Dear CS alumni, friends, and colleagues:

I am pleased to share with you that our enrollment has reached a new height this semester. We now have 240 BS students, 110 MS students, and 55 PhD students enrolled in our programs. The administration, faculty, staff, and students are working together to transform the department into a nationally ranked research department that offers state-of-the-art curricula at all levels.

We are still facing severe budget cuts. But with strong support from the Provost, we have managed to deliver high quality services to our students and constituents. We are conducting a search to fill a number of tenured/tenure-track positions with ranks open at all levels and one non-tenure-track full-time lecturer position.

We started to offer three online courses in the Fall 2010 semester for the newly approved online graduate certificate programs in Network Security and System Models and Management. Six online courses will be offered in the Spring 2011 semester. We have received permission from the Provost to plan for a new MS degree program in Information Technology. This is a joint effort with the Division of Continuing Education. Prof. Bill Moloney is the coordinator of these two certificate programs and the proposed MS in IT program.

Prof. Tom Costello, co-founder of the department in 1979 and a long-time department head, retired this semester. Prof. Costello and his early colleagues laid down a solid foundation for the department to move forward. Their visions and groundwork will have a profound impact on the well-being of the department for years to come.

We have significantly increased international activities and obtained international visibility. Thanks to the interview by China Education Online in May 2010, I had a unique opportunity to introduce our department to students nationwide in China. With the help of CERNET Education, a major international partner in China, I have recruited more than 20 MS students to our department. Sixteen of them have started English training at the Massachusetts International Academy in Marlborough, MA. Most are expected to enroll in our MS degree program in the Fall 2011 semester after they obtain satisfactory TOEFL and GRE scores.

A three member delegation from CERNET Education visited the department on October 12, 2010. In addition, Mr. Tong Wen, Consult of the Consulate General of China in New York, visited the department in October. I am leading a delegation of four Deans to visit a number of universities in China in January 2011 and to extend our UMass Lowell-CERNET recruiting effort of master’s students to other disciplines.

Faculty research activities and external funding have reached a record high. Eight faculty members in the department serve as Principal Investigators of research projects funded by the National Science Foundation and other federal and industrial funding agencies. Through their publications at prestigious conferences and journals, our faculty members have helped raise the visibility of the department. For example, Prof. Xinwen Fu, together with his colleagues and students, has four papers accepted by INFOCOM 2011, a flagship conference in the areas of computer networks and communications with an acceptance rate of 16.8%. Only a handful of researchers have ever achieved such a remarkable record.

I am eager to hear from you about your achievements, thoughts, concerns, and suggestions on how to strengthen the UMass Lowell Computer Science Department for our students. I believe that a strong department will, in turn, help our alumni and make them feel proud of being graduates of our programs. If you would like to offer financial support to the department or to a specific program in the department, please specify that on your donation form.

Yours sincerely,

Jie Wang, PhD
Chair and Professor
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Tom Costello Retirement

University Advancement threw a retirement party for Prof. Tom Costello in the Tsongas Center on November 5, 2010, and about 100 faculty and alumni honored Tom with their presence. Tom was saluted by Chancellor Marty Meehan, as well as CS Chair Jie Wang. It was great to see both old and new faces at the event, especially those whom we hadn’t seen in a while, such as retired administrative assistant Sharon Quigley and retired faculty member Stu Smith.

Jesse Heines had collected pictures from faculty and friends of Tom and, with the help of graduate student Beibei Yang, arranged them into a slide show that ran throughout the evening. Everyone enjoyed seeing pictures from up to 25 years ago, long before the older faculty began turning gray!

The party was followed by a hockey game, which UMass Lowell won, topping off a fun evening that also raised money for the Costello/Robertson family scholarship fund.

UMass Lowell CS Offers Scholarships to High School Women

On November 20, 2010, Prof. Jesse Heines had the honor of representing UMass Lowell at the awards ceremony for the Massachusetts Aspirations in Computing Affiliate Award and offering scholarships to 12 outstanding young women. These high school seniors were all winners of the National Center for Women and Information Technology (NCWIT) Award for Aspirations in Computing, which honors young women at the high-school level for their computing-related achievements and interests.

Profs. Yanco, Martin, and Heines — all members of the NCWIT Academic Alliance — selected one of the 12 women as the recipient of a $10,000 scholarship, which is payable in four installments of $2,500 in each of the student’s four years at UMass Lowell. That young woman was Bhavi Parikh of Randolph High School, who told Prof. Heines that UMass Lowell was her first choice even before she received this scholarship. We also offered a one-time $1,000 scholarship to each of the other 11 women who will be graduating high school in 2011, which is payable when they enroll at UMass Lowell.

NACEDA Awards UMass Lowell's Open Indicators Consortium's New Software

The National Alliance of Community Economic Development Associations (NACEDA), as part of its Managing Neighborhood Change Collaborative Competitions, presented an award to the Open Indicators Consortium lead by Prof. Grinstein for developing a new, open source software system to improve access to data about communities and regions.

The software system is called WEAVE: Web-based Analysis and Visualization Environment. WEAVE analyzes and visualizes economic, social, and environmental indicators at the interface will integrate maps, charts, and tables on one website, transforming the way that both novices and advanced users look at data. The tool allows users to post their own data and participate in simultaneous, collaborative exploration with users at other locations. When completed in December 2010, the program will be made available free to nonprofits and government users.

The Open Indicators Consortium is a national endeavor led by UMass Lowell and The Boston Foundation’s Indicators Project.
Computer Science Department Hosts Workshop

The Computer Science Dept. continues to make major efforts to attract students through active cooperation with Admissions and the Transfer Office. Our faculty participates actively in open houses and other recruiting events, meeting with students, parents, and high school guidance counselors to educate them about the CS program. The most recent of these was on Saturday, November 20, 2010, when six faculty and about 15 students welcomed students and their families to the department with an introduction by Associate Chair Fred Martin and visits to the Engaging Computing, Robotics, Institute for Visualization and Perception Research (IVPR), Cyber Forensics, and Center for Network and Information Security (CNIS) labs.

Performamatics Course Results in Book Contract

In October 2009, Music Prof. Gena Greher and CS Prof. Jesse Heines made a presentation on their interdisciplinary computing+music course Sound Thinking at a conference of the Association for Technology in Music Instruction. Their presentation was entitled Sound Thinking: Conceptualizing the Art and Science of Digital Audio for an Interdisciplinary General Education Course.

Norman Hirschy, the Music Editor at Oxford University Press, approached Gena and Jesse after their presentation and proposed that they turn their experiences into a book. The two professors were very excited about the possibility of continuing their work together and sharing it with a larger audience. Jesse and Gena worked on their book proposal for months, delivering the first draft in April 2010. A second draft was submitted in June that incorporated the editor’s suggestions. A final draft was delivered in July. That draft was sent out for peer review, and comments were received in September. The comments were very positive, with all three reviewers recommending that Oxford University Press move forward with the project.

All of this work culminated in November when Oxford University Press sent Gena and Jesse the final version of a contract to write Computational Thinking through Sound: Teaching the Art and Science of Music Technology over the next year. It is particularly gratifying to see this interdisciplinary course—as well as the Artbotics and Tangible Interaction Design courses developed by CS Profs. Holly Yanco and Fred Martin with colleagues in the Art Dept. — continue to be offered each semester even after the initial NSF funding has finished. We see the value of these courses in deepening Arts students’ understanding of CS and CS students’ understanding of the Arts.

Co-op Program Plan Moving Forward

Fred Martin and Jesse Heines met with Diane Hewitt (Assoc. Director of the co-op program) and Sandhya Balasubramanian (Asst. Director assigned to the Sciences) on November 12, 2010, about moving forward with the long-awaited co-op Program for Computer Science undergraduates. Plastics was the first department to start, but we have the opportunity to be next. The co-ops themselves are full time, and may either be three month summer employments (in which case, the student can still graduate in 4 years) or six month semester employments (on a specific January-June or July-December schedule). In the latter case, students would need more than 4 years to graduate.

Companies like to hire students back for full-time employments, and they also allow them to work part-time during the semester. So in this sense, this design is not too different from what many of our students are already doing. The co-op experience is arguably a better experience for a student than just a part-time job. Also, the pre- and post-co-op courses are designed for students to reflect and integrate their professional learning with their academic learning.
Computer Science Newsletter

Faulty Highlights

James Canning
Prof. Jim Canning, well-renowned as a strong student advocate, has a new role this year: Undeclared Science Advisor.

In this capacity Prof. Canning advises all science majors who have not yet declared their majors.

Prof. Canning coaches these students through their first year and arranges for speakers from all College of Science departments to address the students and explain what it’s like to major in those departments.

Xinwen Fu
Prof. Xinwen Fu founded the Center for Cyber Forensics (CCF) at UMass Lowell in Fall 2010 and serves as the center director. The center is currently supported by the NSF and the University of Massachusetts. The mission of the center is to research and develop cyber forensics theory, techniques, and toolkits that will play a critical role in public safety and security response by enterprise campuses, federal and state law enforcement, and national cyber-defense forces including the military.

Prof. Xinwen Fu was recently awarded an NSF CCLI grant ($188,000, Prof. Benyuan Liu as a Co-PI) starting August 1, 2010. This new grant will stimulate the growth of research and education on Cyber Forensics within CCF. Prof. Jie Wang is the co-founder and co-director of CCF.

Cindy Chen
Prof. Cindy Chen co-organized SIGMOD 2010 Database Mentoring workshop in June, 2010 in Indianapolis, IN. The workshop is part of a series of Discipline-Specific Mentoring Workshops organized by Computing Research Association’s Committee on the Status of Women in Computing and the Coalition to Diversify Computing (CDC).

The goal of the workshop is to increase the diversity of the database community through mentoring women and underrepresented minorities.

Fred Martin
Prof. Fred Martin was an invited participant at a meeting in Arlington, VA. at the National Science Foundation, "Re/Search: Art, Science, and Information Technology," held September 15 and 16, 2010.

The meeting was sponsored jointly by the NSF and the National Endowment for the Art and was attended by about 50 individuals. Participants were faculty and administrators from leading universities nationwide, independent artists, and community-based arts organizers.

Martin described work he has participated in at UMass Lowell, including the Artbots and Performatics projects. These projects resulted in the creation of three multi-disciplinary undergraduate courses, combining computer science, robotics, art, and music.

Guanling Chen
Prof. Guanling Chen has received a three year $499,670 award from the NSF, together with CS Adjunct Faculty Jill Drury, to study application usability on modern smartphones. The project will pursue a quantitative method to systematically analyze user interactions with mobile applications to automatically identify usability issues. Prof. Chen also received a three year $300,000 award from the NSF as a site PI to study future mobile Internet architecture. This project is part of a nine institute and 16-investigator collaborative initiative funded by the NSF with $7.5 million.

Prof. Chen was invited to be part of a panel presentation at the inaugural ACM International Health Informatics Symposium, discussing the implications of social media on health informatics.

Georges Grinstein
Prof. Grinstein chaired the VAST Challenge at the IEEE 2010 Visualization Conference this October in Salt Lake City and spoke on the Value of a Theory of Visualization.

Prof. Grinstein will give the keynote at the SPIE/IS&T Conference on Human Vision and Electronic Imaging in San Francisco on January 24-27, 2011. Every year, this conference brings together a multidisciplinary mix of perceptual and cognitive scientists, imaging scientists, inventors, and artists from around the world to explore issues at the intersection of vision and emerging technologies.

Prof. Grinstein’s book on Interactive Data Visualization was published this fall, co-authors with Matt Ward (Worcester Polytechnic Institute) and Daniel Keim (University of Konstanz).

Prof. Grinstein received a grant for continued membership in the DHS Command Control and Interoperability Center for Advanced Data Analysis.

**Faculty Highlights**

**Jie Wang**  
Prof. Jie Wang visited Tsinghua University, CERNET Education, Peking University, Beijing University of Post and Telecommunications, the Chinese Academy of Sciences, SIAS International University, Henan University, Xi’an Jiaotong University, Northwestern Polytechnical University, Southeastern University, Nanjing University, and Zhongshan University from May 25 to June 8, 2010. He gave lectures on knowledge discoveries from the Internet, virtual embedded networks, and underwater sensor barriers. He also worked with these universities setting up joint research and education programs.

Prof. Wang (Lead PI), Prof. Benyuan Liu, Prof. Junhong Cui (Univ. of Connecticut), and Prof. Weili Wu (Univ. of Texas at Dallas) received a three-year NSF research grant titled *Collaborative Research: Undersea Sensor Networks for Intrusion Detection: Foundations and Practice*, CNS-1018422. $449,987.

Prof. Wang is serving as the editor-in-chief of a book series on mathematical modeling for the Higher Education.

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**International Activity**

On October 25, 2010, a delegation from the Academy of Sciences in Shandong Province in China visited the department and discussed research collaborations with Profs. Cindy Chen, Xinwen Fu, Benyuan Liu, and Jie Wang.

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**CS Department Hosts K-12 "Robots + Science" Outreach Workshop**

On November 6, the Computer Science Department hosted a half-day hands-on workshop on robotics and citizen science, organized by professors Holly Yanco and Fred Martin. Over 45 middle and high school educators attended two interactive technology sessions, led by UML faculty and students.

In the robotics session, participants learned how to program low cost, embedded-control robotics technology (the Super Cricket) and distance and light sensors mounted on a small, wheeled “car” to accomplish pre-defined tasks.

In the science session, teachers learned about iSENSE, a system developed in the CS department which includes a hand-held data logging device and companion web site for data storage and visualization. Educators toured hallways for light measurements, took water temperature readings, and learned how to upload the data to the program’s web system.

The workshop is part of a wider effort to provide regular, year-round STEM professional development to K-12 educators. UMass Lowell computer science faculty, students and staff offer a number of workshops to teachers. This endeavor is funded by the Community Partnership Program, [http://www.cs.uml.edu/k12](http://www.cs.uml.edu/k12), which is fully supported by donations from alumni and corporations. Analog Devices, the Waters Corporation and QinetiQ are sponsors of the 2010-2011 season. Additional funding was also received from CAITE, the Commonwealth Alliance for Information Technology Education.

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**Undergraduate Award**

Eric McCann, an undergraduate researcher in Prof. Holly Yanco's Robotics Lab, has been awarded an Honorable Mention in the Computing Research Association's Outstanding Undergraduate Research Award competition. This award recognizes Eric for his research in multi-touch computing for controlling robots and video games.

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**Graduated PhDs**

Mark Micire completed his PhD, "Multi-Touch Interaction for Robot Command and Control," this fall and is now working at the NASA Ames Research Center in Mountain View, CA. Advisor: Holly Yanco.

Nan Li completed his PhD, “Characterizing and Modeling A Location-Based Online Social Network,” this summer and is now working at Baidu.com (the largest Internet search company in China). Advisor: Guanling Chen.
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