Cancer Biology, at University of Massachusetts School of Medicine. Tomi has served on the highlights advisory panel of Nature Reviews Drug Discovery and the editorial advisory boards of Trends in the Pharmacological Sciences, Expert Reviews in Molecular Medicine, Expert Opinion on Investigational Drugs, Journal of Medicinal Chemistry, Chemistry and Biology, Current Medicinal Chemistry (Anti-Cancer Agents), Current Organic Synthesis, Expert Reviews in Molecular Medicine, Expert Opinion on Therapeutic Patents (Oncology), Drug Design and Discovery, Pharmaceutical Research, Molecular Biotechnology, and Biopolymers (Peptide Science). Most recently, he has been appointed Editor-in-Chief, Chemical Biology & Drug Design.

Continued on page 11



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# Interested in starting an ACS-Sponsored High School Chemistry Club?



## **The History**

In the Fall of 2005, the Education Division of the American Chemical Society (ACS), decided to further its role in cultivating interest in chemistry among high school students by piloting ACS-Sponsored High School Chemistry Clubs. Almost 40 self-selected high school teachers from all over the country were accepted as sponsors for the High School Chemistry Clubs pilot program for 2005-2006.

## **The Mission**

*ChemClub invites, motivates, and encourages high school students who are fascinated by the many ways that chemistry connects to their world. Supported by the American Chemical Society, ChemClub provides fun, authentic, and hands-on opportunities for members to:*

- *experience chemistry beyond what is taught in the classroom;*
- *learn about study and career opportunities in the many and varied fields of chemistry;*
- *provide service for the betterment of their communities.*

## **ACS-Support**

The club sponsor and the students are directly in charge of shaping the character and direction of their clubs, as there are many ways to operate a High School Chemistry Club successfully. However, some support can make the establishment and continuation of these clubs an easier process.

Each Club receives a handbook with startup materials that include a charter application, sample bylaws, information about ACS-sponsored activities such as *Chemists Celebrate Earth Day* and *NCW*, ideas for service-learning activities, protocol for inviting speakers, safety documents, and fun laboratory investigations. The materials also include documents that provide tips regarding "How to Organize Your High School Chemistry Club" and "Steps to Establishing Your High School Chemistry Club." The handbook also includes information detailing how a High School Chemistry Club can contact an ACS Local Section or Student Affiliate Chapter at a college or university.

Clubs can expect to receive subsequent packets throughout the school year with additional activities and tips for activities.

## **Interested?**

Contact **Steve Lantos**, Brookline (MA) High School, at <Steve\_Lantos@brookline.k12.ma.us> or the American Chemical Society Education Division at <education@acs.org> for more information and details about joining the 2006-2007 ACS-Sponsored High School Chemistry Clubs program. We look forward to hearing from you soon!

# Book Prizes ACS Northeast Regional Undergraduate Day

*Book Prizes of the Northeastern Section*

By M.S.Simon

## The Phyllis Brauner Memorial Book Prize:

The prize is a memorial to an outstanding member of the Northeastern Section, Dr. Phyllis Brauner. She served in many offices of the Section, in 1974 became the first woman Chair of the Section, and contributed to the activities of the Section with her bold, innovative ideas and practical ways of carrying them out. She taught at Simmons College and Framingham State College and was an inspiring teacher. Her research and education interests are mirrored in the prize, which is given to a student who excels in the undergraduate oral presentation at the Northeast Student Chemistry Research Conference (NSCRC).

The students are judged by the Education Chair and a committee of the Conference judges. A book is chosen by members of the Education

*Saturday, November 4, 2006*

The Fifteenth Annual ACS Northeast Regional Undergraduate Day will be held in celebration of National Chemistry Week (October 22 -28) on **Saturday, November 4**, in the Life Sciences and Engineering Building at Boston University (24 Cummington St., Boston). The keynote speaker will be **Dr. John Essigmann** of MIT, who will speak on "Design of Novel Anticancer

Committee to reflect the broad topic of science. A presentation bookplate inside the cover honors both Dr. Brauner and the awardee. The book is presented at the Conference and the awardee is acknowledged at the May Meeting of the Section.

## The Arno Heyn Memorial Book Prize

The prize is a memorial to Dr. Arno Heyn, a distinguished, long-serving

*continued on page 16*

Agents that Hijack Transcription Factors." A complete program will be published in the October issue of *The Nucleus*. We invite undergraduate students in the region and their advisors to attend.

In addition to research talks, there will be a workshop on hands-on chemistry for children; seminars on graduate school preparation, industrial careers and alternative employment pathways; and a graduate industry fair with résumé review and information about ACS career services. There will be a \$10 registration fee to offset the cost of lunch, which will be provided, and workshop materials.

The event is sponsored by NESACS, and is hosted by the Department of Chemistry and *Chemia*, the ACS Student Affiliates Chapter at B.U.

For more information, contact Matt Vigneau at 617-353-2503; fax: 617-353-6466; mvigneau(at)bu.edu ◇



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## Symposium

Continued from page 8

### Michael Block *The Development of Selective Aurora A and B Inhibitors*

Aurora kinases are viewed as attractive potential targets for anti-cancer therapy. The three human sub-types, Aurora A, B and C, are serine / threonine kinases that are only expressed during mitosis and play a role in chromosome segregation and cytokinesis. Aurora A and B are over-expressed in parallel in multiple tumor types, whereas Aurora C is not. The presentation will outline the identification and optimization of quinazoline based inhibitors that are selective for either Aurora A or Aurora B.

**Michael Block** began his career with a 1<sup>st</sup> class honors degree in Chemistry from the University of Edinburgh in 1982 and then moved to the University of Cambridge to study for his Ph.D. with Professor Alan Battersby, working on the synthesis of Vitamin B<sub>12</sub> biosynthetic precursors. From 1985 to 1987 he held a NATO Postdoctoral Fellowship, working with Professor David Cane at Brown University on synthesis of labeled biosynthetic precursors of the polyether antibiotic Monensin. In 1988 he joined ICI Pharmaceuticals as a medicinal chemist and has remained with the company as it first became Zeneca and then through a merger became AstraZeneca. He has worked in a number of different disease areas, focusing in the early part of his career on cardiovascular and antibacterial therapy, and including two years in process research and development. From 1997 to 2002 he was involved in building research at AstraZeneca in the area of diabetes and obesity. In March 2002 he moved to Boston to help lead the newly established Oncology research group, and formally took up the position of Director of Chemistry for Cancer at the AstraZeneca R&D site in Boston in January 2004.◇

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# Connections To Chemistry 2006

The Northeastern Section of the American Chemical Society (NESACS) and the Education Committee of the Northeastern Section invite high school chemistry teachers to a program at Burlington High School (Burlington, MA) on Wednesday, October 18<sup>th</sup>, 3:30 – 8:00 PM. This program will help connect high school teachers with the numerous education resources that are available from the American Chemical Society. Five workshops will be offered that involve hands-on activities in computer programs for quantum properties that determine molecular behavior, in using probes for data collection and analysis in the laboratory, using engineering in traditional chemical topics, exploring the National Chemistry Week theme *Your Home: It's All Built on Chemistry*, and starting an ACS sponsored high school chemistry club, as a partner with the ACS Student Affiliates Program for college students.

### Program

- 3:30 – 4:00 Registration and Refreshments
- 4:00 – 4:25 Welcome and Overview
- 4:30 – 6:10 Workshops
- 6:15 – 8:00 Dinner and Keynote Address

**The deadline for registration is Friday, October 13<sup>th</sup>.** The registration fee is \$18.00 and is non-refundable after October 11<sup>th</sup>. Workshop and program-related materials, dinner, a one-year subscription to *ChemMatters*, and a certificate for three hours of Professional Development will be provided to all workshop participants.

The detailed program and registration form can be obtained from the NESACS Web site [www.nesacs.org](http://www.nesacs.org) under *Connections to Chemistry 2006*.

For additional information, contact Dr. Ruth Tanner, Chair, Education Committee, NESACS: 978/934-3662 or [Ruth\\_Tanner@uml.edu](mailto:Ruth_Tanner@uml.edu) ◇



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# Education Night, May 11, 2006

## Awards Meeting at Northeastern University

### Forty-Eighth Annual Avery A. Ashdown High School Chemistry Contest

STUDENT	SCHOOL	TEACHER/ADVISOR
First Place-The Simmons College Award		
Erbo Xu	Lexington H. S.	Judith Scott

#### Second Place

Patrick Wu	Acton-Boxborough H.S.	Carol Murphree
------------	-----------------------	----------------

#### Third Place(tie)

Vivek R. Sant	Andover H. S.	Leo Lafond
Michael J. Shu	Andover H.S.	Leo Lafond
Matthew Arsenault	Burlington H.S.	Peter Nassiff

#### Honorable Mention – First Year

Daniel Fudenberg	Lexington H.S.	Jeffrey Shorter
Woosuk Hong	Groton School	Sandra Kelly
James Pelletier	Attleboro H.S.	Catherine Botsford-Milne
Warren Tai	Lexington H.S.	Jim Wood
Janice He	Groton School	Sandra Kelly
Jennifer Schloss	Concord-Carlisle H.S.	Michael Vela
Winston S. Hill	Belmont H.S.	Kathy McGrane

#### Honorable Mention – Second Year

Andrew Feldman	Framingham H.S.	Ronee Krashes
John T. Cheng	Andover H.S.	Leo Lafond
Zara Seibel	Wayland H.S.	Jay Chandler
Jeffrey Yuan	Wayland H.S.	Jay Chandler
Russell Wolf	Wayland H.S.	Jay Chandler
Anandh Swaminathan	Acton-Boxborough H.S.	Carol Murphree
George Hong	Acton-Boxborough H.S.	Carol Murphree

### The Phillip Levins Memorial Prize

Xiaoxuan Shen	University of New Hampshire	Prof. Sterling A. Tomellini, Advisor
---------------	-----------------------------	---

## 2006 Undergraduate Research Scholars

### James Flack Norris and Theodore William Richards Scholars

#### Boston College

Kerry Heinzelmann	Prof. Evan Kantrowitz, Advisor
-------------------	--------------------------------

*Synthesis of New Inhibitors of Dihydroorotase*

#### Harvard College

Chayasith Uttamapinant	Prof. Gregory Verdine, Advisor
------------------------	--------------------------------

*Synthesis of 4'-fluorinated Oligonucleotides and Their  
Use as RNA Glycosylase Inhibitors*

#### Massachusetts Institute of Technology

Jessica Lynch	Prof. Timothy Swager, Advisor
---------------	-------------------------------

*Engineering a Monovalent Avidin with Femtomolar Affinity*

#### University of Massachusetts Dartmouth

Todd Andrade	Prof. Donald W. Boerth, Advisor
--------------	---------------------------------

*DNA adduct formation in plants by interaction with phenoxy  
and carbamate pesticides*

## NESACS Undergraduate Grants-in-Aid

#### Brandeis University

Jessica C. DeMott	Prof. Oleg V. Ozerov, Advisor
-------------------	-------------------------------

*Hypercoordinate Main Group PNP Pincer Complexes*

#### Simmons College

Tania M. Cabrera	Prof. Richard Gurey, Advisor
------------------	------------------------------

*Controlling the size, orientation, density, and nucleation of calcium oxalate  
monohydrate crystals using self-assembled monolayers*

#### Stonehill College

Jessica N. Falco	Prof. Louis J. Liotta, Advisor
------------------	--------------------------------

*The Synthesis of Vinyl Pyrrolidine and Subsequent Synthesis of Polyhydroxy-  
lated Pyrrolidines from Commercially Available Sugars*

#### Stonehill College

James T. Hummel	Prof. Louis J. Liotta, Advisor
-----------------	--------------------------------

*The Synthesis of Vinyl and Polyhydroxylated Pyrrolidines and Subsequent  
Purification using High Performance Liquid Chromatography*

## Dr. Phyllis A. Brauner Memorial Book Award

#### Harvard University

Alisa A. Mueller	Prof. Gregory Verdine, Advisor
------------------	--------------------------------

## Project SEED

#### Boston University

<b>Mentor:</b> Prof. John Snyder	
Chernita Sprinkle	Boston
Rafael Vega-Constabile	Brighton

#### Northeastern University

<b>Mentor:</b> Dr. Patricia A. Mabrouk	
Rui Qiao (Cindy) Guan	Boston
Yingxian (Sammantha) Lu	Dorchester

#### Stonehill College

<b>Mentor:</b> Dr. Cheryl Schnitzer	
Diane Deng	Randolph
Kevin Deane	Brockton
Ryan P. Lake	Brockton
Nathan Joe Macedo	New Bedford
John Sirois	North Easton

## The Theodore Williams Richards Award for Excellence in Teaching

Arthur Giovannangeli, Jr.	Contoocook Valley Regional H.S., Peterborough, NH
Gary Sypteras	Minuteman Regional H.S., Lexington, MA

## Aula Landis Society

Leo Lafond	Andover High School, MA
Cathleen Little	Pinkerton Academy, NH
Kathy Liu	Walnut Hill School, MA
Ralph Sherwood	Chelmsford High School, MA



# Education Awards

photos by Eileen Yue



Alisa Mueller of Harvard University, Winner of the Dr. Phyllis A. Brauner Memorial Book Award with Susan Brauner, sister of Phyllis Brauner.



Gary Sypteras of Minuteman Regional High School, Lexington, MA, recipient of the Theodore William Richards Award for Secondary School Teaching, with Dr. Tim Rose, Brandeis University, member of the T. W. Richards Award Committee.



Left to right, Wally Gleekman, retired Brookline HS, Chair of T. W. Richards Award Committee, Chris Doona, Army Materials Laboratory, Natick, member T. W. Richards Award Committee, and Arthur Giovannangeli, Jr., from Contoocook Valley Regional High School, Peterborough, NH, recipient of the Theodore William Richards Award for Secondary School Teaching.



Left to right, new inductees into the Aula Landis Society, Cathleen Little of Pinkerton Academy, NH; Kathy Liu, Walnut Hill School, MA; Vivek R. Sant receiving the award for Leo Lafond, Andover High School, MA; and Ralph Sherwood, Chelmsford High School, MA.

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## Book Prizes

Continued from page 10

member of the Northeastern Section. Arno occupied most of the offices of the Section at various times, but his most lasting contributions were made when he was the Editor of *the NUCLEUS of the Northeastern Section*. Under his guidance this publication became the outstanding newsletter among all those published by Sections of the American Chemical Society.

The prize is awarded annually to a person or persons deemed to have made the most important contribution(s) to publications of the Northeastern Section. The awardee is chosen by the Arno Heyn Book Prize Committee which is chaired by the Chair of the Publications Committee. Other Committee members include the Editor of the Nucleus, two members of the Board of Directors appointed by the Section Chair, the Chair of the Awards Committee and the Section Chair, ex officio. The prize is a book selected by the awardee, who is asked to choose a book that will have long time meaning and value to her/him. A bookplate mounted inside the book cover honors both the award recipient and the memory of Dr. Heyn. Presentation of the award(s) takes place at the November meeting of the Section. ◇

## Calendar

Check the NESACS Homepage for late additions:  
<http://www.NESACS.org>

Note also the Chemistry Department web pages for travel directions and updates.

These include:

<http://chemserv.bc.edu/seminar.html>  
<http://www.bu.edu/chemistry/events/>  
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<http://www.unh.edu/chemistry/seminars.html>

### SEP 7

Dr. Jianshu Cao (MIT)  
"Statistical Analysis of Single Molecule Measurements"  
Boston College, Merkert 130 4:00PM

### SEP 13

Dr. James Golen (Univ. of Mass., Dartmouth)  
"So, You Want a Job"  
U. Mass Dartmouth, Building Group II, Rm 115  
4:00 PM

### SEP 14

Dr. Christopher Murray (IBM, T. J. Watson Research Center)  
"Preparation and Properties of Multicomponent Nanocrystal Superlattices: Building with Artificial Atoms."  
Boston College, Merkert 130 4:00PM

### SEP 20

Dr. Jeff Salisbury, Mayo Clinic,  
"Centrin-based Regulation of Centriole Duplication"

U. Mass Dartmouth, Building Group II, Rom 115  
4:00 PM

### SEP 21

Dr. Norbert Scherer (Univ. of Chicago)  
Title: TBA  
Boston College, Merkert 130 4:00PM  
Prof. Eugene Barry (Univ. of Mass, Lowell)  
"The Capillary Column in Gas Chromatography: It Keeps Getting Better"  
Univ. of New Hampshire, Iddles Auditorium, Rm. L103 11:10AM

### SEP 19

Dr. Colin Nuckolls (Columbia University)  
Title: TBA  
Boston College, Merkert 130 4:00PM

### SEP 26

Dr. Nicola Pohl (Iowa State University)  
Title: TBA  
Boston College, Merkert 130 4:00PM

### SEP 27

Dr. Gary Weisman, Univ. of New Hampshire, Durham,  
"Cross-Bridged Tetraamine Ligands: Synthesis, Coordination Chemistry, and Biomedical Utility"  
U. Mass Dartmouth, Building Group II, Rm 115  
4:00 PM

### SEP 28

Dr. Nicola Pohl (Iowa State University)  
Title: TBA  
Boston College, Merkert 130 4:00PM

Prof. Roger Giese (Northeastern Univ.)  
"Measurement and Meaning of DNA Adducts"  
Univ. of New Hampshire, Iddles Auditorium, RM L103 11:10 AM

### Notices for the Nucleus Calendar should be sent to:

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