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HUSKY
Chemist

Sept. 05

Center for Drug Discovery Opens!

Northeastern University opened its doors to the NIH funded Center for Drug Discovery in Hurtig Hall in January 2005. Center Director, Professor Alexandros Makriyannis, was hired as part of the \$75 million academic investment initiative and holds an academic appointment in the Department of Chemistry and Chemical Biology. The Center, which is backed by over \$12 million in federal funding (primarily from the NIH), hosts over 30 graduate students and staff scientists. Facilities include state of the art biochemistry laboratories, a radiochemistry suite, tissue culture facilities, a custom-designed synthetic chemistry laboratory and a biophysical chemistry center. The latter will house a custom-designed 700 MHz NMR instrument capable of analyzing both liquids and solids. The research focus of the Center involves many aspects of targeted drug design aimed at the neurotransmitter receptors. Examples of recent work include pioneering discoveries on cannabinoid receptors and advances in the design of appetite suppressing small molecules which could have ramifications for the control of obesity.

Makriyannis' arrival will bolster our medicinal chemistry capacity and have a beneficial impact on our graduate program. An NIH training grant for the development of an interdisciplinary Ph.D. program in medicinal chemistry has just been awarded through the Center and our graduate students are already benefiting from its initiation.



Photo: Craig Bailey

(l to r) Dean Stephen Zoloth, Professor Alexandros Makriyannis, Provost Ahmed Abdellal, Dean Jim Stellar

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It is with much excitement that we look forward to the next academic year. Through the dedication of colleagues and the backing of the University, our department is moving forward at an impressive rate, and we have much to celebrate as we close on the 2004-5 year.

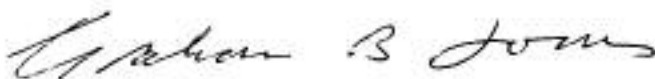
The revitalization of our undergraduate chemistry majors program moved into top gear. The dedicated lecture and laboratory sections for majors went through its first cycle in 2004-5 and was a great success by all accounts, giving students an ideal grounding for research-based co-op experiences many will embark on. Our first crop of majors in the BS-MS program are due to start the MS research phase this fall and the program has already attracted sponsorship from the pharmaceutical industry. This, coupled with other curricular innovations recently introduced, has translated to robust enrollment to our program, as last year's entering class of 24 students will be followed on its heels by a Fall 2005 entering class of 26. Not only are we well on target to achieve our goal of a steady state of 100 majors, but we have become one of the highest yielding departments on campus in a short time. In order that we maintain our competitive edge, it will be important to continually innovate with our curriculum. In this regard, we are set to introduce what is likely to be an extremely popular offering in 2006 — a new forensics chemistry course. Approved by the University in 2005, this course will link us with the College of Criminal Justice and has already resulted in discussions with the Massachusetts State Crime Laboratory on the possibility of us becoming a dedicated training academy for forensics science.

Our doctoral program also continues to grow both in numbers and stature. Driven by recent hires and growth in external funding, we have recruited an incoming class of 16 students with very strong credentials for Fall 2005, which will bring our total graduate enrollment to 70. The recently introduced co-op PhD program continues to attract interest, with the first group of students now entering the research phase, and we are currently in discussions with Pfizer, Bristol Myers Squibb, and Wyeth-Ayerst on programs for their employees.

Bolstered by President Freeland's Academic Investment Plan, the department is in the process of hiring a number of additional faculty and establishing new research facilities. The first of these hires, Professor Max Diem, will join us in January 2006. Max is a vibrational spectroscopist and his program will complement our existing strengths in clinical proteomics. Several other faculty hires are pending making for exciting times ahead for colleagues. The NIH funded Center for Drug Discovery, led by Alex Makriyannis, opened doors in the Hurtig basement in Spring 2005. This capability in medicinal chemistry and biomedical imaging will have a marked impact on our graduate program, and its external funding base when, combined with that of all other faculty colleagues, will rank the department as one of the highest funded units on campus. During 2005-6 our search will remain active, and we expect to hire additional colleagues which will help propel us to the next level.

None of these achievements are possible without the dedication and energy of the faculty and staff we have in our department. While growing leaps and bounds on curricular reform and research growth, colleagues taught 13,000 semester hours at undergraduate and 900 semester hours at graduate level in 2004-5. This output is commendable, ranking us as one of the most efficient units on campus. Enrollments were up by 9% and 21% respectively on the previous year, suggesting our offerings continue to be viewed as popular, bucking the trend in many competitor institutions.

As we look ahead to the 2005-6 academic year, there is much to be thankful for. Our future is bright and we have huge opportunities at our disposal. It is a pleasure to help lead this department forward and share in its success story.



Graham Jones



Photo: Craig Bailey

Chemistry & Chemical Biology Faculty Statistics 2004-5

- Annualized grant holding > \$ 4.5 million;
Total grant holding > \$ 12 million.
- Submitted proposals totaling in excess of \$15 million
- Produced 58 articles in refereed journals, two book chapters, one edited book and 110 presentations
- Supported 66 graduate assistants and 20 research fellows

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New Forensics Chemistry Course



A new forensics chemistry course was designed (and approved) this year with input from industry, professional societies and alums working in the field. The course, comprised of a lecture and integrated laboratory, will be offered for the first time in summer session I, 2006. Following its introduction, it is anticipated that this course could gain designation as a "core" course, and interest has been expressed by the College of Criminal Justice.

This course [CHM U341] will address students' demands for more applied science courses to better prepare them for co-ops and allow them to further expand career options. Additionally, coursework in forensics will provide potential employers with better-trained graduates, as the students will not only acquire analytical competencies essential for forensic science work, they will also develop crucial critical thinking skills. The course strives to stay current with students' and employers' requirements and capitalize on the public interest in forensics.

The lecture session will introduce the theory and fundamentals of a particular assay utilized for forensic analysis of evidence. Subsequently, a sample case will present a possible crime scenario and available evidence. Students will have an opportunity to discuss how to use the instrumentation and assays they have learned in order to best study the evidence. A crime scene will be staged in the laboratory, and students will determine what evidence is useful and what instrumentation to use to "solve the case." After a brief class discussion, students will perform whatever experiments on the evidence they deem necessary to try to determine the events of the crime.

New Laboratories for Majors Open

Connected with our shift to provide dedicated sections for chemistry majors was the opening of the new majors laboratories. In addition to greatly expanding the material covered in lecture sessions, the laboratories are designed to closely mimic the experience that students will encounter on industrial co-op placements. Based on feedback from an industrial advisory group, the laboratories, which opened in fall 2004 focus on inquiry driven experiments, expose students to contemporary methodologies and equipment and occupy 6-hour sequences as opposed to the conventional 3-hour sequence for non-majors. The expectation is that, following completion of the freshman and organic laboratories, students will transition to an independent project prior to placement in their first co-op. This will then provide an excellent grounding for those who subsequently wish to enter our BS/MS program.

Commenting on the new laboratories, Prof. Rein Kirss, general chemistry laboratory director said, "From an instructor's perspective, the sections dedicated to chemistry majors nurtured a sense of camaraderie among the students. By having the same classmates in the laboratory section as in lecture, I observed the development of team-building and collaboration that I have not seen in larger service courses." According to organic laboratory director, Prof. Robert Hanson, "The experience was successful for both the students and instructor. The students were able to go beyond the scope of the experiments described in the lab texts and experience firsthand problem solving. The instructor had the opportunity to provide expanded background material, typically from the research laboratory, for many of the experiments that were performed. This will allow us to go from strength to strength in the next cycle and transition students into complex research projects."

Undergraduate Program Retreat

On March 19, 2005, faculty engaged in a half-day workshop with a focus on the undergraduate program. The intent of this successful event was to evaluate progress in the development of our majors program and identify opportunities for growth including the introduction of new curricular options. The event was coordinated by Prof. David Budil. After an overview of progress in the majors program in General Chemistry and Organic Chemistry, presented by Profs. Rein Kirss and Robert Hanson, members of CEUT and the GE Master Teachers group presented a workshop on Student Assessment for Freshman Chemistry. The retreat then broke out into discussion groups led by Profs. Mary Jo Ondrechen, Sanjeev Mukerjee, and Tom Gilbert on the topics of Departmental Policies, Advanced Physical Chemistry Curriculum, and Advanced Analytical Chemistry Curriculum, respectively. As a result of this retreat, several action points emerged including a retooling of Physical Chemistry 1 and 2 and their associated laboratories to include relevant topics in biophysics and materials science for Fall 2006, and the introduction of a new graduate-level physical chemistry course to be offered in Spring 2006. Prerequisites for bioanalytical chemistry were also changed for chemistry majors in order to fit this important course into the undergraduate curriculum.

Co-op Ph.D. Program Enrolls First Student

Having successfully completed the cumulative examination series, Roushan Afroze is the first student to commence Ph.D. studies through our co-op Ph.D. program. She will pursue the research phase of the degree while maintaining full-time employment as a Research Scientist at Bristol Meyers Squibb, where she has been employed since 2002. Roushan received BS and MS degrees in Chemistry at Dhaka University in Bangladesh and an MS in organic chemistry at Tufts University. Her university research advisor is Prof. Graham Jones, and she will be researching applications of microwave accelerated organic synthesis. Welcome aboard!



Faculty Update 2005



Bolstered by funding from the NSF, **Professor David Budil** is currently establishing a biological magnetic resonance core facility for proteomics researchers across campus. David's group continues to collaborate with researchers at the National High Magnetic Field Laboratory in Florida and on campus, including RSDf funded programs with colleagues in Arts and Sciences and Engineering.



Professor William Hancock's proteomics program continued to gain momentum and currently involves a group of 12, with a research income of over \$ 1 million per year. Bill is also editor of the ACS journal Proteome Research and educational coordinator for the University's Professional Master of Science in Biotechnology program.



Professor Geoffrey Davies' research program in humic substances with Dr. Elham Ghabbour continues to flourish. In addition to training numerous undergraduate researchers, they also hosted the Humic Substances Science & Technology VIII Conference on the NU campus this spring and the whole group presented at an international conference in San Carlos, Brazil.



Professor Robert Hanson's medicinal chemistry program had another strong year and benefited from a number of academic and industrial collaborative ventures. Bob also headed up the intensive organic laboratory course for our majors which helped our students prepare for research intensive co-op experiences.



Professor David Forsyth returned from sabbatical in 2005 and was appointed Executive Officer and Graduate Coordinator. In addition to helping launch the Co-op Ph. D. program, revising departmental print and web publications, and revamping graduate seminar and cumulative exam procedures, he oversaw this year's highly successful graduate recruiting drive.



Professor Graham Jones' research program had a productive year and benefited from several collaborative partnerships with clinical groups at the Harvard Medical School. Graham gave the plenary lecture at the ACS Pharma Leaders Conference this past fall and was appointed to the editorial board of Current Medicinal Chemistry.



Professor Bill Giessen's interdisciplinary research program on the application of chemometric methods in market economics continues; he delivered three invited papers at the Nikkei Econophysics Workshop in Tokyo last fall. Bill continues to serve as Associate Director of the Barnett Institute.



Professor Barry Karger's group continued to secure substantial funding and recognition for their work on proteomics and biomarker identification. Barry continues as Director of the Barnett Institute, serves on a number of scientific advisory boards, and was involved in establishing 2 spin out companies this past year.



Professor Tom Gilbert continues to serve as Dean of the School of Education and as advisor to our ACS Student Affiliate chapter. Tom piloted the new freshman chemistry for majors course in 2004 which proved highly successful.



As head advisor, **Professor Rein Kirss** has reinvigorated a research program for students in the upper stages of the BS/MS degree program. A number of corporate partners are involved in this program, which is already having a significant impact on our undergraduate enrollments. Rein also ran the new 6 hour laboratories for our freshmen majors.



Fresh from his sabbatical studies at the Boston University Mass Spectrometry Resource Center, **Professor Ira Krull** is currently redesigning upper-level undergraduate and graduate curricula, including courses in glycomics and forensics chemistry. For AY 2005-6, Ira will be coordinator for our freshman chemistry programs.



Professor Philip Le Quesne continued to teach Advanced Organic Synthesis in the graduate program and Organic Chemistry II for our undergraduates. Phil also leads our departmental colloquium program which has attracted speakers from around the globe and has already lined up a number of themed symposia for the coming year.



Professor Pam Mabrouk returned from a sabbatical at MIT last fall and continued her research program into green chemistry and its application in the synthesis of nanomaterials. In addition, Pam continues to play an active role in the Center for Effective University Teaching and has obtained funding from a variety of sources for her work on pedagogical innovation and mentoring.



Professor Alexandros Makriyannis' group settled in their laboratories and the Center for Drug Discovery headquarters. The Center employs over 30 students, post-doctoral fellows and research professors working on NIH funded work, a major component of which is studying the endocannabinoid system using chemical, biochemical and biophysical approaches. The CDD is currently engaged in the development of new medicinal chemistry and drug discovery curricular options.



Professor Sanjeev Mukerjee's work on fuel cell chemistry continues to attract international attention and has been featured frequently in the popular press. Sanjeev is one of the leaders of the campus nanotechnology initiative and has maintained a substantial funding base from federal and corporate sponsors.



Mary Jo Ondrechen's group continued to develop unique methods for prediction of functional information about gene products. The group is making predictions about newly-determined protein structures from the Structural Genomics initiative, including novel folds. This research work was featured on the cover of the May 2005 issue of *Proteins: Structure, Function Bioinformatics* (Wiley) and has resulted in her being a plenary lecturer at a number of conferences.



Professor William Reiff had another strong year of scholarship with >10 publications resulting from his collaborative work on applied spectroscopy. Bill is also active in the redesign of our physical chemistry laboratories which will move into a new space (fourth floor Hurtig) in AY 2005-6.



Professor Eriks Rozners' research program resulted in several publications, invited lectures and conference presentations, and in an invitation to present a plenary lecture at the international Paul Walden Symposium in Riga. New applications of his work on RNA mimics has attracted the interest of the RNA interference community, a field which holds great promise for molecular therapeutics. Eriks also developed the new Organic Chemistry I course for our majors.



Professor Paul Vouros' research group grows from strength to strength. New multimillion dollar federal grants were awarded and additional sponsorship was received from instrument manufacturers in the mass spectrometry community. The research group (10) continues to attract new members.



Professor Philip Warner continued to develop and invigorate our graduate physical organic chemistry program and is engaged in the integration of ab initio methodology with our molecular modeling courses. Phil also initiated a tutorial system for pharmacy students in undergraduate Organic Chemistry and served as liaison for our organic chemistry laboratories.

New Hire

Professor Max Diem



In fall 2005, the department is delighted to welcome on board Professor Max Diem from Hunter College, City University of New York. Prof. Diem is the second departmental appointment connected with the academic investment plan and will add an exciting dimension to our biophysical chemistry programs. Diem received the Vordiplom (BS) from the Universität Karlsruhe, Germany and Ph.D. from the University of Toledo.

Diem is author of 120 publications, the book *Introduction to Modern Vibrational Spectroscopy*, holds several patents and has major funding from the NIH for his work on vibrational spectroscopy applied to clinical diagnostics.

Commenting on Diem's arrival, Vice Provost Malcolm Hill stated, "His appointment will bring a new dimension to proteomics research both in the Department of Chemistry and Chemical Biology and across campus. This field is highly significant, tying basic research at Northeastern with clinical applications at neigh-

boring medical institutions, and is a major thrust area both for the NIH and our local biotechnology industry. Professor Diem's research program will complement that conducted in Chemistry and Chemical Biology, The Barnett Institute, Physics, Biology and in CENSSIS, and provide visibility for the University at the international level."

Diem's laboratories in 316 Hurtig are currently being renovated in time for arrival of his group in late fall 2005. Prof. Diem will be joined by his wife of 31 years, Mary Jo. Welcome!



Visual image (left) of a cell in metaphase of mitosis, and Raman spectral images of the same cell based on DNA (middle) and protein (right) intensities.

Mass Spectrometry Group Lands Major Award

Prof. Paul Vouros' mass spectrometry group continues to flourish and is attracting the attention of clinical partners and federal sponsors alike. This year alone, National Institutes of Health grants and contracts worth over \$2 million were awarded, bringing the total in the last 5 years to over \$5 million. The latest award from the NIH partners his group with clinical research teams at the Hutchinson Cancer Center (Seattle), a designated "Comprehensive Cancer Center" and leader in innovative therapeutics. The group, which studies trace identification of biomolecule-macromolecule adducts, currently consists of 10 personnel. Over the years, Paul has trained 35 Ph.D.s, 8 postdoctoral associates, 5 undergraduates and 3 staff scientists. Paul attributes his continued success to "dedicated focus on



problems of clinical significance as well as dedicated graduate students with whom I have had the fortune to collaborate." We look forward to many fruitful years ahead.

Vouros research group: Back row, l to r: Dennis Szymanski, Terrence Black, Prof. Paul Vouros, John Williams, Jim Glick
Front row: Susie Schiavo, Dr. Wennan Xiong, Caroline Ceailles, Dayana Argoti, Elaine Ricicki
Missing: Daren Levin, Qing Liao

Professor Krull Back From Sabbatical

Professor Krull enjoyed a productive fall 2004 semester on sabbatical leave at the Boston University Medical Center's Mass Spectrometry Resource Center. Prof. Krull worked within the research group of Dr. Joe Zaia, Associate Director of the Center, focusing on the development of newer methods of tagging carbohydrates and sample preparation. This work is part of a larger research program in glycomics, i.e. the determination of how carbohydrates change in nature and concentration as a function of the cellular or biofluid state. The lab work involved derivatizing standard glycos and then developing an optimized approach to remove the excess reagent from the final derivatives, prior to performing nanospray ESI-MS on the final, tagged glycos. Krull reflects, "It was a very worthwhile and enjoyable sabbatical, and I look forward to incorporating this technology into the glycomics program at NU."

Professor Sanjeev Mukerjee

Towards a More Portable World: A Research Profile

At Northeastern University, the Nanomaterials for Portable Power laboratory, with Professor Sanjeev Mukerjee as Principal Investigator, is emerging as an advanced cutting edge research center for developing the science of electrochemical energy storage and conversion. The technology, based on efficient charge transfer at electrochemical interfaces, is the focal point of a new paradigm for future transportation and consumer electronics. Better batteries, supercapacitors, and fuel cells are the primary avenue for enabling a truly wireless world without any need to plug into a wall socket for power. The realization of these devices has the power to revolutionize the way we work and live.

Their research facility consists of three separate laboratories, with a total floor space of 3500 square feet, located on the third floor of the Egan Research Building, and is well equipped for new materials development and characterization. Their prime focus is materials development, which encompasses new electrocatalysts, polymer electrolyte membranes for proton exchange membrane fuel cells, and intercalation compounds for Li-ion batteries. At the present moment, the research group is comprised of eight graduate

students, four postdoctoral research associates and two industrial scholars. Research covers both fundamental studies of structure property relationships with new materials using tailored synthesis. These projects are sponsored by several federal sources, principally from ARO, DOE and NSF. In addition, applied research for several corporate partners is being conducted; these include De Nora, Foster Miller and BASF. Further, two start up ventures, Protonex Corp., and Integrated Fuel Cells, have emerged from active collaboration with the Mukerjee group.

Taking advantage of Northeastern's culture of practice-oriented research and the local talent pool of young graduates and undergraduates, the group plans to foster a world class facility which translates cutting edge science from the most fundamental levels to applications. Recognizing the importance of the group's research, Mukerjee's program has become a cornerstone of the university-wide initiative in nanomaterials. The University is committing substantial resources to this program over the next five years, and Sanjeev's leadership in the area will be a key driver.



Mukerjee research group (left to right): Wen Wen, Laisheng Sun, Karthikeyan Ramamoorthy, Jamie Lawton, Thomas Arruda, Satish Sathiyavageswaran, Cormac O'Loaire, Sanjeev Mukerjee, Joe Ziegelbauer, Madhu Saha, Nazih Hakim, Lajos Gancs, Brian Hult

Explosive Growth in External Funding

Bucking national trends, a raft of external awards have recently been secured by Chemistry and Chemical Biology faculty. In addition to the currently held grants and contracts (\$4.5 million), recent awards to Paul Vouros (\$1 million), Barry Karger (\$1 million), Mary Jo Ondrechen (\$400,000), and Sanjeev Mukerjee (\$1 million) bring our funding base to a record high. This success, coupled with the Center for Drug Discovery (\$12 million in funding) and the recent hire of Max Diem (\$4 million in grants), will make us one of the highest funded department per faculty member on campus! The ongoing investments in the department through the \$75 million academic investment initiative will help transform us into a research-driven flagship department.

Graduate Student Association News

The GSA organized many activities for both the graduate students and the department during AY 2004-5. As in past years, we started off with the annual welcome barbeque in the fall, where new and continuing graduate students have an opportunity to meet. International Day, an event where students share dishes representative of their country or heritage, and the Holiday party in December, were both well attended and are on their way to becoming department traditions. We added a new twist to the spring barbeque with the introduction of the student/faculty soccer game, which took place at Millennium Park in West Roxbury. Although it was a chilly day, grad students were kept warm with the excitement of their decisive 3-0 victory over the faculty and staff. The match was followed by the department awards ceremony (see below), which included the newly established GSA Appreciation Award presented to Charlie Norman for his always pleasant, always helpful presence around the chemistry building.

One of the goals of the GSA this past

year was to introduce a variety of social activities off campus to the department members. Last fall, a group attended the Hyland Orchard and Brewery Harvest Festival held in Sturbridge. During the winter months, we organized a snow tubing trip to Nashoba Valley Ski Area, a very well attended bowling night, and a group attended a Northeastern hockey game.

We hope to continue organizing different events for the members of the chemistry department and always appreciate any input from the faculty, staff or students as to the activities people would enjoy. I look forward to serving for my second year as president along with Stefano Gulla-Vice President, Joe Ziegelbauer-Treasurer, Dayana Argoti-Secretary and General Officers: Heather Brodtkin, Haito Jiang, Jim Glick, Jamie Lawton, Tom Arruda, Adam Hendricks and Caroline Ceailles.



— Neil Jordan



GSA Holiday Party



Victorious Graduate Student Soccer Team
 Back row, l to r: Haven Baker, Dong Ma, John Williams, Qun Xu, Tao Yu, Satish Satiyavageswaran, Cormac O'Loaire, Stefano Gulla, Peter Yuan
 Front row: Wen Wen, Ed Hua, Lingyun Li, Caroline Ceailles

GRADUATE STUDENT AWARDS 2004-5

Departmental Citizenship

Terrence Black
 Susie Schiavo
 John Williams

Excellence in Chemical Research

Vivek Srinivasamurthi

Outstanding Teaching Assistant

Freshmen: Adam Hendricks
 Christina Orazine
 Organic: Ed Hua
 Upper Level: Stephano Gulla

UNDERGRADUATE AWARDS 2004-5

Outstanding Senior

Courtney Hrank

Al & Joy Viola Scholarship

Nicholas Yankauskas
 Zachary Robinson

Carole J. Ulrich Scholars

Senior: Courtney Hrank
 Junior: Joelle Torregrossa
 Middler: Matthew Daniels
 Sophomore: Adam Visentin
 Freshmen: Lauren Chapman
 Greg Morehouse

Bernie Lemire Awards

Lauren Chapman
 Kristen Bailey

2004-5 GRADUATES

Bachelor of Science (Chemistry)

Karla Gandiaga
 Courtney Hrank
 Nicholas LoConte
 Kenix Wang

Bachelor of Science (Biochemistry)

Kimberly Washington
 Jennifer Curato
 Rickerson Felix
 Kathryn Stahle
 Cuong Tran

Doctor of Philosophy

Jimmy Flarakos
 Vivek Srinivasamurthi
 Lei Zhang

Master of Science

Rachna Badlani
 Longfei Xie
 Balasundaram Kumarasamy
 Kristen Claire Buteau
 Melissa L. Defilippo
 Christopher A. Hamman
 Laura Jeanne Isakson
 T. John Kauppinen, Jr.
 Becky Sara Leifer
 Vijayalakshmi Ramanan
 Harry John Sterling

ACS Student Affiliate Chapter Grows



Checking in attendees at NESACS Education Night (l to r) Adam Visentin, Stephanie Muser, Micki Miskiv, Joelle Torregrossa

ACS competition that involved a cooperative effort by undergraduate students interested in chemistry who integrate their problem-solving skills and creativity to meet a series of challenges given by the ACS with inventive and innovative original designs. For a second year in a row, the group organized the NESACS Education Night, including a social hour, dinner and the 861st meeting. Members were pleased that this successful event strengthened their connection with the Northeast Section. Students also organized a visit from representatives of Millennium Pharmaceuticals who spoke of their research in the area of cardiovascular drugs and inflammatory diseases as well as possible co-op and career opportunities.

The group's numerous contributions to our department included participation in the Open House sessions for admitted prospective students. Representing a range of diverse interests and career goals, the group shared their experiences as students with the prospective group, and set the foundation for bringing them into the chemistry community when they enroll in fall 2005.

With the creation of a committee in charge of organizing community events, the ACS group expanded their community involvement. In addition to judging entries at the Boston Science Fair, the group has begun to make contact with area high schools, with a goal of creating a link between themselves and young chemists. As a part of this effort, several members tutored AP chemistry students at John D. O'Bryant High School and invited the AP students to conduct laboratory experiments with them at the university. Extending beyond the realm of science, members also engaged in community outreach, including at Rosie's Place, a shelter for women who are homeless or the victims of domestic abuse.

Social activities enjoyed this year included snow tubing at Nashoba Valley, a trip to Six Flags New England on Halloween, a holiday party and dinners at area restaurants.

Officers elected to serve for the 2005-6 AY are: Micki Miskiv, President; Amy Kallmerten, Vice-President; Adam Visentin, Treasurer; and Joelle Torregrossa, Secretary.

The ACS Student Affiliate chapter grew from strength to strength in 2004-5 with a successful recruitment drive resulting in the group nearly doubling in size. Members planned a number of educational and social activities, as well as outreach and community service activities.

Among the educational activities, in fall 2004 the group promoted National Chemistry Week with members conducting three different chemistry demonstrations (along with participation of onlookers!) on one of the high traffic campus quads. In an effort that strengthened teamwork skills, a group of members participated in Chemvention, an



Halloween trip to Six Flags



National Chemistry Week liquid nitrogen ice cream demonstration with Mike Ordazzo, Melissa Pallashoff, Prof. Tom Gilbert and Prof. Rein Kirss.



Ricicki Awarded NESACS Levins Memorial Prize

Elaine Ricicki, graduate student in Paul Vouros' research group, has been awarded the Philip L. Levins Memorial Prize by the Northeast Section of the American Chemical Society. The award, for outstanding performance by a graduate student on their way to a career in chemical sciences, was presented at NESACS's Education Night held at NU on May 12, 2005. Elaine recently defended her thesis on Capillary Liquid Chromatography-Mass Spectrometry Techniques for the Analysis of 4-aminobiphenyl and oxidative DNA adducts. Remarkably, Elaine pursued studies in business administration concurrently with her Ph.D. studies and will formerly receive her Master's in Business Administration and Ph.D. in Chemistry in the fall. We congratulate her on these achievements!

Wei Receives Graduate Women in Science Award



Ying Wei received a 2005 Graduate Women in Science Award. Ying's research is in the field of theoretical chemical biology and computational molecular biology under the supervision of Mary Jo Ondrechen. Congrats!



The Impact of Alumni Support

As Chair of the Department of Chemistry and Chemical Biology, I invite you to join us in supporting the chemistry students at Northeastern University. Gifts at all levels contribute to their welfare, enrich their curricula and improve their facilities.

Jill Panetta's (B.S.'75) contributions have allowed us to invigorate our undergraduate mentoring facilities, including the installation of multimedia suites in the main entrance of Hurtig Hall and in 115 Hurtig, the headquarters of our student ACS group.

Carole Shapazian Uhrich (B.S.'66) has reestablished the "Merck Index Award" given to the best performing students in each year. She has also contributed to a hardship fund for our undergraduates in financial difficulty, enabling students to continue with their studies.

Please consider supporting our students. We have a variety of ongoing needs, and specific proposals from alumni are always welcome. Please call us at 617-373-2822 for a discussion of how you might best contribute to our program.

Graham Jones



Photo: Craig Bailey

Ed Witten

Receives President's Aspiration Award Highest Honor for Excellence

Dr. Ed Witten, Lab Coordinator in the Department of Chemistry and Chemical Biology for nearly 20 years, and lecturer for several years prior, was awarded with the Aspiration Award by President Richard Freeland at a ceremony held on March 29, 2005.

Nominated by Professor Graham Jones, Ed's candidacy was also enthusiastically supported by students, faculty, and staff. Summarizing Ed's contributions, Jones said, "To talk to Ed Witten is to talk to someone who has made the university his life. From going the extra mile to help students, teaching courses at odd hours, and managing thousands of experiments each year, Ed has constantly put the needs of the University ahead of his own. He is a true Husky and is well worthy of the Aspiration Award for his nearly 30 years of service." Ed's work is student-centered but also urban, as he is the department mentor for two high school programs that exist on campus, City on a Hill and the Health Careers Academy.

The President's Aspiration Awards are intended to recognize contributions that result in or support advancement towards Northeastern University's aspiration to achieve excellence as a national research university that is student-centered, practice-oriented and urban.

Merck Research Laboratories to Sponsor Department Programs



As many of you are aware, pharmaceutical giant Merck recently opened a dedicated research facility (MRL Boston) in the nearby Fenway area. This multimillion dollar facility will conduct corporate research on cancer,

Alzheimer's disease and obesity, and will employ up to 450 people when fully operational. In connection with their establishing a foothold in the Boston area, Merck executives are developing formal links with the university and our department, signaling the start of what will be a long-term relationship on research and education. MRL has now formally approved financial support to our departmental programs. The first round of funding (which has been earmarked for seminar programs, laboratory programs and scholarships) established a number of research internships for our majors to conduct original research during the summer I period prior to engaging in co-op.

The inaugural recipients of the scholarships - Adam Visentin, Nick Yankauskus, Matthew Daniels and Joelle Torregrossa - presented their research findings to Merck's Executive Director of Chemistry, Mark Goulet, at a workshop on August 18, 2005.



Prof. Graham Jones, Dr. Mark Goulet, Matthew Daniels, Adam Visentin, Prof. Eriks Rozners, Nick Yankauskus, Joelle Torregrossa

New Spinout Companies Formed!

Chemistry and Chemical Biology staff have a strong track record in commercial licensing and formation of spinout companies. Last year, close to 90% of royalties for the entire university came from department faculty inventions, and we are naturally proud of this heritage.

Two new spinout companies were established this past year. The first, Biosystems International, was established as the result of collaboration of Profs. Karger and Hancock with Pfizer, Inc. (Paris). The company is involved in the detection of biomarkers and subsequent applications in clinical diagnostics. The second, PeptiFarma, was established in May 2005, from IP generated from Prof. Hancock's program. The company is developing a new platform for glycoproteomics that can measure 'silent changes' of glycosylation in disease. The platform uses combinations of affinity based selectors with mass spectrometric identifications. Biosystems International has received stage I and II funding from Societ  General in France (SGCowan in the US) and is a functional company discovering disease specific monoclonal antibodies. PeptiFarma has an experienced clinical chemist in place as CEO and is engaged in round one fundraising. We wish both companies every success.



Outgoing ACS President Courtney Hrank presents plaque to Richard Pumphrey

Staff News

Richard Pumphrey, Business Manager for the department, was honored by the NU ACS Student Affiliate Chapter with the 2005 Recognition Award for his contributions and commitment to the betterment of the chapter.

Rob D'Allesandro, technician for physical chemistry laboratories recently accepted a position at ParExcel. We wish him all the best.

As a result of this transition, **Kevin Millea** (currently in final stages of completion of his Ph.D. with Ira Krull) will be assisting us in AY 2005-6 as an interim replacement. He will also oversee the integration of the analytical and physical chemistry labs.

Paul DiMilla, a part-time lecturer this past year, has been appointed as an academic specialist for the 2005-6 AY and is assigned to the Freshman Chemistry for Engineers program.

Alumni News

We were delighted to hear from alums following our first issue of Husky Chemist:

Walter Bassett, B.S. '80, had an exciting 16 year career with GE Plastics and has returned to the business where he started off in a co-op position in the area of medical polymers. He is now Global Head of R&D for the Fashion Wear group at CIBA Vision/Novartis, the leader in color contact lenses. For several years Walt has employed co-op students from NU, and he hopes to continue doing so in his new role.

Barry Cogan, M.S. '66, enjoyed the first half of his career in chemical sales and the second in the environmental industry. In retirement, Barry is busy as a full-time sports official umpiring women's fastpitch softball and soccer at the high school level and as a pet therapy volunteer with his 5 year old yellow Labrador retriever, Yogi, visiting hospitals, nursing homes and libraries.

Antonio (Toni) Miguel, M.S. '73, is employed by UCLA as Analytic Core Director. He would like to hear from his chemistry colleagues and can be contacted at ahmiguel@hotmail.com.

As always, we would enjoy hearing from you. Please contact Shari Khalil at s.khalil@neu.edu with any news you would like to share.

In Memoriam

It is with deep regret that we report the death of Bernard J. Lemire, a long-term member of the Chemistry Department, on October 24, 2004.



Bernie was born in Canada on October 6, 1935, but grew up in Lowell, MA. While an undergraduate chemistry major at Northeastern, Bernie's co-op job consisted of running the Chemistry Department stockroom. Upon his graduation in 1959, Bernie joined Fisher Scientific at their New York headquarters. Bernie was greatly missed at NU and returned in 1961 when he was offered the position of Supervisor of the Laboratories.

In time, Bernie became the Department's Budget Officer and Safety Officer, handled the scheduling of all Teaching Assistants, and assumed responsibility for all aspects of the four stockrooms in Hurtig Hall.

Bernie was an avid devotee of the performing arts and held a number of season tickets to various theatrical groups. In later years, he also became a seasoned traveler. He was a respected member of the "Penguin Society," a small Northeastern-based travel group, headed by Dr. and Mrs. Alfred Viola, which was dedicated to travel to exotic lands. With this group Bernie traveled to all seven continents.

Bernie retired in June 1997, after which he greatly increased his pace of travels. A series of health problems curtailed his travels in recent times, and eventually led to his death in October, 2004. We shall miss him greatly.

A memorial fund has been established in Bernie's name, to be used for awards to undergraduates in the Department. Anyone interested in contributing to this fund should contact:

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