University of Massachusetts Amherst

Spring 2007

Significant BITS

Newsletter of the
Department of Computer Science

Coping with the information storm

We have all used search engines to find useful information. We type in a query, look through the list of returned documents, and pick out the useful bits that we actually care about. What if the search engine could assist you in creating an accurate query and sift through the full document text to find the interesting parts? What if the system could do that not only for text but for audio, and not only for English but for other languages—yet in all cases still present the information to you as an English list of "facts"?

Associate Professor James Allan is working toward such a system as part of the worldwide, collaborative GALE (Global Autonomous Language Exploitation) DARPA program. The purpose of the program is to improve human language technology—information retrieval and extraction, speech recognition, machine translation, and summarization—so that a new generation of information systems can be created. Within GALE, UMass Amherst is part of the Nightingale team, a large group of about a dozen organizations worldwide that conduct human language technology research.

"The focus of our research group here at UMass Amherst is to build accurate queries and optionally to employ limited user interaction to find as many relevant documents as possible without also including useless material," says Allan. "To that end, the Nightingale project makes two significant choices to allow more powerful processing: (1) the queries come from a restricted set of templates, and (2) automatic annotations indicate where entities, events, and relationships occur in the text."

James Allan, GALE researcher, in the midst of an information storm

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Miklau's CAREER award addresses privacy and accountability in database systems

Assistant Professor Gerome Miklau received a five-year National Science Foundation (NSF) Faculty Early Career Development (CAREER) award to study privacy and accountability in computer database systems by balancing the need for digital devices to retain some information while restricting access to other data.

Miklau says accountability in computer systems is typically provided by preserving a history of activities and data. This allows past events to be analyzed to detect breaches, to maintain data quality, and to audit compliance with security policies.

"In some settings, however, retaining a history of past data or operations poses a serious threat to privacy," says Miklau. He says many of the digital devices we use inadvertently keep a record of past actions or data and as storage capacities continue to grow, the digital residue of our activities threatens our privacy and anonymity. "The fact is, privacy and accountability are both important goals, and system designers need to carefully manage the balance between them."

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From the Chair

Andrew Barto

Every job seems to come with a new set of acronyms that have to be learned. In my case, since starting as department chair in January, I have had to add CPATH, CAITE, and AQAD to my list.

Let's start with the last: AQAD: Academic Quality Assessment and Development. This is a review process, mandated by the University President's office, that each academic unit on campus has to undergo periodically. In our case, the most intensive part of the review took place on February 22 and 23. Six distinguished computer scientists from around the country visited our department for extensive discussions about the state of the department and its predicted trajectory over the future. But their visit was just the culmination of a process started months earlier by former chair Bruce Croft and George Langford, Dean of the College of Natural Sciences and Mathematics. They assembled the visiting team, and Bruce led the department in preparing two "self-study" documents on which the review was to focus. The first addressed new initiatives for broadening the undergraduate offerings in computer science to appeal to a wider range of students and to improve the diversity of our student body. The second highlighted the quality of our junior faculty and considered the investments needed to ensure that we will have a top-quality department for years to come.

For me, it was a crash course in departmental affairs, but due to the careful preparation by Bruce, the outstanding participation of the entire faculty, a great group of graduate and undergraduate student volunteers, and the support by our wonderful staff, the review went off with barely a hitch. As I write this, we have only a preliminary report from the site visitors, but it is clear that they were impressed by the quality of our department: strong faculty, strong funding, impressive placement of graduate students, and a rigorous undergraduate program. For the new chair—me—it was a very intense two days, but it was great to start my term as chair with a thorough overview of where we are, where we have to go, and what we have to do to get there.

Which brings us to CPATH: CISE Pathways to Revitalizing Undergraduate Computing Education, where CISE (the acronym within the acronym!) stands for Computer & Information Science & Engineering, the directorate of the National Science Foundation (NSF) from which much of our outside funding comes. This is a funding opportunity from the NSF designed to transform undergraduate computing on a national scale to meet 21st century information technology needs. Their synopsis points out that despite vast changes, today's undergraduate computing education "often looks much as it did several decades ago." Our department, together with others across the campus and the local Five Colleges, submitted a proposal to this program; our goal is to provide students across the Five Colleges with multiple entry points to innovative new interdisciplinary and multidisciplinary computing curricula and to provide multiple opportunities for tailoring education to specific student interests and needs. Whether or not this is funded (we hope to know soon), we will be pursuing these goals over the coming years. Despite the fact that computing has become ubiquitous in our culture, public perception of computer science and computer scientists is at odds with reality, and enrollment in undergraduate CS programs has been declining across the country. CS is no longer the only game in town if you want to do something involving computing! We will be working hard to meet the multiple challenges that this presents.

CAITE? This stands for Commonwealth Alliance for Information Technology Education (**see article on page 12**). Spearheaded by former department chair Rick Adrion and including others from UMass Amherst, UMass Boston, Bristol Community College, and Springfield Technical Community College, this is an alliance of educators whose goal it is to increase the participation of women and minorities in careers in information technology and computing. CAITE recently received nearly two million dollars through the NSF's Broadening Participation in Computing (BPC) program. It is one of eight similar projects across the country funded by the NSF in response to the unfortunate fact that women and minorities make up only a very small fraction of those receiving post secondary degrees in computing disciplines. Not only are these underrepresented groups left out of economic opportunities, but also computing disciplines are being deprived of a major source of talent. CAITE builds on the department's leadership in the Commonwealth Information Technology Initiative (CITI), a public-private partnership to improve IT education across K12 and public higher education. CITI was founded in 2000 by Jim Kurose and is co-directed by Rick Adrion. Activities sponsored by CAITE are designed to work with community colleges to increase awareness among high school teachers, staff, counselors, parents, and students about opportunities for careers in information technology, and to make it easier—through advising and mentoring—for students to move from high school, to community college, and then to upper division and graduate programs in computer science. CAITE offers many opportunities to get involved at many levels for those of us concerned about these issues.

On a sad note, many of you are aware of the recent death of Ed Riseman, our colleague, former chair, mentor, and friend to many of us. It is difficult to think of Computer Science at UMass Amherst without Ed in the picture. He was a major force in shaping the department, from its culture of mutual respect and consensus building to its excellence in research. The article on page 5 of this newsletter provides a more detailed account of Ed's legacy in the department and beyond. To honor Ed's memory and many contributions, I am pleased to announce that we are creating the *Edward Riseman Memorial Lecture*, an annual lecture by an outstanding computer scientist, that will be an enduring reminder of Ed's energy, generosity, and passion for learning, teaching, and new ideas.

Finally, I want to extend sincere thanks to outgoing chair Bruce Croft for his leadership over the past six years. Due to his fine leadership, the department is in great shape, for which we are all grateful. Of course there remain many challenges, but the department is well poised for a future that looks very bright indeed!

A new chair in town

At a celebration hosted by Professor Victor Lesser (left), Andrew Barto (center) served as master of ceremonies to congratulate Bruce Croft (right) on his accomplishments as Chair.

In January, Distinguished Professor Bruce Croft stepped down as Department Chair after serving in the position for the past six years.

"A lot of things have happened in the department during my term as Chair. The major achievement was being able to hire thirteen new tenure-track faculty during this period. The new faculty have already shown that they will be part of the next generation of leading researchers in our field and will continue to enhance the department's reputation," says Croft. "We have also significantly improved the representation of undergraduates in the department's activities, and have begun a process that will improve every aspect of undergraduate computer science." Croft added, "Being Chair can be rewarding, especially when you can work with a great staff and faculty, but it does take up a lot of time. I am *really* looking forward to being able to focus again on research and teaching."

Croft is on sabbatical this semester, and is developing new research directions, as well as helping six Ph.D. students from the Center for Intelligent Information Retrieval finish up by the summer.

Succeeding Croft as Chair will be Professor Andrew Barto. "Bruce did a tremendous job as chair," says Barto. "He led us through a period of rapid growth, increasing our ranks with an impressive group of new faculty, enhancing our excellence in teaching and research, while preserving our congenial environment—all during a period with many urgent needs competing for scarce university resources."

Miklau – – – *continued from page 1*

For his CAREER research project, Miklau will build a database system capable of securely managing history, thus balancing the needs for privacy and accountability. In settings that require it, the system will be configurable as "memory-less," protecting privacy by resisting unauthorized attempts to trace activities or recover deleted data. This will be achieved by removing data safely when it is deleted, providing an accurate view of the data that is retained, and by offering bounds on the lifetime of sensitive data items stored in the system, he says. In other settings, the system will support accountability by retaining desired history, permitting its efficient analysis, and protecting it from unwanted disclosure. Miklau's project will result in a publicly available prototype database system that can meet these goals.

Miklau joined the faculty in 2005. His research interests include privacy, confidentiality, and integrity for data stored in databases and exchanged on the Web. He received his M.S. and Ph.D. in Computer Science from the University of Washington in 2001 and 2005 respectively, and a B.S. in Mathematics and B.A. in Rhetoric with Honors from the University of California, Berkeley in 1995. Before joining the department, Miklau held research internship positions at IBM Almaden Research Center and Lucent, Bell Laboratories. In a prior position, he was a derivatives trader for J.P. Morgan and Company. Miklau won the 2006 ACM SIGMOD Dissertation Award for his dissertation "Confidentiality and Integrity in Distributed Data Exchange."

The CAREER program, the NSF's most prestigious award for new faculty members, recognizes and supports the early career-development activities of those teacher-scholars who are most likely to become the academic leaders of the 21st century. Previous department faculty CAREER award recipients include Micah Adler (2002), Emery Berger (2004), Oliver Brock (2006), Mark Corner (2005), Deepak Ganesan (2006), Erik Learned-Miller (2006), Brian Levine (2001), Sridhar Mahadevan (1995; awarded at Univ. of S. Florida), Kathryn McKinley (1996; now at UT-Austin), Prashant Shenoy (2003), Ramesh Sitaraman (1997), and Shlomo Zilberstein (1996).

GALE – – – – – – – – – – – *continued from page 1*

The most substantial restriction of those two is that a query must come from one of 17 possible templates—e.g., describe the prosecution of *person* for *crime*. The template allows fairly open questions—any person's name and any crime can be inserted for those parameter values—but also allows the system to "know" what information is of interest. This extra fact about the user's intent means that the retrieval system can eliminate some documents that it might select otherwise. For example, knowing that the *prosecution* is of interest, the system can skip text that discusses background, the investigation and possible suspects. Other template examples are those that specifically target information about a particular person, or a template that looks for a specific organization's involvement in an activity.

One key to achieving large accuracy gains with these template-derived queries is the use of annotations within the text. Allan's team leverages the work of two Natural Language Processing (NLP) areas: information extraction and co-reference resolution. The first has the goal of scanning largely unstructured text to find references to objects, events, relationships, etc. Some examples for this project include identifying names of people, organizations, geopolitical entities, arrests, indictments, convictions, and membership. When those annotations are present, the query can use them directly:

> Find sentences that discuss *justice* events, mention *person* as a person's name, and talk about *crime*.

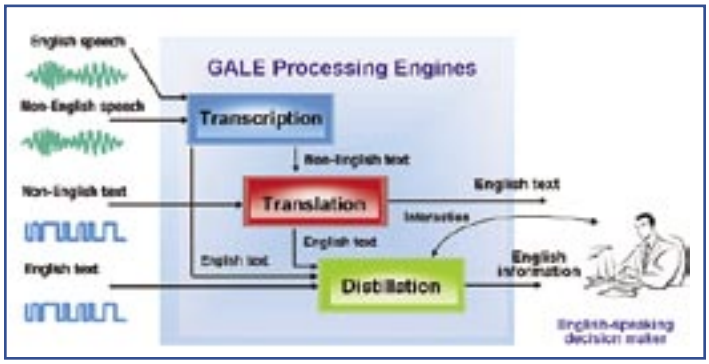
The second NLP component, co-reference resolution, improves the ability of finding all references to a person. This technology sifts through a collection of text to find all ways that a particular person is referenced. For example, it might note that *Bugs Bunny* is referred to as *Bugs Bunny, Bugs,* and *Wascally Wabbit*. By tying all variant names together, any one of them can be used to find all of the others.

The challenge of using annotations and co-references is that the processes to generate them are both imperfect. In some cases it will incorrectly mark something as a name, bring together two names that should be separate, and so on. Since the Nightingale project is tasked with finding *all* information on the specified topic, the retrieval process has to use the annotations but simultaneously assume those annotations are incorrect and incomplete. This balance means juggling references to *justice* events with words that are likely to occur near those justice events—having both events and words is ideal, but having just one may also be important.

This problem is compounded when the text being annotated is imperfect itself—as when the text comes from machine translation or speech recognition software. Consider the following piece of text (from July 3, 2006):

> In the past, the police, refused to obey police stop orders, manufacturing, marketing offensive weapons are "arrest" crimes, which belonged to the "arrest."

This sentence of text comes from a larger section that appears to describe a change in the laws of Hong Kong that now allow police to arrest people for minor crimes if they refuse to identify themselves. An information retrieval system can find the sense of the story, but most NLP techniques are likely to fail when confronted with convoluted "prose" such as that.



GALE produces summaries of information from multiple languages and modalities. (Image adapted from GALE site: **www.darpa.mil/ipto/programs/gale/concept.htm)**

Part of Allan's research is concerned with the deployment of his query systems in real settings. To assist in that project, Allan and graduate student Giridhar Kumaran are exploring how low-level interaction with the user can improve effectiveness. Their goal is not a heavily interactive system, but one that points the user in several directions that might be fruitful.

"We have been exploring this idea as part of query creation, giving the user some tools to improve the focus or coverage of the query," says Allan. "To improve the likelihood of finding useful information, we identify new query keywords, list a few possible subjects that the answers might fall into, and mark some query terms as less useful or inappropriate. The goal is a query that includes fewer distracting words, adds related words and synonyms, and has a clearly defined topic of discussion."

To illustrate this process, consider the query, *Define Argentine and British international relations*. The words *define* and *and* seem useless and indeed stripping them from the query helps with accuracy. The rest of the words appear critical, but surprisingly, the phrase *international relations* is also distracting: on a standard set of test documents, using just *Argentine British* as a query is almost half again as accurate as the original query and a 25% improvement over the four word version. A topic (rather than keyword) focus on international politics as well as the addition of words such as *Falklands* or *invasion* might be used to improve the results even more.

Kumaran and Allan are developing algorithms that reformulate queries. They have developed statistical techniques to find a small set of reasonable changes, many of which improve results, and these changes are presented to the searcher, who then interacts with the system to reformulate and re-issue the query.

"We have chosen this type of interaction—proposing small changes to the query—because we believe it is conceptually straightforward and therefore likely to be used," says Allan. "We have experimented with much more elaborate user interaction, only to find that most searchers are not interested in expending effort for most queries. Our preliminary investigations indicate that these simple questions can be answered quickly and that people can successfully choose useful modifications to the query."

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Professor Edward M. Riseman (1942 – 2007)

Professor Emeritus Edward M. Riseman died at the age of 64 on February 26, 2007 at his home in Leeds, MA.

Riseman retired in 2003 after 34 years of service with UMass Amherst, though he remained active in research within the department after his retirement. He joined the Computer Science Department (then an M.S. Program in Computer Science in the Graduate School) as Assistant Professor in 1969, became a full professor in 1978, and served as Department Chair from 1981-1985.

"Ed was a valued and still very active member of our community who contributed in countless ways to the department, playing many key roles in helping it to grow and strengthen over the years," says Department Chair Andrew Barto. He was also a valued friend and mentor to a great many of us and will be seriously missed."

When Riseman arrived at UMass Amherst in 1969, Computer Science was a program in the graduate school. Then-Graduate Dean Ed Moore was fully supportive of the plan to create a Computer Science Department, so he approved the hiring of a junior faculty position. Riseman filled that position. "We could not have made a better choice," says Professor Emeritus Conrad Wogrin, who was the Acting Chair at the time of Riseman's hiring.

Riseman's research reflected a broad interest in computer vision and artificial intelligence, including knowledge-based image understanding, stereo and motion analysis, autonomous vehicle navigation, learning, three-dimensional reconstruction, image databases, content-based image retrieval and parallel processing, and architectures for computer vision. Emphasis on practical systems is supported by applications of photo-interpretation of aerial images including 3-D building and terrain reconstruction, biomedical image analysis, automated robotic manufacturing and assembly, real-time control of intelligent vehicles, terrain classification and fly-through visualization, and development environments for vision research. He was the author of more than 150 publications in these areas.

Riseman was instrumental in the establishment and success of the department's Computer Vision Laboratory, which he co-directed with Professor Allen Hanson. Riseman and Hanson also founded Amerinex Artificial Intelligence Corporation and Dataviews Corporation (formerly VI Corporation), both visual technology oriented companies located in the Amherst, Massachusetts area. Riseman and Hanson had successful collaborations with nearly every faculty member in the department over the years, as well as with industry partners such as Martin Marietta, Lockheed, General Electric, Boeing, Kollmorgen, Harris, Raytheon and most recently, the Bigelow Laboratory for Ocean Sciences in Boothbay Harbor, Maine. This latter collaboration also includes Louisiana State University and is concerned with automated methods for counting plankton in the world's oceans. "Ed and I particularly liked 'green' applications for computer vision," Hanson says.

Some of Riseman's and Hanson's research accomplishments include pioneering work on vision understanding systems. Riseman, Hanson, and then student Tom Williams (Ph.D. '81) designed one of the first knowledge-based image understanding systems that handled very complex natural images. A landmark book edited by Hanson and Riseman, *Computer Vision Systems* (Academic Press, New York, 1978), set the tone for much of the area's research over the following ten years. The Vision Lab participated in the DARPA Unmanned Ground Vehicle Program, in which UMass Amherst was one of only two universities to have a military HMMWV ("HumVee") on site for development of software for autonomous driving. As part of the DARPA RADIUS APGD program, UMass Amherst produced and delivered the only working system for reconstructing the three dimensional structure of the ground from aerial images. "Ed was one of the great leaders in the field of computer vision" says Hanson. The Vision group was one of the first in the department to build a research laboratory, so the group's computers became resources for the entire department. "Ed tried to do what was best for the department," says Hanson. "He was always looking for ways to move the department forward."

Riseman's most recent research involved the use of technology to support aging at home. This project, in cooperation with the Smith College School for Social Work, was designed to examine the role technology can play in the lives of our elder citizens. The UMass Amherst/Smith project is unique in that it integrates the knowledge and perspectives of social scientists, computer scientists, and the elderly population. "This was one of Ed's pet projects," Hanson says. "He was working very hard to make sure it was successful."

Riseman was Chair of the department from 1981 to 1985. "Ed as the department head was a dynamo," says Wogrin. "At the time, the department had a number of very good people, a broad spectrum of research, and was moderately well funded. What Ed did was to inject a sense of optimism." During his tenure as Chair, Riseman changed the culture of the department to become very cooperative, where faculty worked together and respected one another's views. "He made faculty at all levels feel that they had a voice in the directions of the department," says Professor Victor Lesser. "It is this spirit that lives on in our department, and which makes it special."

An accomplished researcher and leader, Riseman was also a dedicated teacher. During his tenure at UMass Amherst, Riseman was the advisor to 38 Ph.D. graduates (many co-supervised with Hanson). "His greatest legacy is in the students that have been members of the Visions group," says Hanson.

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IFAAMAS Victor Lesser Distinguished Dissertation Award created

The board of directors of the International Foundation for Autonomous Agents and Multi-agent Systems (IFAAMAS) has created the *IFAAMAS Victor Lesser Distinguished Dissertation Award* to acknowledge the work that Professor Lesser has done in helping organize the multi-agent community and the large number of students whom he has mentored at UMass Amherst and elsewhere who have become important members of the multi-agent community.

"About 20 international researchers, from all parts of the world and from top universities around the world, agreed to this suggestion of naming the award as the *Victor Lesser* award," says Milind Tambe, University of Southern California Computer Science Professor and member of the IFAAMAS board of directors. "This is something that the University of Massachusetts Amherst should be truly proud of."

Lesser was the general chair of the first international conference on multiagent systems, the International Conference on Multi-Agent Systems (ICMAS), held in 1995 and also the first president (1998-2002) of the International Foundation for Multi-Agent Systems (IFMAS) that was formed in 1998 to promote research in multi-agent systems. The original ICMAS/IFMAS conference/foundation has extended its scope to agents and merged with other organizations and associate conferences. The conference, sponsored by the IFAAMAS, is now called the International Conference on Autonomous Agents and Multiagent Systems (AAMAS).

"Victor has been a mentor to a whole generation of researchers in the arena of agents and multiagent systems, perhaps not just one generation, but multiple generations, and thus truly a grandfather to the field of agents and multiagent systems," adds Tambe, who acknowledges that Lesser is one of his two mentors.

Carterette receives Microsoft fellowship

Microsoft selected Center for Intelligent Information Retrieval (CIIR) graduate student Benjamin Carterette as a Microsoft Live Labs Fellow for the next two years. Only four Live Labs fellowships were awarded this year.

The Fellowship covers 100 percent of tuition and fees, provides a stipend for living expenses and includes an allowance for attending professional conferences and seminars. Each fellowship recipient also gets a TabletPC, and is invited to participate in a 12 week paid internship. Carterette, advised by Associate Professor James Allan, was honored during an awards ceremony in Microsoft's Redmond, Washington facility.

Carterette has already made a few trips to Washington in regard to this fellowship. When he went for the initial interview, a large power outage caused it to be cancelled. He had to fly back at a later date to complete the interview.

Carterette is interested in research on low-cost and robust evaluation of information retrieval systems. "Evaluation is a difficult problem in information retrieval. People have to be hired to judge documents for relevance, but there are just too many to be able to judge them all," says Carterette. "My work is about being smart about which documents you ask for human judgments on, and being able to make robust conclusions from the available judgments."

He adds, "I think my work is interesting to search companies because they are constantly changing their algorithms to deal with new queries, new documents, spammers, etc. They always need more relevance judgments to evaluate new algorithms."

Carterette received the Best Paper Award at the 2006 Association for Computing Machinery (ACM) Special Interest Group on Information Retrieval (SIGIR) Conference for his paper "Minimal Test Collections for Retrieval Evaluation," co-authored by Professors James Allan and Ramesh Sitaraman.

"Ben has already distinguished himself in the area of information retrieval evaluation. His work is a primary motivating factor for an international retrieval evaluation that will be undertaken this summer. I'm delighted that Microsoft is honoring him in this way," says Allan.

CIIR graduate student Mark Smucker and Xuerui Wang, graduate student within the Information Extraction and Synthesis Laboratory (IESL), were fellowship finalists in this year's competition. Last year, CIIR graduate student Donald Metzler and IESL graduate student Aron Culotta both received two-year Microsoft Live Labs Fellowships.

Want more information?

Visit us at: **www.cs.umass.edu**

CS Women stay connected

The Computer Science Women's Group is a forum for women in the UMass Amherst Computer Science Department to discuss academic and social issues and to grow professionally. The group meets over lunches and other social events to stay connected. Frequent interaction with fellow women graduate and undergraduate students helps in bonding both professionally and socially. Their social gatherings provide ample opportunity for exchanging information about workshops and conferences for women, and anyone who misses a meeting can find that information on their website. In the fall, they organized a mock elevator talk session for the graduate students to practice their two minute research talks, and for the undergraduates to learn about research in the department.

Members of the CS Women's Group. Seated from left to right: Huong Phan, Xiaolan Zhang, Aruna Balasubramanian, Pallika Kanani, Emily Horrell, and Benessa Defend; Standing from left to right: Jagrati Agrawal, Hala Mostafa, Thanh Tran, Heather Conboy , Yimin Wu, Desislava Petkova, Megan Olsen, Audrey Lee, Hava Siegelmann, Anna Grishkan, Hee-Jin Chae, Yoonheui Kim, Borislava Simidchieva, and Yanlei Diao.

Since mentorship is a key to success in graduate school and academia in general, the CS Women's Group takes every opportunity to actively mentor undergraduate women. Each semester the group arranges for prominent women researchers in academia and industry to share their experiences and their thoughts on the role of women in research. They also invite recruiting teams from industry to discuss career choices and work environments for both undergraduate and graduate women. In the fall, the group invited Susan Landau, Distinguished Engineer at Sun Microsystems Laboratories, and Diane Curtis, Academic Developer Relations Manager at Microsoft. They also invited the department's Distinguished Lecture speakers Martha Pollack, professor in the Department of Electrical Engineering and Computer Science at the University of Michigan, and Barbara Ryder, professor at Rutgers University in the Division of Computer and Information Sciences, to meet with the CS Women's group during their visit to campus. In years past, the group has also organized graduate student mentors for the undergraduate students, to provide help in career and class choices as well as adjusting to college life.

Although the group is primarily focused on the development and success of the women in the department, they are also planning outreach projects for all undergraduates. Currently they are planning an event for the fall semester that will be open to all freshmen and sophomores. It will give non-majors a flavor of what computer science entails, and will give majors a look into the many different areas where they can utilize their degree. They hope that this event will help early undergraduates see that there is more to computer science than programming, and help them start thinking about their career options. Find out more about the CS Women's group and their activities at **www.cs.umass.edu/~women**.

Department hosts distinguished lecturers this spring

The department hosted two prominent researchers this spring as part of the 2006-2007 Distinguished Lecture Series (DLS).

In March, **Ronald L. Rivest**, Andrew and Erna Viterbi Professor of Electrical Engineering and Computer Science at MIT spoke on "Security of Voting Systems. In May, **Greg Morrisett**, Allen B. Cutting Professor of Computer Science at Harvard University, gave a talk on "Static Extended Checking: Cyclone and Ynot."

DLS presenters from the fall/winter included **Peter A. Freeman**, Assistant Director of the National Science Foundation's Directorate for Computer & Information Science (CISE) and Professor and Founding Dean of the College of Computing at Georgia Institute of Technology, **Barbara G. Ryder**, Professor of Computer Science at Rutgers University, **Thomas S. Huang**, William L. Everitt Distinguished Professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign, **Martha E. Pollack**, Professor and Associate Chair for Computer Science & Engineering at the University of Michigan, and **Philip A. Bernstein**, Principal Researcher in the Database Group at Microsoft Research.

University of Massachusetts Amherst
Spring 2007
Alum Matters
A newsletter for alumni of the Department of Computer Science

Chandra receives NSF CAREER award

The National Science Foundation awarded a Faculty Early Career Development (CAREER) award to CS alum Abhishek Chandra (Ph.D. '05) for his project "Self-Managing Resource Allocation in Unsupervised Distributed Systems."

Chandra is currently an Assistant Professor in the Department of Computer Science and Engineering at the University of Minnesota. His research focuses on operating systems, distributed systems, and computer networking. While at UMass Amherst, Chandra was advised by Associate Professor Prashant Shenoy.

"Recent years have seen a growing deployment of distributed computing infrastructures such as Grids, PlanetLab, @home, and peer-to-peer systems that run a variety of Web, commercial, and scientific applications. Many of these infrastructures are unsupervised. They consist of a large number of loosely-connected nodes that contribute computational and storage resources but are not centrally managed," says Chandra. "Such unsupervised infrastructures are characterized by uncertainty in their resource availability caused by failures, varying load conditions, and node churn, thus putting undue burden on application writers and system administrators for the successful deployment and execution of applications."

For Chandra's CAREER project, he is developing a self-managing resource allocation framework that would hide the infrastructure uncertainties and dynamics from applications, while transparently adapting to changing conditions within the infrastructure. As part of this framework, he is developing techniques for: (i) Predictable resource aggregation to provide resource guarantees to applications in the presence of dynamic loads and changing resource availability, (ii) Reliability-aware resource management to achieve desired levels of reliability and availability, and (iii) System inference and prediction to enable decentralized inference of global system conditions for proactive response to dynamic infrastructure changes.

These techniques are based on cooperation and redundancy among nodes in the infrastructure to provide scalability and decentralization, adds Chandra. His research will enable effective deployment of large-scale scientific and commercial applications on resource-rich but unreliable infrastructures.

"Abhishek has branched off in an exciting research direction, where he is applying techniques for autonomic resource management to unreliable and unsupervised machines in a distributed grid environment," says Shenoy. "I expect his CAREER award, which tackles a number of difficult research problems in this area, to significantly improve the management of very large systems consisting of tens of thousands of loosely coupled machines."

In addition to his CAREER research project, Chandra is also currently involved in the RIDGE project: Reliable Service Infrastructure in Donation-based Grid Environments. The Ridge project is exploring the challenges inherent to hosting large-scale services on a donation-based open Grid. These challenges arise due to dynamic resource heterogeneity, unreliable nodes, and distributed data, Chandra explains. He and his colleagues are working to provide differentiated performance guarantees, including statistical ones, to different members of a community despite the underlying Grid uncertainty.

The NSF CAREER award is NSF's most prestigious award for new faculty members. Chandra joined the University of Minnesota in 2004. He received his M.S. and Ph.D. from UMass Amherst Computer Science and his B.Tech in Computer Science and Engineering from the Indian Institute of Technology. He received the Best Student Paper Award at the 2005 IEEE's International Conference on Autonomic Computing, and he was also nominated for an Association for Computing Machinery (ACM) Doctoral Dissertation Award. Chandra is a technical program committee member for the IEEE Conference on Computer Communications (INFOCOM 2007), the Workshop on Large-Scale and Volatile Desktop Grids (PCGrid 2007), and the International World Wide Web Conference (WWW 2007) of which Shenoy is the Program Chair.

Two CS alums are among the newest ACM Fellows for 2006: **Alexander Wolf** (Ph.D. '85) and **Bryant York** (Ph.D. '81). The ACM Fellows program recognizes and honors outstanding ACM members for their achievements in computer science and information technology. Wolf, a Professor in the Department of Computing at Imperial College London and affiliated appointments at the University of Colorado at Boulder and the University of Lugano, Switzerland, was recognized for his research in distributed system software engineering and service to the community. York, a Professor in the Computer Science Department at Portland State University was recognized for his leadership in broadening participation in computing.

California Governor Arnold Schwarzenegger announced the appointment of **Debra Richardson** (Ph.D. '81) to the state's Broadband Task Force. The task force brings together public and private stakeholders to remove barriers to broadband access, identify opportunities for increased broadband adoption and enable the creation and deployment of new advanced communication technologies. Richardson is a Professor of Informatics and the Ted and Janice Smith Dean of the Donald Bren School of Information and Computer Sciences at the University of California, Irvine.

The Defense Advanced Research Projects Agency (DARPA) recognized **Tom Wagner** (Ph.D. '00) for his significant achievements during 2006. The award for technical innovations was presented to Wagner at DARPA's second annual awards ceremony in December. Wagner is currently a DARPA Program Manager in the Information Processing Technology Office (IPTO).

CS alums **Claire Cardie** (Ph.D. '94) and **Ellen Riloff** (Ph.D. '94) are collaborating with University of Pittsburgh Associate Professor Janyce Wiebe on a new University Affiliate Center (UAF) funded by the U.S. Department of Homeland Security. Their Center for Extraction and Summarization of Events and Opinions in Text (CERATOPS) is focused on developing accurate and robust techniques for extracting and summarizing information about events and beliefs from free text. Cardie is currently a Professor in the Department of Computer Science at Cornell University and Riloff is an Associate Professor in the School of Computing at the University of Utah.

Steven P. Levitan (Ph.D. '84) will serve as general chair of the Design Automation Conference (DAC), the premier educational and networking event for Electronic Design Automation (EDA) and silicon solutions, to be held in June 2007 in San Diego. Levitan is the John A. Jurenko Professor of Computer Engineering in the Department of Electrical and Computer Engineering at the University of Pittsburgh with a joint appointment in the Department of Computer Science.

Nevio Benvenuto (Ph.D. '83) authored a new book that outlines the fundamental theory of communication systems. The book, *Communication Systems: Fundamentals and Design Methods,* is published by Wiley Publishing. Benvenuto is currently a professor in electrical engineering at the University of Padova, Italy. Co-authors include Roberto Corvaja, Tomaso Erseghe, and Nicola Laurenti.

Homecoming 2007
Celebrate the Ph.D. program's 35th anniversary

Help us celebrate the 35th Anniversary of the department's Ph.D. program during Homecoming 2007 which will be held on Friday, October 19, 2007. More details will be posted at **www.cs.umass.edu/homecoming2007.**

New challenge for Cornell

Matthew Cornell, a CS alum (M.S. '92) and department employee for a dozen years, recently left UMass Amherst to pursue a career as a personal productivity workflow consultant.

After reading *"Getting Things Done"* by David Allen (given to him by his boss, Associate Professor David Jensen, Director of the Knowledge Discovery Laboratory), Cornell was surprised by his experience of adopting the ideas. He then dedicated himself to becoming a student of time management ideas, and he started teaching the methodology to others. Encouraged by the feedback, he now runs workshops and one-on-one coaching at client desk-sides.

Cornell says his clients are "smart, sophisticated workers" who are overloaded with information, communications, and commitments, yet know that they can work much more effectively with less stress. He teaches clients concepts that enable them to stay on top of everything in their work and lives. The surprise, he says, is that this often frees his clients' minds to address the bigger issues, such as focusing on where their research or business should be heading, seeing what new opportunities are ahead, and generally applying their talents and intellects more fully.

He continues to consult on campus, with recent clients including those in Administration and Finance, The Center for Collaborative Adaptive Sensing of the Atmosphere, and the Office of Faculty Development, with whom he is creating a productivity program for pre-tenure faculty. He is also the author of "IdeaMatt" (ideamatt.blogspot.com), a popular blog on personal productivity. His web site is **matthewcornell.org.**

We need your continued support

Gifts like yours help the department in many ways, such as funding departmental seminars by outstanding scientists, assisting undergraduate research and helping new faculty establish their research programs. In addition to contributions ear-marked for a specific purpose, general support helps make it possible for us to continue activities that enrich our educational and research programs.

A current need within the department is to upgrade the equipment in our instructional education lab and PC lab with new computers. Also, donations to our CS Endowment fund will have continuing benefits to the department's graduate and undergraduate programs.

Visit **www.cs.umass.edu/csinfo/donate.html** for online donations. If you would like to mail a donation directly to the Department of Computer Science, please make checks payable to "UMass Amherst Computer Science" and mail to: Jean Joyce, External Relations, UMass Amherst, Department of Computer Science, 140 Governors Drive, Amherst, MA 01003-9264. To have a postage paid donation envelope sent to you, send email to **alumni@cs.umass.edu**. Thank you for your support of the department.

Computer Science Alums --- what's new with you?

Please take a few minutes to update your information so that we'll have the correct details when sending out (U.S. mail and email) our newsletter and invitations to our Computer Science events. You can send the details directly to **alumni@cs.umass.edu** or mail them to Jean Joyce, External Relations, UMass Amherst, Department of Computer Science, 140 Governors Drive, Amherst, MA 01003-9264.

Additionally, please send us any updates on your career, education, awards, research, personal life, or anything else that is new since leaving UMass Amherst. Let us know if we can include your news in our newsletter.

For more information on our alums, go to **www.cs.umass.edu/csinfo/alumni.**

Your information

Name: _____

Degree received: BS MS Ph.D. Year received degree(s): _____

Home address: _____

_____

Telephone: _____

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Work information

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Comments: We're interested in hearing what you've been doing since you left UMass Amherst.

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Is it ok to publish your news in the Computer Science newsletter: Yes No

Thank you for taking the time to complete this form.

Department faculty among most highly cited

Our faculty continue to be listed among the most highly cited researchers in the world.

Four of the department's faculty, Professors Bruce Croft, Neil Immerman, Arnold Rosenberg, and Don Towsley, are now included on ISI's most highly cited authors list **(isihighlycited.com)**. According to ISI, a Thomson Scientific Company, individuals on the highly cited list comprise less than one-half of one percent of all publishing researchers.

In another ranking based on Google Scholar citation collections, six current and former faculty members are included in the list of most highly cited. Computer Science professors Bruce Croft, Jim Kurose, Victor Lesser, and Don Towsley, together with former professors Krithi Ramamritham (now at IIT Bombay) and John Stankovic (now at U. Virginia), have an *h*-index of 40 or higher **(www.cs.ucla.edu/~palsberg/h-number.html)**. UC San Diego Professor Jorge E. Hirsch developed the *h*-index as a single metric that incorporates the number of publications and citations. For example, researchers with an *h*-index of 40 have published at least 40 papers that have each been cited at least 40 times. There are only about 100 computer scientists with an *h*-index of 40 or higher.

UMassWiki created by CS undergraduate

Gordon Morehouse, a CS undergraduate who will be graduating this year, has developed the UMassWiki site to provide a comprehensive information source that is useful to everyone in the UMass Amherst community.

The UMassWiki site **(www.umasswiki.com)** is a free, user-editable online encyclopedia of information about UMass Amherst and the surrounding communities.

"I have two main goals for the site. First, I want to make UMassWiki a great resource for everybody, from incoming freshmen to local residents to alums taking a trip down memory lane," says Morehouse. "Second, I really want to increase the number of editors on the site. Our biggest challenge right now is lack of awareness. We serve over 2,500 pages to about 120 visitors a day. That's great, but for the wiki to grow we need to double or triple that."

Since its launch in August 2005, the site has received nearly 1 million hits, primarily from users located at UMass Amherst and in the surrounding area. It is becoming a valuable resource to students and faculty, says Morehouse. One member of the campus' Communications department is in her third semester teaching introductory writing courses using the wiki as a collaborative editing tool. "We're competing with the likes of Duke University for one of the most active and well-maintained student wikis in the nation," adds Morehouse. "We can always use more contributors, so we encourage anyone in the UMass Amherst community to contribute."

GALE – – – – – – – – – – *continued from page 4*

James Allan

The Nightingale project is integrating this type of query reformulation within a deployment of a full end-to-end search system. That is, a system that starts from text documents and audio (speech) sources in English, Arabic, and Chinese. It allows a person to enter a query in English based on one of the templates and uses techniques such as those just described to improve the query's accuracy. It then finds a set of relevant documents, isolates the key pieces of information, eliminates redundancy, and presents the results in English, regardless of the original language or modality.

Allan joined the department in 1994. He is currently the department's Graduate Program Director, and he co-directs the Center for Intelligent Information Retrieval (CIIR) with W. Bruce Croft, a co-PI on the GALE project. Allan received his Ph.D. and M.S. in Computer Science from Cornell University.

RISEMAN – – – – – – – – *continued from page 5*

Riseman was a Fellow of the American Association for Artificial Intelligence (AAAI), a senior member of the Institute of Electrical and Electronics Engineers (IEEE), a member of the Association for Computing Machinery (ACM), and a member of the Pattern Recognition Society. He received his B.S. in Electrical Engineering from Clarkson College and his M.S. and Ph.D. in Electrical Engineering from Cornell University in 1966 and 1969 respectively.

He is survived by his mother, Matilida Birnbaum, a son, Seth Riseman, and his wife Christina, a daughter, Sarah Riseman, and her husband Charles Taylor, a brother, Glenn Birnbaum, and his wife Kim Klemyk, a sister, Michelle Birnbaum, a grandson, Dae Orion Taylor, and many friends and colleagues.

A memorial service was held on March 12, 2007 at the Garden House in Look Park, Northampton. Donations may be made to the Edward Riseman Memorial Fund (Bank of America) from which donations in his name will be made to environmental and other charities that he supported. Should you decide to make a donation, any Bank of America branch can accept your gift. All you need to do is mention the fund name (Edward Riseman Memorial Fund). If you have anecdotes about Ed that you would like to share with his family, send an email to **Remember.Ed@aol.com.**

Clarke and Adrion lead two NSF Alliances to Broaden Participation in Computing

Lori Clarke

Rick Adrion

The National Science Foundation (NSF) Broadening Participation in Computing (BPC) program has awarded eight grants to establish NSF BPC Alliances across the nation, each of which is a broad partnership of institutions and organizations that focus on particular strategies and/or groups underrepresented in computing. Professors Lori Clarke and Rick Adrion lead two of the BPC alliances.

Clarke is leading an alliance of the Computer Research Association's Committee on the Status of Women in Computing Research (CRA-W) and the Coalition to Diversify Computing (CDC) to implement and evaluate programs to increase the participation of women and minorities in computing research.

Projects made possible by this $1.5 million NSF award include: discipline-specific mentoring tracks to provide appropriate mentoring and to build communities of researchers from underrepresented groups within the context of specific research areas; coordinated research mentoring programs to provide the most effective research experience for undergraduates to encourage them to apply and enhance their chances of admission to graduate school in Computer Science and Engineering (CS&E); a new extended mentoring program to help continue and foster some of the mentoring relationships initiated by these and other programs offered by CRA-W and CDC; and a new traveling lectureship symposium to bring outstanding women and minority speakers to institutions without a large number of visiting researchers, women, or minority faculty.

Joining Clarke in directing the "Widening the Research Pipeline" Alliance are Duke Professor Carla Ellis, Andrew Bernat of the CRA, University of Texas at El Paso Professor Patricia Teller, and Princeton Professor Margaret Martonosi.

Recently, the NSF announced a 3-year, $1.9 million grant for the Commonwealth Alliance for Information Technology Education (CAITE). Professor Adrion is the Principal Investigator. With leadership from UMass Amherst, CAITE will design and carry out comprehensive programs that address under-representation in information technology (IT) education and the workforce. The Alliance will focus on women and minorities in groups that are underrepresented in the Massachusetts innovation economy; that is, economically, academically, and socially disadvantaged residents in three regions of Massachusetts (Boston, greater Springfield, and Southeastern Massachusetts).

"Community colleges are the centerpiece of CAITE because of the central role they play in reaching out to underserved populations and in serving as a gateway to careers and further higher education," says Adrion. "Through its community college partners, CAITE will work with high school teachers, staff, counselors, parents and students to increase awareness of opportunities and preparation for information technology careers. CAITE hopes to create pathways from high school to community colleges to upper division and graduate programs in computing and IT, which are supported by advising, mentoring and community," adds Adrion.

In addition to Adrion, CAITE leadership includes Clarke, Professor Jane Fountain of the UMass Amherst Department of Political Science, Deborah Boisvert of UMass Boston, Professor Priscilla Grocer of Bristol Community College, and Dean Adrienne Smith of Springfield Technical Community College. Alana Wiens of UMass Amherst Computer Science is the CAITE Project Manager.

Adrion and Wiens are the co-director and project manager, respectively, of the Commonwealth Information Technology Initiative (CITI), a public-private partnership to promote IT education in Massachusetts, which recently received $1 million in state funding. Clarke is co-chair of the CRA-W. Fountain directs the National Center for Digital Government, the Science, Technology and Society Initiative, and the Women in the Information Age (WITIA) Project. Boisvert is the director of BATEC, a NSF Advanced Technology Education Center. Grocer is the director of the CITI CONNECT Southeast Partnership. Smith is the Dean of the School of Engineering Technologies at STCC.

The NSF BPC program aims to significantly increase the number of U.S. citizens and permanent residents receiving post secondary degrees in the computing disciplines, with an emphasis on students from communities with longstanding under-representation in computing: women, persons with disabilities, and minorities. Included minorities are African Americans, Hispanics, American Indians, Alaska Natives, Native Hawaiians, and Pacific Islanders.

CS faculty teach in Ghana

Professors Lori Clarke, Mark Corner, Victor Lesser, Lee Osterweil and Don Towsley traveled to Ghana in January to teach at a one-week School on Distributed and Embedded Systems and Networks with the aim of helping the African nation further participate in global research and development initiatives.

"Visiting and speaking at the Cape Coast University was a rewarding experience. The students were extremely attentive and asked insightful questions that demonstrated a deep interest in the material," says Clarke. "There is clearly much more that we can do to help computer science students in West Africa."

About 50 students and faculty from Ghana, Nigeria and Togo participated in the program, held at the University of Cape Coast (UCC) in Ghana. Roughly one-third of the attendees were upper-level students from UCC. Other participants included faculty from almost every Ghanaian university and from other African nations. Clarke, Corner, Lesser, Osterweil and Towsley provided lectures covering introductory and advanced topics related to Distributed and Embedded Systems and Networks. Originally, Professor Erik Learned-Miller was to speak but he was injured in a skiing accident just days before his planned departure. To cover for Learned-Miller's absence, Clarke and Osterweil gave a series of lectures on their recent research on medical safety. Medical officers and nurses from the UCC School of Medical Sciences enthusiastically participated.

The School was sponsored by Inspire Programme of Microsoft Research (MSR) Europe, the National Science Foundation (NSF), UMass Amherst and UCC. MSR provided scholarships for tuition and travel for the African attendees. NSF supported the lecturers' travel.

"I was impressed by the keenness of students to learn, and the collaboration between UMass Amherst and the University of Cape Coast in ensuring the summer school was a success. This type of collaboration is extremely important in accelerating academic development around the world, and I am glad that we were able to help make this possible through the Microsoft Research Inspire Programme," says Fabien Petitcolas, the MSR INSPIRE program director.

Some of the Ghana Summer School attendees and lecturers gather in Ghana. Seated from right to left: UMass Amherst Professors Victor Lesser, Don Towsley, Lee Osterweil, and Lori Clarke, UCC Professor Daniel Obuobi, and a school participant.

The School was organized following UCC Professor and IT Department Head Daniel Obuobi's visit to UMass Amherst during the Fall of 2005. Sponsored by the Fulbright Foundation and the Five College African Scholars Program, Obuobi came to UMass Amherst with a goal to adapt instructional technologies, in use and under development at the campus, to address Cape Coast's pressing needs.

Teaching loads in Ghana's colleges and universities tend to be very high and the pay is low relative to the commercial sector, thus there is a shortage of college level instructors, explains Computer Science Professor Rick Adrion, coordinator of the one-week School in Ghana. As a direct result, only about 30 percent of eligible students can attend school at the university level. Enrollment is as high as 1,000 students for some classes, while the largest classrooms may only seat 300, leaving students spilling into the hallways.

There is also a limited communication infrastructure—Internet access is only available by way of VSAT satellite, and students must pay per time used. UCC delivers educational content via the African Virtual University, and while AVU is an online service, often students must travel to UCC to access courses because of the lack of Internet infrastructure. In a third mode, UCC delivers printed material via truck to the small, remote education centers that make up a key part of the higher education system in the country.

One of the effects is that it is very difficult to recruit capable faculty to teach in Ghana and other sub-Saharan colleges and universities. In discussions with UMass Amherst computer science faculty, professors Adrion and Obuobi developed a plan to offer a school that would begin to build a community of researchers and academics across the region. The hope is that the school would interest Ghanaian students in careers as faculty, introduce faculty from Ghana and neighboring countries to current UMass Amherst research activities, and provide a basis for long-term teaching and research relationships.

With help from Petitcolas and Microsoft Evangelist Philip DesAutels, Adrion and Obuobi obtained funding from MSR and from NSF to organize and offer what they hope will be the first of a series of schools offered jointly by UCC and UMass Amherst. A memorandum of understanding is in the works that will encourage faculty and student exchanges between UCC and UMass Amherst, creating a collaborative environment that will continue into the future.

Faculty News

Professor **Rod Grupen** was named Editor-in-Chief of the *International Journal of Robotics and Autonomous Systems*, published by Elsevier.

Professor **Shlomo Zilberstein** edited a special issue of *Annals of Mathematics and Artificial Intelligence* that includes selected papers from the Ninth International Symposium of Artificial Intelligence and Mathematics, a meeting chaired by Zilberstein.

Associate Professor **Hava Siegelmann** received a prestigious fellowship from the Foundations of Complexity Science. Siegelmann was also elected as an editor of *Scholarpedia*, in charge of the Recurrent Neural Networks research area.

Associate Professor **Andrew McCallum** was the keynote speaker at the TextGraphs 2007 workshop. He gave a tutorial on Machine Learning at the Information Theory and Applications Center at University of California San Diego, and he gave an invited talk at the Harvard Kennedy School of Government titled "Bayesian Models of Social Networks and Text with Application to Political, Legal and Bibliometric Data."

Streinu receives Grigore Moisil Award

Adjunct Professor Ileana Streinu, professor of computer science at Smith College, was awarded the Grigore Moisil Award by the Romanian Academy for her paper "On the Number of Embeddings of Minimally Rigid Graphs," co-written by Ciprian Borcea, professor of mathematics at Rider University, and published in *Discrete and Computational Geometry* (Feb. 2004). The annual Moisil Award is the academy's highest honor for theoretical computer science research. The award is named after an important Romanian mathematician and has been presented each year since 2000. The Romanian Academy is a cultural forum, founded in Romania in 1866, that advances scientific research, as well as Romanian language, literature and history. The Moisil Award was presented on December 19, 2006, at a ceremony recognizing the academy's 140th anniversary.

LASER develops new strategic collaboration with major Indian corporation

The Laboratory for Advanced Software Engineering Research (LASER), directed by Professors Lee Osterweil and Lori Clarke, began a strategic research partnership with Tata Consultancy Services (TCS), the largest software company in India. TCS currently has over 80,000 employees worldwide, and is hiring at the rate of about 2,000 people per month in an attempt to keep up with the surging demand for their services. LASER and TCS are applying LASER technology to define and analyze the processes that TCS uses to develop software.

As part of this collaboration, Osterweil and Clarke traveled to Hyderabad, India, where Osterweil gave a keynote address to the TCS annual Technology Conference, and where Osterweil and Clarke spent a few days in close technical interactions with TCS's Business Systems and Cybernetics Centre. To further the research collaboration, TCS is locating two technical team members within LASER's facilities. TCS has also made a gift in excess of $50,000 to help support LASER's research.

"We are really looking forward to working with TCS," says Clarke. "Their extensive expertise in software development provides an unprecedented opportunity to investigate, develop, and evaluate improved software development processes."

In Canberra, Australia, Professors **Lee Osterweil** and **Lori Clarke** gave a half-day course featuring their work in the area of e-government. The course was presented under the joint auspices of National Information, Computer, and Telecommunications Australia (NICTA) and the Australian Government Information Management Organisation (AGIMO). The course was attended by nearly 200 representatives of various Australian government agencies and companies.

The DieHard memory error software created by Assistant Professor **Emery Berger** was featured in *Science Daily, ACM Techworld, ZDNet, Slashdot, Security World*, and a Los Angeles radio interview.

Adjunct Professor **Ileana Streinu**, on the faculty of Smith College, hosted the fall Workshop on Computational Geometry, and a Rigidity Theory Day at Smith College in November 2006.

Assistant Professor **Kevin Fu** and graduate student **Thomas Heydt-Benjamin** continue to get national media coverage on their RFID credit card research. Even a CSI: NY episode had a storyline the looked much like the recent news reports on this research. A new website, **rfid-cusp.org**, was unveiled in February.

Employee of the year

Main office work-study student **Erin Morse** won a Gerald F. Scanlon Student Employee of the Year Award. She will be honored at a campus ceremony in May 2007.

Researcher News

Ramin Khalili is a new Postdoctoral Research Associate in the Computer Networks Lab.

Assistant Professor **Kyung-Soon Lee** of Chonbuk National University in Korea joined the Center for Intelligent Information Retrieval as a Visiting Scholar.

Frank Stolle (Ph.D. '06), rejoined the Visions Lab as a Postdoctoral Research Associate.

CS Alum **Michael Rosenstein** (Ph.D. '03) has returned to the Amherst area and is serving as a Lecturer and teaching CMPSCI 201.

Student News

Kevin Grimaldi and **Matthew Marzilli** were selected for Honorable Mention in the Computing Research Association's (CRA) Outstanding Undergraduate Award competition for 2007.

CIIR graduate student **Desislava Petkova** received a Verizon Rising Star Fellowship this fall.

PRISMS graduate student **Benessa Defend** received a 3-year Ford Foundation Predoctoral Fellowship, administered by the National Research Council (NRC).

Graduate student **James Cipar**, along with co-authors Professors **Mark Corner** and **Emery Berger**, received the Best Paper Award for their paper "TFS: A Transparent File System for Contributory Storage" presented at the USENIX Conference on File and Storage Technologies (FAST 2007).

CIIR graduate student **Shaolei Feng** and his wife Xia are the proud parents of their daughter Sophia Feng, born on December 19.

Michael Wick, a graduate student in the Information Extraction and Synthesis Laboratory (IESL), was accepted to the Coreference team at the Johns Hopkins Center for Language and Speech Processing NSF summer workshop.

Undergraduates **Thomas Buckley, Yuri Pyuro**, and **Eric Raboin** received certificates of achievement for their participation in the 2006 ACM International Programming Contest.

Undergraduate **Michael Krainin** placed first at the 22nd Annual Henry Jacob Mathematics Competition organized by the UMass Amherst Department of Mathematics and Statistics. Krainin received second prize at last year's competition.

Staff News

The main office has seen a few changes over the past few months. **Sharon Mallory** retired from her position as Office Manager and Graduate Program Manager. **Michelle Eddy** joined the staff as the department's receptionist. In addition to her Assistant Business Manager duties, **Laura Macsuga** took over as Office Manager, and **Leeanne Leclerc** was promoted to Graduate Program Manager. Longtime staffers **Laura Bishop** and **Pauline Hollister** left the department for other positions on campus.

The CIIR welcomed **Robert Armstrong** to the lab as a Senior Software Engineer.

Agustin Schapira-Olcese was promoted to Senior Research Software Architect with the Knowledge Discovery Laboratory.

Mallory retires

Sharon Mallory, the department's long-time graduate program manager and office manager, retired in January after an 18 year career at UMass Amherst.

"I very much enjoyed working closely with Sharon in her last semester before retirement," says Associate Professor James Allan, graduate program director. "I remain impressed that she not only managed the graduate program incredibly well, but that she was also a friend and mentor to so many of the students."

Faculty, staff, and students organized a number of celebrations to thank Mallory for her dedication to the department over the years.

"Sharon was graduate program manager for the six years that I was graduate program director. She taught me what needed to be done and made sure things ran smoothly," adds Professor Neil Immerman. "Sharon managed her very complicated job with a remarkable combination of efficiency and kindness. I am glad that she is enjoying her retirement, but I was very sad to see her go."

Now that she is retired, Mallory and her husband Richard plan to travel and spend more time with family.

Significant Bits

Newsletter of the
Department of Computer Science
College of Natural Sciences & Mathematics
at the University of Massachusetts Amherst

140 Governors Drive
University of Massachusetts Amherst
Amherst, MA 01003-9264

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Your news, suggestions, comments, and contributions are welcome. Please mail them to the address above or send them electronically to **bits@cs.umass.edu**.

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