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HUSKY

Chemist

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Sep.

## Center for Renewable Energy Technology opens its doors!

With soaring gasoline prices and the energy futures market in turmoil, renewable energy has become a topic of global importance. There perhaps could not be a better backdrop to Northeastern's opening of its Center for Renewable Energy Technology [CRET], under the leadership of its director, Professor Sanjeev Mukerjee. The center was formally approved by the Council of Deans on February 12, and involves faculty from the Colleges of Arts & Sciences and Engineering at Northeastern, a number of distinguished academic experts from US and overseas universities, and a management board involving industry leaders. The Department of Chemistry and Chemical Biology is playing a leading role in the formation of CRET, with both Mukerjee and colleague Eugene Smotkin involved with fuel cell research in the center, along with visiting Professor of Chemistry K. M. Abraham, who runs the Li rechargeable battery research program. Another key player is Gregoriou Vasilis, a visiting Professor of Chemistry from the University of Patras, Greece and founder and CEO of Advent Technologies – a European fuel cell startup with a US satellite operation. Activities in the center span all aspects of renewable energy technology, and the center includes facilities for prototyping and micro fabrication. On the approval of the center, Dean James Stellar remarked "the center for renewable energy technology will put Northeastern on the map for research into non carbon based energy sources, and allow the institution to successfully compete for cluster funding in a critical and growing area." Active funding affiliated with the center already exceeds \$5M, and is expected to increase substantially as federal agencies and corporate sponsor-

ship for energy related research escalates. A number of high tech startup companies are already affiliated with the center, including NuVant systems, BASF, GM, Polyfuel, Fuel Cell Energy, Protonex Corp., Encite llc, Nissan, Nantero Inc and Foster Miller. In addition to this, active collaborations with a number of federally sponsored centers, such as the Case Advanced Power Institute (Case, Ohio), University of New Mexico Energy Initiative (Albuquerque, NM), Brookhaven National Laboratory (Upton, NY) and the National Institute of Science and Technology (Gaithersburg, MD) are in place. International collaborations include those with National Research Council (Canada), Heyrovski Institute, Brno University and Academy of Science in Czech Republic, Pannon University in Veszprem Hungary, University of Tel Aviv and Technion (Israel), University of Patras (Greece), and University of Surrey (UK). CRET also offers consultancy to partners and the provision of short courses to industry. The center is already attracting interest from the state, with representatives from both the MA clean energy fund and the Mass Technology Collaborative involved in its activities. In addition, a cluster of universities, including University of Massachusetts at Amherst, Boston University, and Worcester Polytechnic, is being established. A formal opening ceremony accompanied by a major scientific symposium is being planned for April 2009.



## Journal of Proteome Research Ranked #1!



Professor of Chemistry, William Hancock, was delighted by the recent announcement that the Journal of Proteome Research (published by American Chemical Society) was recently ranked number one of all journals in proteomics. Hancock, who has served as Editor-in-Chief of JPR since its inception in 2002 commented on the recent data reported by Thomson Reuters which tracks citation data for all journals and the ISI Impact Factor ranking [5.68]. Proteomics is an increasingly important field of chemistry in the advent of genome sequencing, and the journal appeals to a wide audience. JPR's goal is to integrate the fields of chemistry, mathematics, applied physics, biology, and medicine in order to better understand the function of proteins in biological systems. We are naturally delighted that the department is affiliated with this premier journal and the impact it has on our international reputation as a center of excellence for proteomics research. Congratulations! Keep up the good work, Bill!



2007-8 was another excellent academic year for the department in all areas of its operation. A record number of chemistry majors graduated in the class of '08, we enjoyed another banner year for student recruiting, both at the undergraduate and graduate level, and our research funding reached the highest level in the University.

While data can provide a welcome measure of success for an academic program, it is often the less quantifiable outputs that signal our true strength. As you will glean from this edition of *Husky Chemist*, there is something of a buzz around Hurtig Hall these days, and it is driven by the accomplishments of our students. Our research groups produce world class scholarship that captures the attention of the media, graces covers of the journals, and lands \$ multi-million contracts. Our undergraduates engage in groundbreaking science on corporate co-ops and excel in graduate level classes. Prospective students now join wait lists for the chance to become part of our program. Our corporate partners rely on us as the major source of practically trained chemistry professionals in the area. All of this activity makes the degrees we award, and training we provide, that much more valuable - not only to our current family of students, but to our alumni around the globe.

Those with foresight always knew that combining practical training with solid classroom instruction would give a scientist the competitive edge. In this way, Northeastern became a popular destination for prospective chemists. The world in 2008 is a somewhat different place than the 1960's, when our first research degrees were awarded. Students arrive with more varied background preparation, have diverse interests within the field of chemistry, and will typically carry a substantial debt burden on graduation, making it more and more imperative that they develop the right career path. Employers' outlooks have likewise shifted. The traditional company job "for life" is being replaced with fixed term contracts, mergers & acquisitions, corporate downsizing, and career changing. As the challenges increase, so do the rewards for the accomplished students, who are pursued by the corporate talent spotters. The differentials in the market place are clear: practical training and problem solving ability - two of the hallmarks of the NU chemistry degree whether at the BS, MS or PhD level. As a result, our prospective graduates, armed with coop experience and substantial research portfolios are able to land jobs in preference to their Ivy League peers.

Looking to the future is something that I and my colleagues do on a continual basis; whether it is redesigning the curriculum in line with the skill set needs of the marketplace, hiring professors in emerging disciplines, or investing in instrumentation that will allow us to gain competitive advantage in niche research areas. Chemistry has been long regarded as the 'central' science. With applications ranging from forensics science, to pharmaceuticals, to cosmetics, to healthcare, there is barely an industry on the planet that does not require the practical training, innate problem solving and analytical skills of chemists. Building on our success, over the next few years we will be investing in key areas where future leaders are needed, three of the immediate priorities being analytical biotechnology, clinical chemistry and energy related materials. As always, we will recruit additional faculty experts in these areas, develop innovative curricula in relevant fields, and thus attract and train the best students in the nation.

These are indeed exciting times to be a chemist, and particularly a Husky Chemist. I am proud of what we do, and the impact that our students have on the world in which we live. As we keep rising to the challenges the world presents, we show who we are, and why we chose this path - because we are the problem solvers. Global problems have come down to molecules and atoms - and the oft used slogan "chemists provide solutions" is never more true than for a Husky Chemist. Enjoy the newsletter!

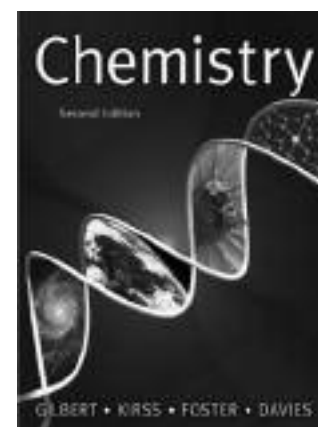


Graham Jones

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## Professors Publish Second Edition of Textbook



W.W. Norton released the second edition of *Chemistry: The Science in Context*, a textbook authored by CCB Professors Tom Gilbert, Rein Kirss, and Geoffrey Davies, along with Natalie Foster. The new textbook has received overwhelming praise from the chemical education community. Editorial reviews include, "Just as the value of reading becomes clear to a child after hearing a good story, so the value of chemistry becomes clear to students when they see how it can help them understand the world around them. *Chemistry: The Science in Context* tells a story, beginning with the creation of the universe and proceeding through the "evolution of matter," from the formation of subatomic particles, to atomic structure, to the formation of natural and synthetic polymers." Other testimonials include, "Throughout [the textbook], the chemistry skills, concepts, and facts standard to the general chemistry course are introduced, but within the context of broader scientific questions and societal applications. Once students grasp the relevance of chemistry to their other science courses and to their own lives, their understanding of chemistry improves." Perhaps the content is best summarized by W.W. Norton's advertising with "Chemistry is truly the central science—discover it with *Chemistry: The Science in Context*." The book will be spearheaded in our general chemistry for majors classes (CHMU215 and CHMU218) this fall and spring semesters.

## New Protein Chemistry and Chemical Biology Courses Approved

Protein chemistry has become a central component of contemporary bioanalytical and clinical chemistry. Though many existing graduate and undergraduate courses cover some aspect of protein chemistry, there existed a growing need for a comprehensive course that probes the depth required to train students in this rapidly developing field.



Professor John Engen has now developed such a course, Protein Chemistry, which was piloted in spring 2008. The graduate level course, CHMG222, is also cross-listed as an undergraduate version, CHMU620

Chemical Biology is an emerging discipline and rapidly growing field within the

## New Accelerated Graduate Curriculum for Fall 2008

Following much discussion and deliberation within the department, a new, streamlined curriculum was developed and formally adopted in May, 2008. The new curriculum will be featured in web and printed marketing materials for the graduate program which will be highlighted at professional meetings and conferences. The open houses in February 2009 will be used to debut the new curriculum to prospective students. The aim of the new curriculum is to provide a concentrated immersion into a chosen field in the first year which is then augmented by formal, practical laboratory rotations. A concentrated cumulative exam series commences immediately after the first year, followed by a problem-solving and independent development course to establish doctoral candidacy in the fall of the second year.

A concentration area is chosen from organic/medicinal, analytical/biological and physical/materials. Students then select five core courses within the discipline plus take at least one outside elective. In summer 1, students take CHMG200, Skills and Ethics, in concert with the new Laboratory Techniques course [CHMG730]. During summer 2, students take up to five cumulative exams [materials in part derived from the five core courses], then in fall of the second year, they complete formal education with Advanced Problem Solving Techniques [CHMG750], a new course which will involve multiple faculty from a given concentration area and will be delivered in a tutorial format.

Additional benefits to this approach will be to reduce or compress the training time for new students to become fully research active, to relate cumulative examination material more closely with the formal courses, and acceleration of the creative phase of doctoral research. It is expected that this will enhance students' capacity to form original research and will likely bring forward transition to RA status following a first year TA appointment.

department and profession, first signaled by the change in our name several years ago. As chemists provide solutions to problems in systems biology there is a pressing need for formal classroom and laboratory instruction in techniques unique to this field. When designing the course Principles in Chemical Biology for Chemists (CHMU621, CHMG221), Professor Beuning and colleagues were mindful of related offerings in biochemistry and related areas.



Principles of Chemical Biology instead teaches subject matter from a chemical perspective (structure, synthesis, modification), and thus the client base is substantially different. Principles of Chemical Biology will debut fall 2008.

# Faculty Update 2008

News from our faculty



Penny Beuning

Professor **Penny Beuning's** group continues to grow from strength to strength. A recent publication from her laboratory from the journal ACS Chemical Biology was selected as a highlight by their press office. Penny also developed the new course in Chemical Biology.



Bill Giessen

Professor **Bill Giessen's** group continued their research into the application of chemometrics-derived methods to the analysis, modelling and forecasting of financial markets. Their work received continued financial support from the corporate sector and had exposure at an international conference venue. Bill also oversaw this year's graduate cumulative examination series.



Rein Kirss

Professor **Rein Kirss's** research program in organometallic chemistry received funding to develop applications in medicinal chemistry. In order to devote more time to research and classroom instruction of the chemistry majors, Rein stepped down as Head Advisor, a post he has held for nearly a decade.



Mary Jo Ondrechen

Professor **Mary Jo Ondrechen** has been named North American Editor for Current Bioinformatics. Mary served on the 2007 Committee that evaluated the Chemistry Division of the NSF and as a panelist for their graduate fellowship program. Mary was elected to the Board of Directors of the American Indian Science and Engineering Society.



David Budil

With funding from the National Science Foundation, upgrades to the EPR facility have now been completed, resulting in a state of the art system. A number of publications appeared in print as a result of collaborations stemming from Professor **David Budil's** molecular modeling course [CHM G248/CHM U638].



Thomas Gilbert

Professor **Thomas Gilbert** continues to serve as Dean of the School of Education, housed within the College of Professional Studies. Tom was also active in the department teaching general chemistry to the majors, and as faculty advisor to the ACS Student Affiliates Group.



Ira Krull

Professor **Ira Krull** rounded out a successful year teaching graduate bioanalytical chemistry, with a symposium in his honor on June 13. Ira has agreed to continue as an instructor in the forensics chemistry program and as a departmental ambassador to the Israeli chemical community as he transitions to Emeritus Professor.



William Reiff

After teaching freshman chemistry in the fall semester, Professor **William Reiff** spent the remainder of the academic year interacting with the National Magnet Laboratory staff in Florida, where a number of productive, collaborative ventures are being advanced. This new work involves very high magnetic field Mössbauer spectroscopy.



Geoffrey Davies

Professor **Geoffrey Davies**, assisted by Dr. Elham Ghabbour, again hosted a very successful Humic Science & Technology Conference this year, attracting over 50 delegates from 11 countries and 19 U.S. states. The group and symposium was recently awarded a \$100 K grant from Arctech, which will insure the longevity of this popular conference.



William Hancock

Professor **William Hancock** is currently serving as president of the U.S. Human Proteome Organization [HUPO]. Bill's research group was selected by the National Cancer Institute as one of only seven sites nationally to receive funding as part of the new \$15.5 million initiative to study the glycobiology of cancer.



Philip Le Quesne

Professor **Philip Le Quesne** spent part of the academic year at the University of Auckland where an exchange program is being developed. Phil continued to teach graduate level organic synthesis and represent the department on university committees.



Eugene Smotkin

Professor **Eugene Smotkin's** fuel cell program is gaining momentum following the renovation of laboratory space on the fourth floor. His start-up venture [NuVant Systems] is now employing several coop students, and was recently feted in a regional business journal.



Max Diem

Professor **Max Diem's** spectroscopic methods to identify cancerous tissue in biopsies and cancerous cells among exfoliated cells was featured in BioOptics World, and is the subject of discussion with a number of biotechnology companies and potential clinical partners.



Robert Hanson

Professor **Robert Hanson** enjoyed a sabbatical year in connection with his Matthews Distinguished Professorship. Bob received a Mass Tech Transfer award in April for bringing patented work forward toward commercial development. Effective AY 2008-2009, Bob will serve as Graduate Coordinator.



Pam Mabrouk

Professor **Pam Mabrouk's** online resource for undergraduate researchers [WebGURU] was highlighted in C+E News and by the NSF and NIH. Pam also edited an ACS Symposium Series [Vol. 970] on "Active Learning." Additionally, Pam spearheaded design of a new laboratory for freshman engineering [CHM U152] in collaboration with Professor Paul DiMilla.



Paul Vouros

Professor **Paul Vouros's** research program continued to attract substantial investment from government and industrial sources. Aspects of his program, in collaboration with Dr. Roger Kautz, were featured in the journal Analytical Chemistry and in highlights from the ASMS conference.



John Engen

Following the opening of the Waters Mass Spectrometry facility, Professor **John Engen's** group has been actively establishing a number of partnerships in the biotechnology and clinical sector. Some of the more recent collaborations include Biogen-Idec, Sandia National Laboratory, and Dana Farber Cancer Institute.



Graham Jones

Professor **Graham Jones's** research program secured a number of active collaborations with biomedical and pharmaceutical partners in the New England area. Graham's group is also actively involved with the new Center for Translational Neuroimaging [CTNI], where they have developed proprietary methodology for the production of image contrast agents.



Alexandros Makriyannis

Professor **Alexandros Makriyannis** was honored by National Institutes of Health with a MERIT award. Alex's group enjoys numerous collaborations with departmental faculty including the groups of Drs. Vouros, Jones, Budil, Hanson, Karger, Hancock, and Engen.



Philip Warner

Professor **Philip Warner** continued to develop new applications of computational research to solve problems in mechanistic organic chemistry. Some of his research was featured in symposia at the 2008 Boston ACS National meeting.



David Forsyth

Professor **David Forsyth** served his last year as Graduate Coordinator, culminating in a very successful recruiting campaign which will again bring in 20 new PhD students this fall. David is also proud of finishing the last five hikes needed to complete all 46 of the 4000-foot peaks in the Adirondacks of NY, and reaching a total of 95 peaks in the Northeast.



Barry Karger

Professor **Barry Karger** was recognized with numerous research awards including the Torbern Bergman Medal, the Csaba Horvath Medal, and being elected to the Hungarian National Academy of Sciences. The Barnett Institute hosted a conference in March - Biogenics - which has led to a working relationship with the FDA and other regulatory agencies.



Sanjeev Mukerjee

Professor **Sanjeev Mukerjee** will serve as director of the newly formed university Center for Renewable Energy Technology [NUCRET]. One of its collaborating investigators, Professor Vasilis Gregoriou was featured in a CNN documentary on fuel cell technology.



Sunny Zhou

Professor **Sunny Zhou's** program in bioorganic and bioanalytical chemistry attracted attention from the biotechnology industry in the form of licensing agreements. In collaboration with researchers in Bouve College, Sunny's group received additional funding from the Autism Research Institute to study enzyme pathways and biomarkers.

## New Hire Dr. Ki-Young Suzie Byun



Dr. Ki-Young Suzie Byun has accepted a position as an academic specialist for AY 2008-9. Dr. Byun, who will initially teach a combination of organic chemistry and general chemistry classes, obtained her PhD at Emory University with Professor Dennis C. Liotta, followed by postdoctoral research with Professor Thomas D. Tullius at Boston University. Suzie is currently involved in the undergraduate chemistry curriculum at BU, where she holds a position as a lecturer, and is looking forward to working with us as we grow our undergraduate majors program. Welcome Suzie!

## DiMilla Honored by College of Engineering



Dr. Paul DiMilla was presented with an Outstanding Teacher of the Year Award by the College of Engineering at the end of the spring semester. Dr. DiMilla joined Chemistry and Chemical Biology in 2004 as a lecturer, was promoted to Associate Academic Specialist in 2005, and has served as the coordinator of the general chemistry program for engineering students. Dr. DiMilla received a Ph.D. in Chemical Engineering from University of Pennsylvania and was a postdoctoral fellow at Harvard University.

Congrats, Paul!

## Karger Receives Bergman and Horváth Medals

Professor Barry Karger received the Torbern Bergman Medal given by the Analytical Division of the Swedish Chemical Society in recognition of his fundamental and innovative scientific work essential for the development of separation science to a mature tool for the analysis of molecules of biological importance. The medal was presented at a ceremony in Sweden in early June, and the award was celebrated on June

23 at a reception at Northeastern's Egan Center. Professor Karger was also awarded the Csaba Horváth medal at a symposium held on April 14-15, 2008 in Innsbruck, Austria. The award symposium series was initiated in year 2000 by the late Csaba Horváth of Yale University, one of the pioneers in the field of separation sciences.

Congratulations, Barry!



## NSF Chair Helps University Land \$3.7M NSF Grant for Faculty Development

Northeastern University has been awarded a National Science Foundation ADVANCE Institutional Transformation Award entitled, "Advancing Women in Interdisciplinary and International Networks." This new 5-year institutional program is closely aligned with Northeastern's move toward interdisciplinary scholarship and increased global engagement. Professor and Chair Graham Jones is one of five principle investigators, along with Sara Wadia-Fascetti, Associate Vice-Provost for Faculty Advancement, Luis M. Falcon, Vice-Provost for Graduate Studies, Kathrin Zippel, Associate Professor of Sociology and Jackie Isaacs, Associate Professor of Mechanical & Industrial Engineering and Associate Director of the National Science Foundation funded Nanotechnology Sciences and Engineering Center.

The National Science Foundation ADVANCE Program aims to develop systemic approaches to increase the representation and advancement of

women in academic science and engineering careers, thereby contributing to the development of a more diverse science and engineering workforce. The ADVANCE Program supports leadership, dissemination, planning, and institutional transformation grants.

Northeastern University is one of nine universities in 2008 that will join a group of 32 ADVANCE Institutional Transformation sites across the country. This group includes the University of Michigan, Georgia Institute of Technology, University of Colorado at Boulder, University of Washington, University of Wisconsin-Madison, Case Western Reserve University, Columbia University, Kansas State University, Virginia Institute of Technology, Cornell University, Rensselaer Polytechnic Institute, Duke University, University of Arizona, and Brown University.

## Department Expands to Two Coop Model

With the number of chemistry majors approaching the 150 mark, the department changed the co-op program to a two division model. Chemistry students are now on co-op from January – June (division B) or July – December (division A). This enables us to provide year round coverage for industry leaders and expand our corporate ties. The two divisions ensure that we are able to provide our students customized co-op opportunities and to tailor their experiences based on lab and coursework knowledge. The inaugural division B class in January 2008 placed 11 students. The numbers will rise to around 30 students in January 2009, augmenting the typical placement for division A, which this July was 38 students.

The department in conjunction with the GSA hosted a career fair on February 27, 2008. Representatives from a large number of companies around the Boston area were present, including: Abbott, Agilent Technologies, Biogen IDEC, Merck, Waters Corporation and Wyeth Pharmaceuticals. Each company presented an overview of research in their organization, which was then followed by a Q & A session and networking opportunities for graduate and undergraduate students. Reflecting on the event coop coordinator, Jordan Swift, was overwhelmed by the enthusiastic response from students and employers alike. Students were especially grateful to investigate first hand specific job categories which will help them make informed decisions on internships and future careers. Given the success of the event we anticipate offering this service annually in the spring semester.

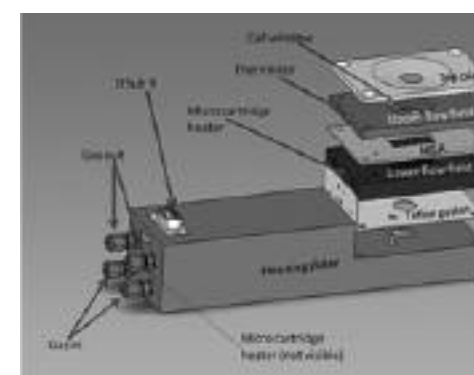


## Undergraduate Develops New Fuel Cell Prototype at NuVant Systems

Emily Lewis' interest in the environment and alternative energy sources led her to Professor Eugene Smotkin's laboratory for a coop position with a high tech start-up company, NuVant Systems, in March 2007. Currently a senior chemistry major, Emily designed a fuel cell (photo below) to be used for both infrared and x-ray absorption spectroscopy. Experimentation conducted at Argonne National Laboratory revealed its effectiveness for in situ x-ray absorption spectroscopy. Using this device, Emily was able to identify reduced oxygen species adsorbed on the cathode of the fuel cell. Her next step is to try to see the same species with infrared spectroscopy. Additionally, she designed the fuel cell to fit into a diffuse reflectance accessory for infrared spectroscopy, which will enable easy alignment. Unlike previous in situ cells, this is the first design that allows for multiple spectroscopic methods to be

performed. Emily described her coop experience as transformative and noted that she enjoyed both working with Professor Smotkin and yet having the freedom to direct the project. She commented that the project, being interdisciplinary in nature greatly broadened her knowledge of different subject areas. Among other things, Emily mastered a mechanical engineering design program to draw the design for the fuel cell and also had to learn electrochemistry, a subject offered as a graduate level course.

Emily has plans to continue making discoveries in fuel cell research here at Northeastern as she completes her senior year. As to the future, she is being actively pursued by a number of graduate programs based on her interest to obtain a Ph.D. in chemistry, and looks destined for great things. Keep up the good work, Emily!



Emily will be presenting the results of her work as an oral presentation at the Electrochemical Society Meeting this October.



# GSA News

The 2007-2008 academic year was an outstanding year for the GSA, and perhaps its most active. In addition to carrying forth its tradition of service to the graduate students and the department through the management of the colloquium series and organization of social events, the GSA expanded its involvement, helping to shape the department with the goal of enhancing its future. I would like to personally thank the work of two GSA executive members who are stepping down from their respective positions: Treasurer Pat Weiser and Secretary Meghan Johnston. It was a pleasure to work with them, and their work in the department will resonate in future years.

Two key developments were brought about by the GSA this year. First, and foremost, was establishing a curriculum committee. While there has always been a curriculum representative, it was recognized that this position was far too demanding and important for one person to manage. The committee is comprised of four members representing each of the four main areas of research/study in the department. This committee was charged with the task of evaluating the current curriculum system both internally and against other top universities. As a result of a survey conducted in November, the committee presented new ideas to the department. Our objective was to reflect the desires of current graduate students, while keeping us competitive with other top universities. As described on page 3, a new curriculum is now being implemented for the incoming class. It was a pleasure for us to play a role in its design since this restructuring of the curriculum is likely to improve student research productivity and prove more attractive to prospective students.

This theme of collaboration with the department is echoed in the other major event from this year. In February, the GSA helped organize a career fair in the department. Representatives from numerous pharmaceutical and biotech companies spoke with students and provided an overview of their company, the research being conducted and how they fit in the global market. After the presentations, each representative spoke with students, individually and in small groups, regarding employment opportunities at their company and offered advice about the job market as a whole. As our department continues to evolve, marquee events like this are vital in making Northeastern the destination of choice for employers. The first career fair was an enormous success and is expected to become an annual event.

Also in February was our annual graduate open house, where we, as students, promote our department and Northeastern to prospective students, as it was not long ago when we faced similar decisions. I am thrilled to report that over 70% of this year's incoming class attended the open house - a testament to the work of all those who volunteered. However, this event would not have been the success it was without the diligent work of Brenna Shurtleff and Paul LaBeaume, Admissions and Open House Committee leaders, whose tireless efforts made this the most successful Open House to date.

In addition to all the work that was accomplished, the GSA has another obligation to its members, and that is to arrange events to bring the department (faculty & students) together in a relaxed atmosphere away from the rigors of study and work.



CGSA Officers: Meghan Johnston, Adam Hendricks, Tom Arruda, Pat Weiser

We continued our traditional events including the annual International Day in October and the Holiday Party at the end of the first semester, while Vice-President Tom Arruda turned out burgers and sausage, despite heavy rain, as faculty and students celebrated the end of another great year together with a BBQ. It was here that the GSA presented its annual award to John Bottomy, who does most of his work behind the scene, but is an integral part of the program. I was fortunate enough to work for John as an Organic TA and still interact with him on a daily basis. John has an air about him that is noticed by all; his work ethic complemented by his down to earth demeanor is a shining example and truly represents the very best of our department. Summer was welcomed with the department's first cruise of Boston Harbor in June. We were joined by faculty members (who shall remain nameless) who were brave enough to join the students for dinner and an evening of memories aboard the Odyssey.

With a new year upon us, I wish all of you the very best and look forward to working for you with continued success as Tom and I welcome two new members to the executive committee: Jen Schubert as Treasurer and Agnes Rafalko as Secretary. I am personally grateful to all who have volunteered their time toward GSA events that have occurred over the past year. Your efforts and commitment are the reasons why our family continues to grow and our department improves with each passing year.

Cheers, Adam

## GRADUATE STUDENT AWARDS 2007-8

<b>Departmental Citizenship</b> James Glick	<b>Outstanding Teaching Assistants</b> Chris Allen Michelle Silva Tsun Au Yeung Ellen Swain Rose Gathungu Matt Trahan Joshua Klaene
<b>Excellence in Chemical Research</b> Stefano Gulla	

## UNDERGRADUATE AWARDS 2007-8

<b>Bernie Lemire</b> <b>Outstanding Senior Award:</b> Tsun Au Yeung	<b>Middler:</b> Sabrina Stucka Sophomore: Rhiannon Thomas Freshmen: Kayleigh Rowan	<b>AI &amp; Joy Viola Scholarship:</b> Kelly Barhite Sarah Pileeki Helen Trinh Pham
<b>Carole J. Shapazian Scholarships:</b> Junior: Gregory Morehouse	<b>Outstanding Undergraduate Researcher Award:</b> Jason Abbott	

# ACS Student Affiliate Chapter News

Over the past year, NUSAACS continued its established activities while adding a few new ones. We welcomed three new executive board members, Jackie O'Neil, Phil Hamzik, and Erin Ronayne, who join Andrea Lebed and Blair Lapointe. Together, we have continued to meet our goal of expansion and retention of our membership. The combination of revamped meetings and new events with more traditional activities has greatly increased the club's effectiveness and presence within the chemistry department and greater school community.

This year the executive board worked to change the style of club meetings to make them more productive, which proved a success. We now incorporate student presentations and professional development seminars (including subjects such as abstract writing and interview skills) and follow these seminars with chemistry flavored games such as chem-jeopardy. This format made the meetings well rounded and increased average attendance.

The fall semester started with our members presenting and participating in the Fall National ACS meeting in Boston, MA. The group again participated in National Chemistry week with demonstrations in Centennial Quad. To keep in line with this year's theme, "Having a Ball with Chemistry," we had many interactive activities including slime and polymer key chains, along with demonstrations including a pH rainbow, and finally an opportunity for students to make liquid nitrogen ice cream, which was a big hit. Additionally, we continued our participation in the ACS's Chemvention competition. The social events for the fall semester included a trip to Canobie Lake, Wojcik Farms, and a Celtic's game.

The spring semester brought our annual trip to Nashoba Valley Ski area for some snow tubing. Due to the large emphasis on "green" living, we found it necessary to take full advantage of this year's Earth day to advertise this style of living. Our club partnered with SEA, (Students for Environmental Action), to plan and execute a Recycling Fashion show and Festival. The event had many educational games promoting ways to live green, and culminated in a fashion show, which featured student designed outfits made from entirely recycled materials. In addition to this event, members participated in the city-wide Charles River Clean-up. Lastly, we continued our involvement in the recruitment of new students at the University's open houses.

Overall, the club has accomplished many new things this year, all contributing to the club's advancement. This coming year will see the club send more members to the Fall National ACS meeting in Philadelphia, PA, along with continued dedication to the further advancement and expansion of the group. This year has seen many fun and exciting events, and we can't wait to see what this next year has in store for us.

Thank you, and see you next year. Blair Lapointe and Andrea Lebed



ACS Group Visits Wojcik Farms



Awardees l to r: John Bottomy [GSA Award], Matt Trahan [TA], new Graduate Program Coordinator, Bob Hanson, Josh Klaene [TA], Tsun Au Yeung [TA], GSA President Adam Hendricks, Michelle Silva [TA], Rose Gathungu [TA], Chris Allen [TA], Ellen Swain [TA]



Shapazian Awardees: l to r: Rhiannon Thomas, Tsun Au Yeung, Chair Graham Jones, Sarah Pileeki, Greg Morehouse, Carole Shapazian



2008 B.S. and B.S.-M.S. Graduates: Front row l to r: Tsun Au Yeung, Catherine Cote, Catherine Norwood, Melissa Palashoff  
Back row: Jason Abbott, Michael Ordazzo, Samantha Rosenberg, Paul Weglinski, Chris Massero

## GRADUATES 2007-8

<b>Bachelor of Science (Chemistry)</b> Jason Abbott Tsun Au Yeung Catherine Cote Steven Mathieu Michael Ordazzo Samantha Rosenberg Paul Weglinski Nick Yankauskas	<b>Master of Science</b> Vincent Abeyta Eva Binnun Gregg Chenail Danielle Falcone Carmelina Freni Majlinda Kullolli Jonna Lindholm-Ventola Peiwu Qin	<b>Doctor of Philosophy</b> Haven Baker Tatiana Plavina Ying Wei Huyuan Yang Ye Gu John Williams Xiaoyang Zheng Joseph Ziegelbauer	<b>Bachelor of Science (Biochemistry)</b> Frank Anthony Aliganga Alessandram Carcaterra Raina Cela Si Chen Timothy Desmet	Hyun Kyoung Kim Bilyana Koleva Lindsey Lambalot Eunice Lee Jacob Lotstein Kristy Mcguire Jessica Miller	Anthony Orio Ryan Richardson Eileen Ryan Bilge Senturk Brendan M. Sullivan Matthew Urbach
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## Krull feted with symposium and banquet

Marking his formal retirement and transition to Emeritus Professor at Northeastern, a symposium titled "Proteomics, Peptidomics and Metabolomics" was held to honor Professor Ira Krull on June 13, 2008. The symposium, followed by a banquet, featured 19 speakers including former students, and colleagues and was attended by over 100 delegates from the U.S.

Northeastern University and other academics spoke at the banquet, including Barnett Institute Director, Barry Karger who signaled the impact Professor Krull has had in the field of chromatography and congratulated him on his accomplishments. Department Chair Graham Jones said, "Ira has exemplified the Northeastern University model, combining innovative research with practical applications. As a result, his work has resulted in sustained and substantial contributions in separation science, and it is a fitting tribute that so many from industry are recognizing him today." Jim Stellar, Dean, College of Arts and Sciences, was on hand to laud Ira for being an

ambassador of the university through his efforts to make and maintain connections with academia and industry in Israel.

Professor Krull's contributions to analytical chemistry have been numerous and influential. Over the past four decades, he has published over 300 research papers, authored over 500 abstracts, and has been a much sought after guest lecturer having presented in 16 countries on 3 continents. As an emeritus professor, Ira will continue teaching activity both on the NU campus and in Israel. In connection with the latter, he has been invited to be the Kolthoff Fellow in Analytical Chemistry within the Institute of Chemistry at Hebrew University in Jerusalem, Israel, for the spring semester of the 2008-2009 academic year.

We congratulate Professor Krull on his career, wholeheartedly thank him for his contribution to the department, and wish him all the best with his future activities as Emeritus Professor.



Graham Jones presents gift to Ira Krull and his wife Erika

and the oxygen molecule that the protein serves to carry to the muscle. Lab technician Alexandra Henriksen then introduced the group to a GC/MS instrument and experiments routinely performed in the chemistry majors program. The visit was rounded out with an overview of the chemistry major and co-op program given by Chair Graham Jones, Professor Rein Kirss, and Jordan Swift.



Professors Budil and Krull assist Needham High School students in using a CCB molecular modeling program from Professor Budil's course at NU.

### CHEMISTRY & CHEMICAL BIOLOGY FACULTY STATISTICS 2007-8

- Taught 255 undergraduate course sections [360 semester hours]
- Taught 48 graduate course sections [144 semester hours]
- Annualized grant holding > \$6.5 million
- Total grant holding > \$18 million
- Submitted research proposals totaling in excess of \$32.5 million
- Produced 73 articles in refereed journals, 2 edited books, 3 book chapters, and 13 patents.
- Supported 87 graduate students and 16 research fellows

## Research Retreat Focuses External Funding

With its theme of "Diversification of the Funding Base in the Department," this year's research retreat, held at the Batterymarch Conference Center on May, 9, 2008, included invited guests from the Technology Transfer Office: Tony Pirri, Director; Susan Keyes, Tech Transfer Executive; and Jeff Kosiba, Intellectual Property Specialist, as well as Eugene Mahr, Senior Officer, University Corporate Partnerships; Karen Drew, Director of Development, Principal Foundation Gifts; and Patty Flint, Associate Dean & Director, Development. Faculty briefly presented their expertise, and each division [Tech Transfer, Corporations, Foundations, Development] presented an overview of their area and how they can assist the department. Following this, the faculty broke into discussion groups by these divisions to identify barriers, priorities and opportunities, and reconvened to share their insights. The department

and divisions represented will work on implementing many of the ideas that were generated at the retreat in the coming academic year.



l to r: Invited guests and retreat discussion leaders Jeff Kosiba, Bob Hanson, Sanjeev Mukerjee, Karen Drew, Eugene Mahr, Graham Jones, Tony Pirri, John Engen, Susan Keyes, Max Diem, Patty Flint, Bill Giessen

## Staff News

Congratulations to **Rich Pumphrey** and his wife Julie on the birth of their daughter Rita Catherine on December 18, 2007. Daughters Julia, Kathleen, Mary and Anna are proud siblings, and Rich is delighted that he can form a basketball team now!



**John Bottomy**, organic lab technician, received the 2008 Graduate Student Association Award for his service to the graduate students. The students recognized him for "going above and beyond his job's responsibilities to assist them".

After nearly five years of service as executive assistant, **Shari Khalil** has moved to a new position at the university in the College of Business Administration. We thank Shari for her service and wish her all the best in her new job.



Joining us is **Cara Shockley**, who will be taking over as executive assistant to the chair. A native of California, Cara, came to New England for her bachelor degree (University of Connecticut) and has been pursuing a part-time master of science through the College of Professional Studies. Welcome, Cara!

## News from Hurtig

Department Bids Rozners Fairwell

Following 6 years of successful, productive service in the department, Dr. Eriks Rozners has decided to accept a position as tenured associate professor at SUNY-Binghamton. In recognition of his outstanding service and contributions to Northeastern, he was honored with a reception on April 16, 2008, where he was presented with gifts from students and faculty.

We wish Eriks and his family all the best for continued success!



L to R: Eriks Rozners, Graduate student Dong Ma and Professor David Forsyth at the reception

Congratulations to our alumni on their successful careers! We welcome news from you as well as visits if you will be in the area. Many of our alums have asked how they can assist our current students and programs. Some have chosen provide funding for awards, scholarships, co-ops and travel funds for professional scientific meetings. We would be delighted to discuss these and many other opportunities to support the department's activities with you directly. For a confidential and informal discussion, please contact the chair, Graham Jones, at gr.jones@neu.edu or 617-373-2282.

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**H U S K Y  
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