

# THE NUCLEUS

October 2009

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## Monthly Meeting

*Henry A. Hill Award to E. Joseph Billo  
Alexis Borisy to speak*

## Women Chemists In Industry

*By Mindy Levine*

## 2009 Buyer's Guide

## National Chemistry Week Puzzles

*By Chris Morse and Lance Nathan*



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**Cover:** Pictured is the NESACS contingent who attended the Summerthing event at Tanglewood on August 2, 2009 hosted by Bob Lichter and Diane Scott-Lichter. Left-to-right on the Tanglewood lawn: Amie Shaw, Judy Wright, Tony Wright, Bob Lichter, Diane Scott-Lichter, James Phillips, Dorothy Phillips. Foreground, Ethan and Owen Shaw. Photo by Mike Shaw

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# Women Chemists in Industry

By Mindy Levine

When Dr. Mary Mahaney was a chemistry graduate student in Germany in the 1970s, she needed liquid nitrogen to run her experiments. Mary requested to be trained on the equipment for liquid nitrogen. Unfortunately, her request was denied because, as the liquid nitrogen technician told her, "You are a woman." Instead, every time Mary needed liquid nitrogen, the technician collected it for her. Eventually, when Mary was running an experiment over a long holiday weekend that required liquid nitrogen, the technician relented and taught her how to use the machine herself.

Approximately 30 years later, Dr. Mahaney is now the manager of the analytical chemistry group at Haartz Corporation in Acton, Massachusetts, where she has worked for the previous ten years. Dr. Mahaney acknowledged that the situation for women has changed drastically during the course

of her career. "I've seen such big strides," Dr. Mahaney said. "Now women expect to be treated fairly."

## Discrimination?

For the most part, women in the chemistry industry in the greater Boston area confirmed that they are, in fact, treated fairly. Dr. Katherine Lee, a research scientist at Wyeth Company, went one step further. "It can be an advantage," Dr. Lee said. "When you go to meetings and conferences, you are more visible. People remember you." Nonetheless, several women said that they had experienced subtle discrimination during their careers. In particular, after a woman returns from maternity leave, colleagues may question whether she is still as committed to her job as she was before the leave.

## Career choices

Many women chose to pursue a career in industry because they thought

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that industry would be more family friendly than other career paths such as academia. Dr. Sandy Gould of Millenium Pharmaceuticals said, "One of the things that put me off from academics is the lack of role models for women who have careers, who have families, who are balanced." Furthermore, the time when female professors are working towards tenure often overlaps with when they might want to start a family. Women who work in industry are better able to find a good balance between career and family.

Conversely, there are women who choose their career paths for reasons that are unrelated to being female. For example, after Dr. Dana Buske finished her Ph.D. in organic chemistry at MIT, she joined an environmental engineering firm. "I didn't really like lab work," Dr. Buske said, "but I liked the process of doing research and writing papers." Although she is not directly using her organic chemistry knowledge in her current job, Dr.

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# Monthly Meeting

*The 899<sup>th</sup> Meeting of the Northeastern Section of the American Chemical Society*

**Henry Hill Award, Presentation and Recognition of the 50-year members**

**Thursday, October 15, 2009**

**Royal Sonesta Hotel**

40 Edwin Land Boulevard, Cambridge, MA, 617-806-4200

**4:30 pm** Board Meeting

**5:30 pm** Social Hour

**6:15 pm** Dinner

**7:15 pm** Presentation of 50-Year Members

**7:30 pm** Award Meeting, Dr. E. Joseph Billo, NESACS Chair, Presiding  
Henry A. Hill Award for Outstanding Service to the Northeastern Section presented by Dorothy J. Phillips to E. Joseph Billo  
Evening Lecture: Alexis Borisy  
Title: "Pursuing Scientific Vision as an Entrepreneur"

Dinner reservations should be made no later than noon, Thursday, October 8, 2009. Please call or fax Marilou Cashman at (800) 872-2054 or e-mail at MCash0953(at)aoil.com. Reservations not cancelled at least 24 hours in advance must be paid. Members, \$30.00; Non-members, \$35; Retirees, \$20; Students, \$10.

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Directions to Royal Sonesta Hotel:

<http://www.sonesta.com/Boston/index.cfm?fa=gettinghere.home>

From the West via the Massachusetts Turnpike (I-90 Toll Road): While Eastbound, make left turn to Exit 18 following signs to Brighton-Cambridge; stay in the right lane following signs to Cambridge-Somerville; cross over the Charles River on the River Street Bridge (Cambridge Street) and turn right at the traffic light onto Memorial Drive (Route #3). Follow Memorial Drive East (Route #3 South) using the "cars only" option twice, then stay in the extreme right lane, along the Charles River, as Memorial Drive will become Edwin Land Boulevard. The hotel is on the right at the second traffic signal, directly across from the CambridgeSide Galleria.

# Call for Abstracts!

*8th Annual New England Undergraduate Environmental Research Symposium*

**Saturday, November 14, 2009**

**9:00 AM – 3:00 PM**

**Bridgewater State College**

Undergraduate research posters (including completed, in progress, and proposed research) in all environmental disciplines are welcome. Abstract

submission is open to all undergraduate students at <http://www.bridgew.edu/Environmental>

*Abstract submission deadline is Monday, November 2.*

*Please email questions to Ed Brush ([ebrush@bridgew.edu](mailto:ebrush@bridgew.edu))* ♦

# Biography



Alexis Borisy is a successful biotechnology entrepreneur, founding CombinatoRx in 2000, serving as its CEO, and bringing the company public on the NASDAQ in an IPO. He has raised \$750 million in financing and business development deals, and has authored numerous scientific papers and patents. Trained in chemistry and chemical biology at Harvard where he was a Howard Hughes Predoctoral Fellow, Borisy was honored as the MIT Technology Review Innovator of the Year. He was also chosen as the New England Entrepreneur of the Year in Life Sciences and was honored as a Presidential Scholar. Alexis bridged from research science to science business as a strategy consultant, working with senior executives at pharmaceutical and biotech companies in the areas of corporate strategy, portfolio management, and discovery technology. Borisy's undergraduate degree in chemistry is from the University of Chicago, and he did his graduate work in the laboratory of Dr. Stuart Schreiber at Harvard University. Borisy serves on the Board of the Biotechnology Industry Organization, the Boston Museum of Science, and is the Chairman of Forma Therapeutics. He is currently in the process of launching a new venture. ♦

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in the Boston area?**

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# Summerthing At Tanglewood

## 2009 Lyman C. Newell Grants

Rainy weather could not dampen the spirits of the small but enthusiastic group of participants in NESACS's first annual "SummerThing at Tanglewood" on Sunday, August 2, 2009. Assembling at the home of Bob Lichter and Diane Scott-Lichter in the bucolic Southern Berkshire County town of Alford, Mass. (pop. 507), were Dorothy and James Phillips; Tony and Judy Wright; the Wrights' daughter and son-in-law, Amie and Mike Shaw; and their two sons, Owen and Ethan Shaw. The planned picnic on the Tanglewood lawn instead took place—with no loss of appetite—in Bob and Diane's dining room. Energized by the extraordinary array of delicious food and wine, we departed on the 30-minute drive to Tanglewood. The route passed through the Alford town center (three buildings); by The Guthrie Center at Trinity Church in Great Barrington, where the story of Arlo Guthrie's "Alice's Restaurant" was filmed more than 30 years ago; along the winding Housatonic River; past an overlook to the Stockbridge Bowl; and finally into the Tanglewood parking lot. Those with lawn tickets took advantage of Tanglewood's rainy-day exchange policy for available Shed tickets. Remaining dry and relatively warm in the Shed, we heard an exciting Boston Symphony Orchestra performance of music by Beethoven and Rachmaninoff. Following the performance, some repaired to the Lichters for tea and dessert before returning home, artistically and gastronomically satisfied. All agreed that this was an excellent first experiment and should be continued.

Robert L. Lichter ◊



The Northeastern Section of the American Chemical Society has awarded four Lyman C. Newell Grants to four area high school chemistry teachers to attend the International ChemEd 2009 Conference in Radford, Virginia August 2—6, 2009. The grants are cash awards of \$225.00 to partially cover the cost of the conference. They were awarded to the following high school teachers:

**Richard Boucher** at King Philip Regional High School in Wrentham, MA

**Katherine Fogary** at Boston Latin Academy in Dorchester, MA

**Ann Lambert** at King Philip Regional High School in Wrentham, MA

**Richard Moran** at Canton High School in Canton, MA

The five-day conference provided the teachers with an opportunity to hear about the latest classroom innovations, to participate in hands-on workshops, to share classroom experiences on how to engage students in chemistry and to attend presentations by outstanding educators. The grants were awarded in consultation with the New England Association of Chemistry Teachers (NEACT).

The Lyman C. Newell Grants commemorate a former chair of the Northeastern Section who was a distinguished chemist, teacher, and historian of chemistry. For many years he was chair of the Chemistry Department at Boston University. Lyman Newell served as the first president of NEACT from 1889 to 1900 and expressed a continuing interest in training chemistry students throughout his long career. His efforts are celebrated by the grants that bear his name. ◊

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- Close around January 31, 2010

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or write to <[ireu@acs.org](mailto:ireu@acs.org)> ◊

# 5<sup>th</sup> Annual NESACS Golf Tournament

The fifth annual NESACS golf tournament was held on July 14, 2009 at Wedgewood Pines Country Club in Stow, MA ([www.wedgewoodpines.com](http://www.wedgewoodpines.com)). It was a perfect day for golf, partly sunny with moderate temperatures. This year a total of 89 golfers participated in a shot-gun scramble. This was the largest turnout to date. The scramble format allows players of all levels to participate. This annual event is a great venue for networking and there are players who have attended all five tournaments. The tournament began at 1 PM and was followed by a dinner and awards ceremony. Photos from the tournament are posted at [www.nesacs.org](http://www.nesacs.org).

First, second, and third place prizes (Wedgewood Pines pro shop gift certificates) were awarded to the teams with the lowest overall scores. The first place team, with a score of 58, was the Genzyme team of John Green, Bennett Green, Dominic Cammarata, and Henry Darnell. The second place team, with a score of 61, was Amy Tap-

per (FerroKin BioSciences), Geoffrey Tapper, Harry Mandeville, and Henry Smith. The third place team with a score of 63, was Ryan White (Amgen), Doug Saffron (Amgen), Joe Kim (Amgen), and David Miller (Vertex). In addition to the team prizes, pro shop gift certificates were given for the longest drive and the closest to the pin. The longest drive (tee shot must land in the fairway) was on the 15<sup>th</sup> hole. This year the winner was Damon Abernathy (Lyophilization Services of NE). The closest to the pin was on the par 3, 5<sup>th</sup> hole. The winner was Dominic Cammarata (Genzyme).

Most importantly, NESACS would like to acknowledge all of our sponsors for their generous contributions: AMRI, Cambridge Major Laboratories, Lyophilization Service of NE (LSNE), IRIX Pharmaceuticals, Vertex Pharmaceuticals, Girindus, and Aptuit. Albemarle and PCI Synthesis provided gifts with their company logo.

Industrial contributions to the Northeastern Section help our section to



Second place: (L to R) Harry Mandeville, Amy Tapper (Ferrokin BioSciences), Geoff Tapper, Henry Smith

be one of the most active sections of the American Chemical Society. To view the products and services that are available from our sponsors, please visit the NESACS website (<http://www.nesacs.org/sponsors.html>).

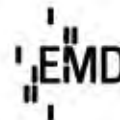
We look forward to another successful tournament in 2010. Information will be posted on the NESACS website in early Spring 2010. ◇

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# National Chemistry Week Events

Celebrating

Chemistry – It's Elemental! – October 18 - 24, 2009

## October 18, 2009 – Museum of Science Boston

- *Phyllis A. Brauner Memorial Lecture by Dr. Bassam Shakhshiri*

Dr. Bassam Shakhshiri is a Professor of Chemistry at the University of Wisconsin-Madison and is the William T. Evjue Distinguished Chair for the Wisconsin Idea. Professor Shakhshiri 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.

Taking place in Cabners Theatre (2<sup>nd</sup> floor, Blue Wing) at 1:00 pm and 4:00 pm.

\* Admission to the museum is required for the 1 pm show but not the 4 pm show if entering the Museum after 3:30 pm. Free tickets to Dr. Shakhshiri's show will be available on a first come, first serve basis. Tickets are available via advance reservation. 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 14, 2009. Tickets will be available for pick-up in the lobby of the museum at the ACS table.

- *Kicking off National Chemistry Week 2009 festivities*

Join us in a variety of hands-on activities related to the yearly theme. Taking place from 1:00 pm - 5:00 pm on October 18, 2009 throughout the Museum.

## October 24, 2009 – Boston Children's Museum

From 11 am – 4 pm. NCW volunteers will be on hand throughout the museum to perform demonstrations and assist in hands-on activities related to the yearly theme.

## September 1 – October 15, 2009

K-12 students participate in the **NCW poster competition**. Visit [www.nesacs.org](http://www.nesacs.org) and [http://portal.acs.org/portal/acs/corg/content?nfpb=true&pageLabel=PP\\_ARTICLEMAIN&node\\_id=1055&use\\_sec=false](http://portal.acs.org/portal/acs/corg/content?nfpb=true&pageLabel=PP_ARTICLEMAIN&node_id=1055&use_sec=false) for more information.

## October 1 – 31, 2009

Grades 1-12 may participate in the **puzzle contest**. See [www.nesacs.org](http://www.nesacs.org) or this issue of the Nucleus for the puzzles and contest information.



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For additional details, please contact any member of the Symposium's Organizing Committee.

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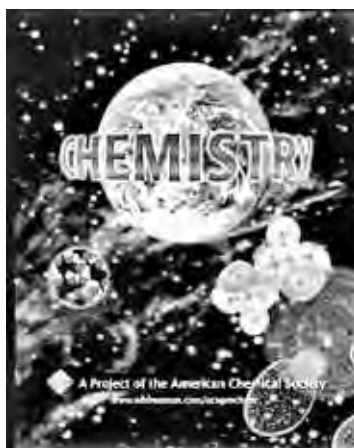
# The Termination of the ACS General Chemistry Project: A Chronology

Morton B. Hoffman, Boston University <hoffman@bu.edu>

Member, GenChem Advisory Board; Member, GenChem Editorial Review Panel; Member, Society Committee on Education; Councilor, Northeastern Section

In **2004**, the general chemistry textbook, *Chemistry: A Project of the American Chemical Society*, was published by W.H. Freeman and Company. The book, which was written by a team led by Jerry Bell (ACS Education Division), had been class-tested over four years through its preliminary meta versions, during which time revisions had been made and supplemental materials developed. The published text combined cooperative learning strategies and active learning techniques with coverage of all the traditional general chemistry topics; the supplemental material included a powerful web companion to help students visualize the atomic and molecular world and an extensive Faculty Resource and Organizational Guide (FROG) for instructors. The textbook and its supplements were reviewed very favorably by Kimberlee Faison (Belmont University) [*J. Chem. Educ.*, **81**, 1572 (2004)] and by Jeffrey Kovac (University of Tennessee, Knoxville) [*C&EN*, **82** (29), 31 (2004)], the latter under the headline, "Innovative Teaching: New textbook - an ACS project - provides an example of how chemistry should be taught."

Between **2004** and **2007**, *Chemistry* was adopted at approximately 50 institutions across the whole range of the academic spectrum, including in a few high school advanced chemistry courses; *Chemistry* has been used for more than five years at my own institution in the large (~700 students) general chemistry course. Workshops and information sessions about the unique pedagogical aspects of the text and the supplements were held regularly at ACS national and regional meetings, biennial conferences on Chemical Education, and other chemical education venues. A Spanish-language version of the book, *Química*, was prepared, publicized at workshops, and marketed in



Latin America. The evident success of the book and the potential impact it could have on the teaching of general chemistry led to for a second edition.

In **December 2005**, the ACS Board of Directors established a procedure whereby all the programs of the Society that are supported by its budget would be reviewed on a regular basis to assess their costs and effectiveness. The Program Review Advisory Group (PRAG) was established to assist the Society Committee on Budget & Finance (B&F) and the ACS Board in fulfilling their responsibilities according to the Bylaws of the Society. Among the programs that PRAG reviewed in **2006** and **2007** were those of the ACS Education Division; in particular, the **2007** review included the GenChem Project.

At its meeting in Boston in **August 2007**, the ACS Board received the recommendation of B&F, which had originated from PRAG, that the GenChem Project be terminated. The Board concurred, with the termination of all work effective **December 31, 2007**.

The Society Committee on Education (SOCED), which oversees the ACS Education Division, received the PRAG report on the education programs in the latter part of **2007** and

was invited to comment on it, especially on those sections that contained recommendations for continuing projects. At the end of **February 2008**, SOCED responded with a very strong statement in opposition to the termination of the GenChem Project and included a point-by-point rebuttal of the reasons cited in the PRAG report that led to the recommendation for termination. At the SOCED meeting in New Orleans in **March 2008**, a discussion was held as to whether the specific parts of the PRAG report that deal with the GenChem Project and the SOCED response should be made public.

During mid-**2008**, a request to B&F and the ACS Board was drafted by SOCED to make public without reservations those specific aspects of the PRAG report that dealt with the reasons for the termination of the GenChem Project so that members of the chemical education community, especially those who have adopted *Chemistry* for their classes, could understand the action. The text of the request was discussed further at the SOCED meeting in Philadelphia in **August 2008**. After further modification, the request for permission to disclose the reasons for the termination decision was submitted by SOCED in **October 2008** for consideration by B&F and the ACS Board at their meetings in **December 2008**.

In mid-**December 2008**, SOCED received a letter from the Chair of the ACS Board of Directors that denied the request to make public specific segments of the PRAG recommendations concerning the GenChem Project, citing matters of confidentiality and inconvenience, thus prohibiting any public disclosure and dissemination of the reasons for the termination. Because the SOCED response was directed toward specific recommenda-

*Continued on page 24*



## Notheastern Section of the American Chemical Society Connections To Chemistry

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 14<sup>th</sup>, 3:30 – 8:00 PM**. This program will showcase the extensive education resources that are available from the American Chemical Society for high school chemistry teachers. Five simultaneous hands-on workshops will illustrate these resources:

- **Using POGIL (Process Oriented Guided Inquiry Learning) in the High School Classroom** with David Cunningham, Chemistry, UMass Lowell, and Cheryl Lavoie, Chemistry, Simmons College. POGIL is based on participatory educational activities in small structured groups. What sets POGIL apart from other inquiry learning techniques is the process education component, where students' awareness of their learning process enhances learning effectiveness. The POGIL approach will be modeled in the workshop. (Workshop A)
- **Challenge Your Students** with Steve Lantos, Chairperson of the Laboratory Practical Task Force to the U.S. National Chemistry Olympiad (USNCO) and Matt Fierman, Chemistry, Brookline High School. Lab practicals emphasize experimental design, applied chemical knowledge, and creativity. Experiments from USNCO will be presented that highlight open-ended and inquiry-based lab activities that are guaranteed to challenge your students. Come prepared to do several experiments in small groups. (Workshop B)
- **Nanosheets and the Elements that Form Them** with Daniel Schmidt, Plastics Engineering, Nanomanufacturing Center, UMass Lowell. This workshop celebrates the National Chemistry Week theme *Chemistry - It's Elemental!* by focusing on those elements in Group IV that alone or in combination are able to form nanosheets – one atom thick films. An example of such a material is graphene, a single carbon layer of the graphite structure that surprisingly exhibits some properties of metals. A brief overview of nanomaterials and naturally occurring nanosheet-based materials, what makes them special, and their properties and uses will be presented. Participants will experiment with the physical and chemical properties of some of these materials. (Workshop C)
- **Understanding Radioactivity** with David Medich, Director of Radiation Safety and Mark Tries, Radiation Sciences, UMass Lowell. Nuclei that release particles or photons to become more energetically stable are called radioactive nuclei. The workshop will cover the properties of these nuclei, the different types of radiation, discuss human exposure to both man-made and natural radiations, and offer experiments to measure the different radiations found in nature. You will be experimenting with alpha, beta, and gamma/X-ray emitting radionuclides and will determine how various materials, including air, shield these radiations. (Workshop D)
- **The Central Science Live!** with Bruce Bursten\*, Co-Author of *Chemistry-The Central Science*, the leading general chemistry textbook widely used in AP and college freshman chemistry classes. Why are certain points emphasized? Is there an opportunity for teachers to have input into future editions? Is how students learn a consideration of the format and organization? This is your chance to discuss this textbook and others with an author of a very successful textbook. (Workshop E)

### Program Schedule

- 3:30 – 4:00 Registration and Refreshments  
4:00 – 4:25 Welcome and Overview  
4:30 – 6:10 Five Simultaneous 50 Minute Workshops Presented in Each Session:  
    Session I: 4:25 – 5:15 . . . Workshops A & B & C & D & E  
    Session II: 5:20 – 6:10 . . . Workshops A & B & C & D & E  
6:15 – 8:00 Dinner and Address

**Address:** *The Centrality of Chemistry* \*Dr. Bruce Bursten, Immediate Past-President, ACS Dean, College of Arts and Science, University of Tennessee, Knoxville

**The deadline for registration is Friday, October 9<sup>th</sup>.** The registration fee is \$20.00 and is non-refundable after October 5<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 program and registration form can be obtained from the NESACS Web site <<http://www.nesacs.org>> under *Connections to Chemistry 2009*.

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

**Join us October 14<sup>th</sup> to Celebrate the Tenth Year of the Connections to Chemistry Program**

# Retrospective on the NSYCC 2008-2009

Submitted by the outgoing NSYCC Chair, Leland (Lee) Johnson ([leland.johnson@nsycc.org](mailto:leland.johnson@nsycc.org))

Over the past four years, I have had the privilege and pleasure of being involved with our section's exchange program with Germany, the NESACS Younger Chemists Committee (NSYCC), the YCC at Boston University, and now as Public Relations Chair for NESACS. Since my term as NSYCC chair has come to an end, I would like to take this opportunity to thank my executive committee for their tremendous efforts. I would like to mention a few accomplishments of the group, and encourage those who follow to continue expanding the effectiveness of the NSYCC network.

Immediately after the first NSYCC officer elections had taken place at Tufts University in May 2008, we held our first executive committee meeting to discuss our plans for the year. While enjoying food and beverages, the plan took shape, and we began the work of re-establishing our social and professional networks across and beyond our section. By

August 2008, the executive committee had approved our constitution. As a group effort, each officer proposed and integrated her/his changes into the original document. As a working manual for the group, the document will faithfully serve its purpose. As committee leaders develop new ideas, the constitution should provide an operational framework with minor changes. Adopting a constitution for our committee was an early and important achievement of the group.

In preparing a presentation for the YCC symposium at the ACS National Meeting in August 2008, I was able to include some of our early successes in re-establishing a network of Campus Representatives across the section. Our "Campus Reps" volunteer to be the primary campus contact for the NSYCC and as a liaison for chemistry students to the NSYCC. Helping to implement the idea, Kathryn Bewley (Boston University, Publicity Chair) and I began the work of building a reliable infor-

mation network. Over the year, the group of Campus Reps grew to fifteen. Kathryn and others on the executive committee were able to inform and involve more than fifteen campuses simultaneously with emails, flyers, and updates about NSYCC activities. The future of this network greatly depends upon the Campus Reps choosing their own dependable successors and perpetuating on-campus enthusiasm for the benefits of the YCC.

One of the moderately successful networking activities was the "Seminar-of-the-Month" (SOM) program. We utilized the calendars of events from campuses and NESACS websites in order to pick a seminar each month, and did our best to send NSYCC committee members to meet younger chemists at each seminar. By the end of September, we had really overworked our Campus Reps: we had assigned two seminars for that month AND arranged a tasting for beer enthusiasts at Cambridge Brewing Company in Kendall Square. While the beer tasting was a smashing success, the SOMs, through the months, proved difficult to attend for most committee members.

Through October and November, the Campus Reps again helped spread information about seminars and events like the German Exchange program, NESACS monthly meetings, the Northeast Regional Undergraduate Day at Simmons College, and the MassBio Career Fair. Thanks in part to the Campus Reps, the NESACS-GDCh German Exchange Selection Committee received the largest number of applicants in the history of the program. In order to show our appreciation, the executive committee hosted some Campus Reps for a night of bowling and other fun in December to end the semester.

We began 2009 with a January tour of the Broad Institute in Cambridge and with increasing regional interest in the activities of the committee. By February, Lynell Skewis (Career Chair, Boston University) had

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## NSYCC Retrospective

*Continued from page 12*

begun talking with regional companies about the Northeast Student Chemistry Career Fair and the Northeast Student Chemistry Research Conference, which would be combined into the Northeast Student Two-Day Chemistry Symposium. In late February, there was a very successful Career Symposium, hosted by Patrick Gordon and Daniel Eustace, with panel members from industry and academia.

The months leading up to the Northeast Student Two-Day Chemistry Symposium were busy for the executive committee. The NESACS-GDCh Exchange to Germany occurred in March (see the Summer 2009 Issue of *The Nucleus*). Before attending this year's exchange with Germany, Vice-Chair Deniz Yüksel (Tufts) implemented her plan for a Student-Invited Lecture for the Two-Day Symposium. The on-line selection process yielded a preference for MIT professor Gregory Fu for the keynote address. He accepted our invitation to give his lecture entitled "Asymmetric Catalysis

with Planar-Chiral Heterocycles".

As the symposium dates approached, several companies agreed to attend the Chemistry Career Fair on Friday, May 1<sup>st</sup>, others sponsored travel grants for eligible students, and still others generously provided marketing materials for one or both days' events. The companies attending the Career Fair were Adante Staffing, CreaGen Biosciences, Eisai Research Institute, Merck, and Sigma-Aldrich. Adante Staffing and NESACS sponsored the travel grants for three students, Joseph Meany (Keene St. College), Jie Du (UNH), and Deidre Blackwell (URI). This funding allowed these students to stay in Boston for the entire two-day event.

Even in the less-than-stellar economy, the Chemistry Career Fair was successful for many attendees. Students, unemployed chemists, and recruiters were able to establish contacts and learn techniques to achieve a successful career. On Friday evening, several attendees met for dinner and refreshing adult beverages in Boston's Back Bay. The Chemistry Research Conference on Saturday, May 2<sup>nd</sup> was

also quite successful. It was held at Boston University's Photonics Center. Lynell Skewis and Stefanie Cantalupo, both graduate students at BU, were crucial in making the on-site arrangements and ensuring the programs success. After a few technical glitches, the day progressed nicely, culminating in the keynote address by Greg Fu, the awards for excellent presentations, and election of next year's NSYCC executive committee. The awards for excellent presentations follow:

**Brian Steinberg**—Boston College  
Top Award, Excellent Oral Presentation (Strem Chemicals, Inc.)

**Christina Li**—Harvard University  
Excellent Oral Presentation (Waters Corporation)

**Alena Carlson**—UMass Boston  
Top Undergraduate Poster (Waters Corporation)

**Erin Iski**—Tufts University  
Top Graduate Poster (Waters Corporation)

**Tricia May**—Boston College  
Excellent Poster Presentation by a Woman (Graduate Women in Science)

*Continued on page 25*



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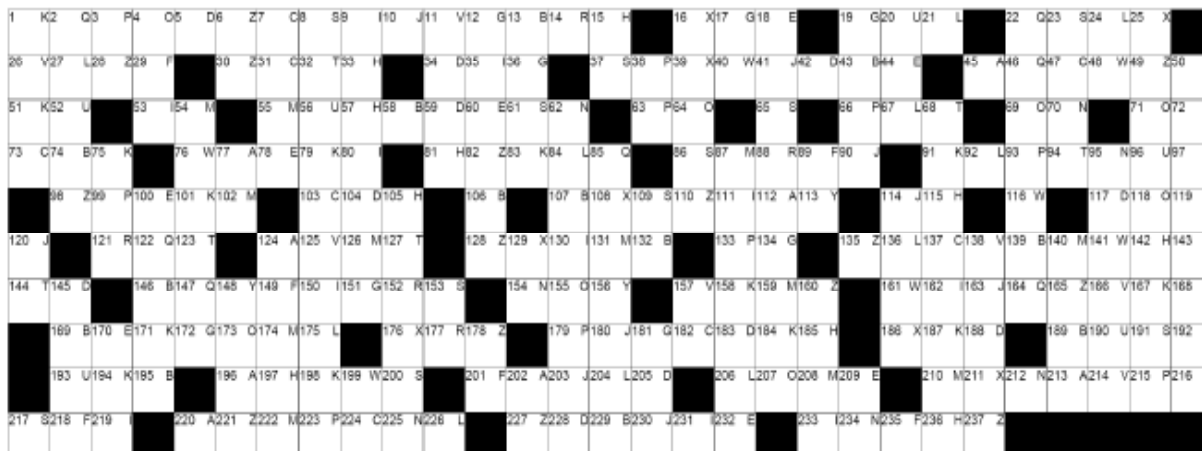
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# National Chemistry Week Double Crostic Contest

By Chris Morse and Lance Nathan

The puzzle yields two messages, one in the grid, and one down the first letters of clue answers. Solve the clues, and transfer the letters into the numbered boxes. As you see the message, you can also transfer letters back down below. The message is the instructions for this National Chemistry Week Contest. You qualify to enter if you are in grades 7 to 12. If you're younger than that, look at the word search puzzle contest. Follow the instructions, and e-mail your contest entry to [NCWpuzzles@yahoo.com](mailto:NCWpuzzles@yahoo.com). Make sure to include your name, address, school, and grade. Entries will be judged and results will be posted later.



A. One-tenth of a kilo

77 168 196 213 220 112 202 45 124

B.  $6.022 \times 10^{23}$  is named after him (2 words)

146 107 195 74 169 13 106 229 139 189 43 132 216 58

C. Binding site on DNA which aids in transcription

137 47 103 182 31 7 224 73

D. Electrochemical cell or fuel cell, *e.g.* (2 words)

183 34 117 205 5 59 228 104 188 42 145

E. Most like gold or sulfur in color

232 78 170 44 72 18 100 209 60

F. Units of force named for a British physicist

218 29 201 50 149 235 89

G. Element whose Latin name is stibium

181 36 151 12 172 17 134 19

H. Aum Shinrikyo and many other users of chemical warfare, *e.g.*

105 185 33 115 197 57 142 236 81 15

I.  $PV = nRT$  (3 words)

130 233 80 162 9 219 53 150 231 111 35

J. Opposite of reductive

114 180 41 120 10 90 203 163 230

K. The basis of many explosives, plastics, and varnishes derived from plants

194 51 167 79 158 1 83 184 91 198 101 187 75 171

L. SAT or GRE, *e.g.* (2 words)

27 136 226 84 175 21 192 67 204 92 24 206

M. Only winner of both the Chemistry and Peace Nobel Prizes (2 words)

102 208 54 159 126 140 55 222 131 87 174 210

N. Bitter alkaloid found in coffee, tea, and colas

62 143 70 154 234 212 225 95

O. Slang for a jail in the Old West

207 69 155 64 173 4 118 71

P. Heats of reactions at constant pressures

179 3 93 38 133 223 99 63 215 66

Q. North African country that exports phosphates

22 122 85 164 46 147 2

R. Word that is a pun for something ferric

152 88 177 14 121

S. The alchemists called this chemical oil of vitriol (2 words)

109 8 191 86 23 119 61 153 65 37 217 200

T. Disapproving interjection (hyphenated)

68 32 127 94 123 144

U. Overly ornate artistic style of the 18<sup>th</sup> century

96 190 52 193 56 20

V. The rare-earth metal used in YAG lasers

157 214 11 138 166 125 26

W. Another name for tungsten

76 48 199 161 141 116 40

X. The waste liquid phase from a chromatography column

108 176 186 211 129 39 16 25

Y. Makes a mistake

113 148 156 97

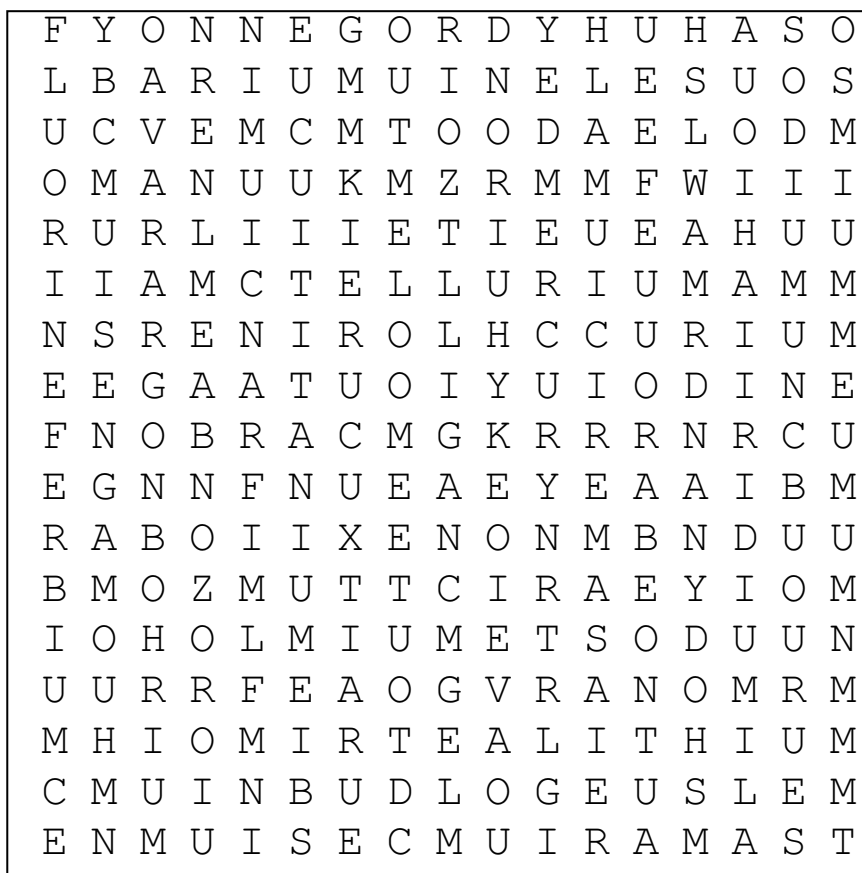
Z. Winner of the 2001 Nobel Prize in Chemistry (3 words)

28 128 135 160 165 30 49 82 6 178 221 227 237 98 110

# National Chemistry Week Word Search Contest

By Chris Morse and Lance Nathan

Below is a normal word search containing the names of fifty-one different chemical elements. Once you have found all of them in the grid, the extra leftover letters in the grid will spell the instructions for what you need to do for this National Chemistry Week Contest. You can qualify to do this contest if you are in grades first through sixth. If you're older than that, you should look at the double acrostic puzzle contest. Once you follow the instructions, e-mail your contest entry to [NCWpuzzles@yahoo.com](mailto:NCWpuzzles@yahoo.com). Make sure you include your name, address, school, and grade. Entries will be judged and results will be posted later.



AMERICIUM	CARBON	FRANCIUM	LEAD	SAMARIUM
ANTIMONY	CERIUM	GERMANIUM	LITHIUM	SELENIUM
ARGON	CESIUM	GOLD	MAGNESIUM	SODIUM
ARSENIC	CHLORINE	HELIUM	MEITNERIUM	SULFUR
ASTATINE	CHROMIUM	HOLMIUM	MERCURY	TELLURIUM
BARIUM	CURIUM	HYDROGEN	NEON	TITANIUM
BERYLLIUM	DUBNIUM	INDIUM	NICKEL	URANIUM
BOHRIUM	ERBIUM	IODINE	NITROGEN	XENON
BORON	FERMIUM	IRIDIUM	OSMIUM	ZINC
BROMINE	FLUORINE	IRON	RADON	ZIRCONIUM
CALCIUM				

# NESACS Members Honored with 2010 ACS National Awards

The following are the recipients of awards administered by the American Chemical Society for 2010. With the exception of the Arthur C. Cope Scholar Awards, these recipients will be honored at the Awards Ceremony on Tuesday, March 23, 2010, in conjunction with the 239th ACS National Meeting in San Francisco, CA.

**ACS Award for Creative Invention** sponsored by ACS Corporation Associates, **David Walt**, Tufts University.

**ACS Award for Creative Work in Fluorine Chemistry** sponsored by Honeywell, **Russell P. Hughes**, Dartmouth College.

**ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences** sponsored by The Camille and Henry Dreyfus Foundation, Inc., **Robert L. Lichter**, Merrimack Consultants, LLC.

**ACS Award for Encouraging Women into Careers in the Chemi-**

**cal Sciences** sponsored by The Camille and Henry Dreyfus Foundation, Inc., **Mildred S. Dresselhaus**, Massachusetts Institute of Technology.

**ACS Award in Colloid and Surface Chemistry** sponsored by Procter & Gamble Company, **Moungi G. Bawendi**, Massachusetts Institute of Technology.

**Ronald Breslow Award for Achievement in Biomimetic Chemistry** sponsored by the Ronald Breslow Endowment, **Stephen J. Lippard**, Massachusetts Institute of Technology.

**Arthur C. Cope Scholar Awards** sponsored by the Arthur C. Cope Fund, **Alice Y. Ting**, Massachusetts Institute of Technology.

**Elias J. Corey Award for Outstanding Original Contribution in Organic Synthesis by a Young Investigator** sponsored by the Pfizer Endowment Fund, **Mohammad Movassaghi**, Massachusetts Institute

of Technology.

**Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry** sponsored by Waters Corp., **Catherine Costello**, Boston University School of Medicine.

**E. V. Murphree Award in Industrial and Engineering Chemistry** sponsored by the ExxonMobil Research and Engineering Co., **Gregory N. Stephanopoulos**, Massachusetts Institute of Technology.

**Nobel Laureate Signature Award for Graduate Education in Chemistry** sponsored by Mallinckrodt Baker, Inc., **Sang-Hee Shim** (student), Harvard University and **Martin T. Zanni** (preceptor), University of Wisconsin-Madison.

**Gabor A. Somorjai Award for Creative Research in Catalysis** sponsored by the Gabor A. and Judith K. Somorjai Endowment Fund, **Robert J. Madix**, Harvard University.

In addition, the **James Flack Norris Award in Physical Organic Chemistry** sponsored by the ACS Northeastern Section will be presented to **John E. Baldwin**, Syracuse University.

Two previous winners of the **James Flack Norris Award for Outstanding Achievement in the Teaching of Chemistry** from NESACS will also receive 2010 National Awards: the **George C. Pimentel Award in Chemical Education** sponsored by Cengage Publishing and ACS will be presented to **Zafra J. Margolin Lerman**, Columbia College Chicago, and the **Priestley Medal** sponsored by ACS, to **Richard N. Zare**, Stanford University.

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Q. Exactly, how many awards and scholarships does NESACS sponsor?

A) One    b) Two    c) Many

[www.nesacs.org/awards](http://www.nesacs.org/awards)



# 2009 Hill Award to E. Joseph Billo



The 2009 Henry A. Hill Award will be presented at the October 2009 meeting to Dr. E. Joseph Billo, retired Professor of Chemistry, Boston College. The Hill Award is presented annually to a member of the Northeastern Section of ACS (NESACS) for meritorious service to the section and to the profession of chemistry. Dr. Billo is currently serving his second term as NESACS Chair.

Dr. Billo earned his bachelor's and master's degrees from McMaster University in Hamilton, Ontario and a doctorate in chemistry from the same institution in 1967. After spending two years as a research associate at Purdue University, he joined the Boston College chemistry department in 1969 where he remained until his retirement in 2006. At Boston College he taught courses in analytical and inorganic chemistry, and published a number of papers in scientific journals in the area of inorganic chemistry. He wrote several books on the use of computer spreadsheets to perform scientific and engineering calculations, and gave workshops throughout the United States, Canada and Europe on the subject. Dr. Billo became a member of ACS in 1970. He became involved with the Northeastern Section in 1974 when he was asked to co-organize the

Undergraduate Research Symposium "for just one year." Over the next 35 years, Dr. Billo served NESACS in numerous capacities: Chemical Education Committee, 1974-76, 1978-86, Chair, 1982-86; Organizer of the Undergraduate Research Symposium, 1974-1976, 1978-1984; Nominating Committee, 1981, 1991, 1993, 1994, 2002, 2006; James Flack Norris Award Committee, 1985-88, Chair, 1987; Esselen Award Committee, 2001-05, Chair, 2004; Alternate Councilor, 1987-1995; Councilor, 1996-1998; Budget Committee, 1989-1991; Continuing Education Committee, 1990-present; Board of Publications, 1994-2001, Chair, 1996, 1998-2000; National Meeting Committee Chair, 1990, 1998; Director-at-Large, 1999-2001; NESACS Chair-Elect and Program Chair, 1989, 2008; Section Chair, 1990, 2009.  $\diamond$

## October Historical Events In Chemistry

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

### October 1, 1940

Air Products and Chemicals, Inc. was incorporated on this day.

### October 3, 1904

Charles J. Pedersen, who was born on this date, found that alkali metal ions could be bound by crown ethers in a rigid layered structure. In 1987, he shared the Nobel Prize in Chemistry with Jean-Marie Lehn and Donald J. Cram for their development and use of molecules with structure-specific interactions of high selectivity.

### October 4, 1918

Kenichi Fukui, who developed the frontier orbital theory of reactivity, was born on this day. He shared the Nobel Prize with Roald Hoffmann in 1981 for their theories, developed independently, concerning the course of chemical reactions.

### October 6, 1897

Florence B. Seibert studied the biochemistry of tuberculosis and was awarded the Garvin Medal in 1942. She was born on this date.

### October 8, 1918

Jens C. Skou discovered the enzyme that promotes directed (vectored) transport of substances through cell membranes:  $\text{Na}^+$ ,  $\text{K}^+$ -ATPase. He shared the Nobel Prize in 1997 for the first discovery of an ion-transporting enzyme with P. D. Boyer and J. Walker who elucidated the enzymatic mechanism underlying the synthesis of adenosine triphosphate (ATP).

### October 11, 1884

One hundred and twenty-five years ago on this date, Frederick Bergius was born. He researched chemical reactions at high pressure, conver-

sion of coal into oil, and the hydrolysis of wood to sugar and cattle feed. He shared the Nobel Prize in Chemistry in 1931 with Carl Bosch in recognition of their contributions to the invention and development of chemical high-pressure methods.

### October 14, 1886

Jacobus H. Van't Hoff presented a law before the Swedish Academy of Sciences that showed osmotic pressure of a dilute solution obeys Boyle's, Charles's and Avogadro's Laws, and that  $pV = RT$ .

### October 17, 1890

Unocal was incorporated as Union Oil Co. of California on this date.

### October 19, 1909

One hundred years ago on this date, Marguerite Perey was born. She discovered francium in 1939.

### October 23, Any Year

**Mole Day**, 6.02 a.m. through 6.02 p.m. (Mole time); Mole Moment: 50.453 s after 6.42 p.m.

### October 25, 1934

Seventy-five years ago, Otto Folini

*Continued on page 24*

# Annual Nucleus Buyers Guide 2009

1. How to use this Guide. First look at the PRODUCTS & SERVICES DIRECTORY, which is on page 22. Find the Category in which you are interested. Categories are shown in bold letters. Then, under the Category look for the specialized Product/ Service area that you want and copy the companies that are shown there.

Then go to the Company Directory (on page 18) and locate the companies that provide the Product/Services that interest you. Complete contact information is available for each company listed in the Buyers Guide.

2. This Guide is distributed to the 7,500 ACS members in the greater Massachusetts area. It has been estimated that this audience purchases \$350,000,000 of products and services each year.

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## Women Chemists

Continued from page 4

Buske explained that she uses the general research skills that she developed at MIT. These skills help her, for example, in advising companies on how to lower their toxic gas emissions.

### Support for female professionals

Many companies have adopted policies designed to help women be successful. For example, Dr. Diane Joseph-McCarthy, associate director in Infection Computational Science at AstraZeneca, explained that at AstraZeneca, they provide free backup child care for times when school is not in session. They also allow employees to take five days of excused absences, which are different from vacation days, to care for a sick child.

Many women have options to limit their exposure to toxic chemicals during pregnancy. For example, some women are encouraged to stay out of the laboratory during their entire pregnancies. Instead, they may do computer-based work, such as data analysis and project management.

Companies also provide female employees opportunities to network and improve their managerial skills. For example, Dr. Lee and Dr. Joseph-McCarthy were involved in a program called “Women as Leaders in Discovery,” in which a group of forty women met every two months with an outside consultant. The program, according to Dr. Lee, helped to make the women more effective leaders and communicators.

Dr. Gould was involved in a program called “LEAD,” organized by *Women Unlimited*. This program, while not designed specifically for chemists, was nonetheless extremely helpful, according to Dr. Gould. “It is interesting to hear someone from Comcast talk about their experiences, and find that it is not that different from what I’ve experienced, Dr. Gould said. “We all worry about the same things.”

Female-specific networking groups have also been helpful for some women. Dr. Buske and Dr. Lee were both active in a women in chemistry group while they were graduate stu-

## Termination

Continued from page 10

tions in the PRAG report, it, too, may not be made public.

The policy whereby the formal record of PRAG’s reviews and recommendations is to remain confidential except to select members of ACS governance and senior management was stated in the **August 2009 Councilor Bulletin** by John Adams, Chair, Program Review Advisory Group (p. 14).  
◇

dents at MIT. Dr. Buske explained that the group allowed her to network and meet other women who she was not meeting while working in the laboratory. “It is important to realize that networking is something that men have always done,” said Dr. Lee, and women-specific networking groups afford women the same opportunities.

### Challenges

Dr. Gould explained that women in industry still face particular challenges. Women need to be careful when criticizing a co-worker, as they may be characterized as “catty,” whereas men do not need to be as cautious.

Dr. Corinne Bauer of BIND Biosciences said that at a previous job, meetings sometimes began at 8 AM, a time that was particularly difficult for her and other women with children. When women complained about the meeting time, they were viewed negatively by some of their other co-workers. “This shouldn’t have been an issue at all,” Dr. Bauer said.

Even though the male to female ratio at many levels in companies is approaching 50-50, the upper level managers remain predominantly male. This phenomenon may be because many of these positions are extremely time-consuming, and women may not be interested in sacrificing to reach that level in the company. Millennium Pharmaceuticals, where Dr. Gould works, may be an exception to that trend, as they have many female managers.

### Concluding thoughts

When asked what advice she would give to female graduate students

## Historical Events

Continued from page 17

died. He was a pioneer in clinical chemistry and did research in the systematic development of “micromethods, use of colorimetry in biochemistry using the Duboscq colorimeter, and the use of an enzyme for analytical purposes: urease to measure urea.” Vintila Ciocalteu and he developed the “Phenol Reagent” for use in protein determinations. He was born on April 4, 1867.

### October 30, 1895

Dickinson W. Richards, Jr., who was born on this date, made the first clinical use of cardiac catheterization. He shared the Nobel Prize in Physiology or Medicine in 1956 with André Frédéric Cournand and Werner Forssmann for their discoveries concerning heart catheterization and pathological changes in the circulatory system.

For more historical facts on chemistry, visit Dr. May’s website at <http://faculty.cua.edu/may/ChemistryCalendar.html> and “This Week on Chemical History” on the ACS web (<http://www.acs.org/whatischemistry>). ◇

and post-docs deciding on a career path, Dr. Gould said, “Think about what is going to make you happy and then think realistically about what that requires. You can think that it all works out and you can do everything...but you have to be realistic about what that all means. Something has to give.”

Companies can, and have been, implementing a variety of policies to make things easier for women. As Dr. Grazia Piizzi, a researcher at Novartis, said, “I feel lucky to work for a company like Novartis that recognizes how difficult it can be for women.”

### Author’s note:

Thank you to everyone who took the time to speak with me about their career. I found our discussions extremely interesting and highly rewarding. ◇



## DIRECTORY

### SERVICES

## NSYCC Retrospective

Continued from page 13

**Samuel Beal**—Wheaton College  
Phyllis A. Brauner Memorial Book Prize (NESACS)

**Raeanne Napoleon**—Boston University  
Excellent Poster Presentation by a Congenial Scientist (NESACS)

Following the NSYCC executive committee elections and an evening break, several committee members, as well as Brian Steinberg (top award winner) and Raeanne Napoleon (newly elected Chair) joined Gregory Fu for a lively discussion over dinner at the Beacon Street Tavern. We extend our thanks to Professor Fu for his gracious participation in the events of the day, his informative seminar, and his support of the younger chemists in the section.

The Two-Day Symposium would not have been possible without the careful attention of the executive committee. I would also like to thank two stellar folks, Timothy Dunn (BU Parking) and Fernando Sousa (BU Photonics Center Facilities), who helped (under extreme time pressure) with parking and facilities details. They were professional, efficient, and polite additions to the list of people who helped coordinate the day's events at Boston University.

Throughout 2008 and into 2009, the NSYCC executive committee (all are volunteers, most are students) gave selflessly to the causes of the group. Vice-Chair Deniz Yüksel and Career Chair Lynell Skewis served as sounding boards for ideas of the group. Their candor allowed me to focus the efforts of the committee on feasible goals. Kathryn Bewley, in addition to all of her work as Publicity Chair, had many suggestions to help smooth the operations of the committee. Treasurer Olga Makhlynets (Tufts) performed efficiently and admirably on the many activities which required her prompt attention. Webmasters Subrahmanian T K (Tufts) and Patrick Cappillino (BU) worked together to produce an up-to-date website according to the requests of many on the executive committee. To our social chairs, Gül-

benk Anarat and Gökçe Su Pulcu (both from BU): They tirelessly worked to make our social events much more fun and interactive, and I wish to thank them personally for their efforts. I consider myself very fortunate that each member of the executive committee is an intelligent chemist with a tremendous sense of humor.

Finally, our Campus Reps should also be recognized for their great work this year: Elisha Fielding (BC), Kathryn Bewley (BU), Ce Feng (Brandeis), Jolene Schuster (Dartmouth), Raymond Moellering (Harvard), Joseph Meany (Keene State), J. Adam Hendricks (NEU), Deniz Yüksel (Tufts), Abha Sood (UMass, Boston), Leslie Farris (UMass, Lowell), Jie Du (UNH), Andrea Johnston (Wellesley), Koyel Bhattacharyya (MIT), Shaniaz Landge (UMass Boston, now at Dartmouth), and Dele Olubanwo (UMass, Dartmouth). This group has really made it possible to successfully expand the network of younger chemists in the Northeastern Section.

In closing, I wish the incoming executive committee, led by Raeanne Napoleon, all the best with the continued successes of the NSYCC. The coming term will include the ACS National Meeting in Boston, the 10<sup>th</sup> anniversary of the German Exchange Program, and preparations for the International Year of Chemistry in 2011. Please visit the NSYCC website ([www.nsycc.org](http://www.nsycc.org)) for more details on upcoming events for younger chemists in the section. It has been a pleasure! LJ. ◇

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**\$500,000 Lemelson-MIT Prize**

The Lemelson-MIT Prize is awarded to an outstanding mid-career inventor, who has developed a patented product or process of significant value to society, which has been adopted for practical use, or has a high probability of being adopted. By recognizing and funding younger, mid-career inventors, the prize is designed to spur inventive careers and provide role models for future generations of inventors.

**Eligibility Requirements**  
*the prize is open to individuals who*

- are "mid-career" inventors (having received a bachelors degree after July 1, 1985)
- have demonstrated remarkable technological inventiveness in their field(s)
- have produced inventions that have the potential to be adopted for practical use or have been commercialized, and have demonstrated positive outcomes
- are the primary inventor of 2 or more U.S. patents
- are involved in mentoring or youth outreach activities
- are U.S. Citizens or Permanent Residents

Nomination details for the Lemelson-MIT Prize can be found at <http://web.mit.edu/invent/a-prize.html>

The deadline for nominations for the Lemelson-MIT Prize is Tuesday, October 6th, 2009. For questions or more information, please contact Edward Cantlon, Awards Program Officer, at [lemelson\\_awards@mit.edu](mailto:lemelson_awards@mit.edu) or 617-452-2145.

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# NSYCC November Activities

## *NSYCC November Seminar of the Month and Social Networking Night for Local Scientists*

The NSYCC would like to invite all readers to join us at the Miracle of Science Bar & Grill, ([www.miracleofscience.us](http://www.miracleofscience.us)) located at 321 Massachusetts Ave in Cambridge, MA, on November 3, 2009 at 6:30 pm. This after-work event will be a casual opportunity for local scientists from industry to academia to socialize and meet new local scientists. This NSYCC sponsored event will occur directly after the September NSYCC Seminar of the Month. The seminar will be held in room 4-231 at MIT at 4 pm. The seminar will be given by Duncan Steel from the University of Michigan, Ann Arbor. He will be discussing the latest developments in physical chemistry research. For more details please contact Raeanne Napoleon at [raeanne@nsycc.org](mailto:raeanne@nsycc.org), or please visit the NSYCC website, [www.nsycc.org](http://www.nsycc.org). Please remember that if you choose to drink, to do so responsibly. ◇

## Calendar

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

### Oct 1

Dr. Agi Fehervari (Bose Corp.)  
"Sulfonated, Crosslinked Triblock Copolymer Proton Conductive Membranes for Direct Methanol Fuel Cells"  
UMass Lowell, Olney Hall, Room 218 3:30 pm

### Oct 03

20th Boston Regional Inorganic Chemistry (BRIC) Meeting  
Prof. Ed Wong (UNH) & other NE scientists  
Univ. New Hampshire, Durham, NH  
9:30 am to 3:30 pm. Informal lunch provided.  
Contact Roy Planalp, [roy.planalp@unh.edu](mailto:roy.planalp@unh.edu).

### October 6

Dr. Scott Biller, Novartis Institutes for BioMedical Research, Inc.  
"The Discovery of Aliskerin, the First Clinically Successful Inhibitor of the Enzyme Renin"  
Tufts Univ. Pearson Chemistry Building, Room P-106 4:30 pm

### Oct 08

Prof. Andrew Phillips (University of Colorado)  
"Complex Molecule Synthesis: Opportunities in Chemistry and Biology"  
Boston College, Merkert 130 4:00 pm  
Albrecht Berkessel (Insitut fur Organische Chemie der Universitat zu Koln)  
MIT, 6-120 4:00 pm

### Oct 14

Prof. Doug Stephan (Univ. Toronto)  
MIT, 6-120 4:00 pm

### Oct 15

Prof. Tom Rovis (Colorado State Univ.)  
Title: TBA  
MIT, 6-120 4:00 pm

### Oct 19

Dr. Jean M.J. Fréchet (U.C. Berkeley)  
Scientific Director of the Molecular Foundry, Lawrence Berkeley National Laboratory  
"Functional Macromolecules: from Superhydrophobic Surfaces to Catalytic Nanoreactors",  
Boston College, Merkert 127 4:00 - 5:30 pm

### Oct 20

Dr. Jean M.J. Fréchet, (U.C. Berkeley)  
"Designing Macromolecules for Chemo- and Immuno-Therapy"  
Boston College, Merkert 127 4:00 - 5:30 pm  
Stuart G. Levy, PhD (PPD Dermatology, Inc.)  
"Development of a Scalable Asymmetric Synthesis of a Chiral Tetraazamacrocyclic for Application in Targeted MRI"  
UNH, Iddles, L103 11:10 am

Prof. David Gin, Memorial Sloan-Kettering Cancer Center  
"Synthesis of Vaccine Adjuvants and Bioactive Alkaloids"  
Tufts Univ. Pearson Chemistry Building, Room P-106 4:30 pm

### Oct 21

Dr. Jean M.J. Fréchet (U.C. Berkeley)  
"Polymers in Organic Electronics"  
Boston College, Merkert 127 3:00 - 4:30 pm

### October 27

Prof. Kent Kirshenbaum, New York University  
"Exploring Form and Function in Biomimetic Oligomers"  
Tufts Univ. Pearson Chemistry Building, Room P-106 4:30 pm

### Oct 29

Buchi Lecture in Organic Chemistry:  
Laura Kiessling, University of Wisconsin-Madison  
MIT, 6-120 4:00 pm

*Continued on page 23*