

COMPUTING RESEARCH NEWS

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Congress Provides Symbolic Increase for NSF But Retroactive Across-the-Board Cut Wipes Out Most R&D Gains

By Peter Harsha

After a year's worth of warning that the final funding levels for American science agencies would likely be austere, congressional appropriators surprised many in the science community by passing a slate of funding bills that would have increased funding slightly for federal research at several agencies, including a 3 percent increase at the National Science Foundation.

However, the increases proved to be symbolic as Congress, under pressure to reduce federal discretionary spending in the wake of unanticipated payouts to areas hard-hit by Hurricanes Katrina and Rita, passed an across-the-board 1.0 percent reduction in all FY 2006 appropriations, including those already enacted, eliminating much—and in some cases all—of the approved spending increases for science.

Still, advocates for federal science funding claimed a small victory, arguing that the funding level for NSF approved by Congress (before the across-the-board cut) exceeded the levels originally approved by

both the House and Senate for the agency in their respective bills earlier this year—demonstrating that the community's arguments for the importance of federal support for fundamental research were well received.

NSF received \$5.65 billion in the final FY 06 *Commerce, Justice, Science Appropriations* (H.R. 2682), an increase of 3.3 percent above the agency's FY 2005 level and more than either the \$5.60 billion approved by the House or the \$5.53 billion approved by the Senate in their respective versions of the bill. The increase is contained in the conference version of H.R. 2682—the negotiated compromise between the differing House and Senate versions of the bill. It is somewhat unusual, though not unheard of, for a conference appropriation to exceed the funding level approved by either chamber.

Science advocates point to this unusual circumstance as evidence that the concerns of the science community and their industrial partners—concerns that long-term

underinvestment in fundamental research is endangering U.S. innovation and future competitiveness—carried some weight in Congress. House Science Committee Chairman Sherwood Boehlert (R-NY) referenced the concerns after the bill's passage, noting that the bill would “bolster America's science and technology enterprise, foster innovation, and boost U.S. competitiveness. This is a good bill for science.”

Included in the 3 percent increase approved for NSF is a nearly 4 percent increase to the agency's Research and Related Activities account, which would grow to \$4.39 billion in FY 2006—an increase of 1.2 percent above the level the President requested for the agency in his budget released last February. The bill would also fund NSF's Education and Human Resources Directorate at \$807 million in FY 2006, exceeding the President's request by 9.5 percent, including \$4 million above the request for the Math and Science Partnership program.

The appropriators chose not to indicate funding levels for specific directorates within the R&RA account—which includes the Computing and Information Science and Engineering (CISE) directorate—opting instead to allow NSF

Director Arden Bement to provide his funding plan for the directorates to the appropriations committees for approval within 60 days of the bill's passage.

Also included in the bill is funding for three other science agencies of interest to the computing research community. The National Aeronautics and Space Administration's “Science, Aeronautics and Exploration” account would see a 2.9 percent increase over FY 2005 funding levels, an increase of \$273 million to \$9.7 billion in FY 2006. In the conference report accompanying the bill, the House and Senate negotiators took issue with the extent to which the Administration hoped to reprogram money in the agency towards the President's proposed Moon/Mars initiative. The conferees partially restored funding to the agency's aeronautics and science programs impacted by the President's requested cut, noting that the programs are necessary to “maintain the nation's leadership in science and technology.”

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Computing Research at SRI International

By William S. Mark



This is another in a series of CRN articles describing the activities of CRA's industry laboratory members. Others are posted at: <http://www.cra.org/reports/labs>.

Computer science at SRI International includes many firsts, from the first electronic banking system to invention of the computer mouse. SRI innovations have created new industries, billions of dollars in market value, and lasting benefits to society.

- **Personal Computing.** The personal computer revolution was launched when SRI invented the computer mouse in 1964, and in 1968 demonstrated the concept of windows, hypertext, and videoconferencing.
- **Internet.** In 1969, SRI received the first logon on the ARPANET, which was the first

connection over a broad-area packet-switched computer network. In 1976, SRI also established the first transmission across dissimilar networks, bridging the wired ARPANET and the wireless, mobile PRNET packet radio network located in a van. The digital link was the beginning of internetworked computing that became the Internet.

- **Wireless Communication.** In 1977, SRI sent the first wireless packetized voice message over its packet radio network and across the ARPANET. This technology was the precursor to today's Voice-over-Internet Protocol (VoIP) technology.

Since its founding in 1946 as Stanford Research Institute, and becoming SRI International in 1977, SRI has collaborated with leading universities, and responded to research and development needs of government agencies (including DARPA, NSF, NASA and NIH) and

corporations. The Information and Computing Sciences (ICS) Division pushes the boundaries of computing through programs emphasizing artificial intelligence, computer science, and speech research.

Artificial Intelligence

Since 1966, SRI International has been at the forefront in developing computer capabilities for intelligent behavior in complex situations.

- **Robotics.** From Shakey, the first autonomous mobile robot that could reason about its own surroundings in 1972, to the Centibots, one of the first and largest teams of coordinated robots in 2004, SRI has pioneered advanced robotics demonstrating adaptation to new tasks, team organization, scalability, map building, and fault-tolerant communication.

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Expanding the Pipeline

From the Inside, Out

By Cindy Goral and Dianthe Harris

The Anita Borg Institute for Women and Technology's TechLeaders tackles issue of the under-representation of Women in CS by supporting and training those already there.

It is no mystery; women in CS are a rarity. It is an issue taken up repeatedly in this publication and it is a growing concern across the country throughout academia, industry and government.

The reasons for the relatively small numbers of women are speculated about and well documented.¹ The potential impacts of this under-representation and lack of diversity run the gamut, but are summed up as:

This under-participation in CS by large segments of our society represents a loss of opportunity for individuals, a loss of talent in the workforce, and a loss of creativity in shaping the future of technology. Not only is it a basic equity issue, but it threatens our global economic viability as a nation.²

The Anita Borg Institute for Women and Technology's TechLeaders initiative is tackling the issue from the inside out with the aim of having significant concentric impact on the field of computing and technology by supporting, developing and providing networks and communities for women technical leaders. The TechLeaders program promotes and enhances leadership skills in technical women of all levels, provides a forum to teach and share skills and ideas, and develops content for our community. It is unique in addressing the issue of the under-representation of women by creating and building a community of technical women leaders who are involved in shaping other technical women leaders. By supporting, developing and networking existing technical women leaders, TechLeaders, along with other Anita Borg Institute programs, uniquely addresses the critical issue of Women and Technology.

The goals of TechLeaders are to:

- Change the face of technical leadership in industry, government, and academia;
- Provide technical women with tools that allow them to change their systems, follow their passion, and become more effective;
- Create new technical women leaders;
- Network technical women leaders together; and
- Develop community, tools, and resources.

Women make up approximately 17 percent of the undergraduates in CS nationwide.³ As women move forward in their careers the numbers drop even lower. From feedback we have received in our TechLeaders workshops, women indicate that they often feel isolated, that they are not as effective as they wish to be, that when they speak they feel unheard, that they don't have anything in common with their peers, and that they have to change and adapt to their

existing environments and cultures. They often lack mentors and role models (according to a 2003 Catalyst study, only 11 percent of corporate officers at the top 500 technology companies were female).

Women in technical leadership positions often express the familiar patterns of isolation compounded by new challenges and responsibilities. And increasingly companies understand that this winnowing away of women in technical leadership roles can have a deleterious effect on their own organization's ability to hire, train and retain a diverse and dynamic workforce. Promoting, supporting and retaining female technical leaders has become a priority for many organizations that recognize their value, not only as leaders but as role models, mentors, and advisors to the next generation of women in computing.

The TechLeaders workshop curriculum is designed to teach new skills, while developing new connections and strengthening old ones. The ability to understand the role of women in leadership offers a greater self-awareness of the strengths and challenges women face, and encourages new ideas on the next steps needed to improve leadership and expand their networks.

The TechLeaders program brings women together who can learn from both experts in key topics and from each other, allowing them to become more effective leaders within their organizations. And while other programs cater to academia or industry alone, TechLeaders brings these women together where they learn effective practices from each other and share their differing perspectives and challenges.

A key component of the program is the coalescing of a community of technical women leaders involved in shaping other technical women leaders. This "learning from each other" approach makes TechLeaders a unique vehicle for changing the face of technical leadership. These workshops have been life-changing events, empowering women by allowing them to broaden their choices. By providing technical women with tools that allow them to change their systems, follow their passion and become more effective, the program creates new technical women leaders from within the existing technical community while inspiring a new cadre of tomorrow's leaders as well.

The TechLeaders initiative addresses a clear need. During the Senior Women's Summit at the 2002 Grace Hopper Celebration a group of leading technical women expressed a strong desire for leadership training and support. In direct response to this request, a pilot TechLeaders workshop

was held in January 2004 in cooperation with the Institute for Pure and Applied Mathematics at UCLA. Since that time the one- and two-day workshops have sold out, and plans are underway to expand the number and scope of the workshops.

Each TechLeaders Workshop has a theme identified as a key leadership issue that senior technical leaders face in the community, with peer-learning and networking a strong component. Depending on the theme, each workshop includes material from an expert in that area to augment the learning process. Confidentiality is emphasized, which allows conversations to be open and honest. Topics have included Leadership for Cultural Change, Skills and the Art of Leadership, Effective Technical Leadership Styles, Developing and Running Effective Organizations and Institutions, Developing and Turning Your Vision into Action, and Combining Theatre and Voice with Leadership.

The most recent TechLeaders Workshop, "Getting from Good to Great," was held November 4-5, 2005, at Microsoft. Fifty-seven women leaders in mathematics, computer science, and technology gathered, with 48 percent coming from academia and 44 percent from industry. The participants, including executives, professors, researchers, and deans, met to talk with peers about the challenges they face and the knowledge they have gained from these experiences in their careers. The facilitator and her team brought significant coaching experience that greatly enhanced and structured the conversations of the interactive sessions.

The women who attended this workshop and those who have attended past TechLeaders workshops want to change the culture for women. They want to promote more diversity in the workplace and bring more women into technical roles. These women are concerned about developing their roles as leaders and getting a better understanding of how women lead differently than men, as well as how being female affects technical leadership. They are aware that their contributions as leaders are different from those of men and, because of this, they may not be recognized as valid because their techniques differ. Sharing their experiences in supportive groups offers the women different ways of maintaining visibility and shows them how this can be the first step to cultural change.

Learning to effect cultural change is no small task. The TechLeaders workshop is extraordinary because it stresses solutions that are based on interdisciplinary research that cuts

From the Inside, Out
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Computing Research Association

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CRA Outstanding Undergraduate Award Winners Announced

The Computing Research Association honors the recipients of the CRA Outstanding Undergraduate Awards for 2006, sponsored this year by Mitsubishi Electric Research Labs, Microsoft Research and Mitsubishi Electric Research Labs are sponsors in alternate years.

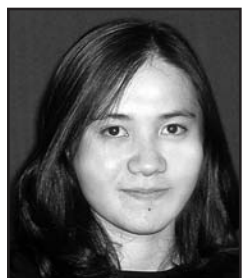
Winner, Male Award



David Eisenstat is a senior at the **University of Rochester**. He is majoring in Computer Science with a minor, and potentially a second degree, in Mathematics.

David has done significant research in both Theoretical Computer Science and Mathematics. At Rochester he has worked on a range of deep problems in the areas of parallel computing, distributed computing and computational complexity. This has led to one published paper and several other papers in preparation. David has participated in NSF's Research Experience for Undergraduate (REU) program for two summers, doing mathematical work in the areas of combinatorics and graph theory. This has led to several papers currently under review. In his computer science and mathematics work, David is a prime innovator, doing work that is clearly the equal of a good graduate student. In addition to being an excellent theoretician, David is a skilled programmer and has a near-perfect GPA. He was elected to Phi Beta Kappa as a junior and is president of the student ACM chapter. His computer science interests are complemented with a keen interest in choral singing, as well as music theory and composition.

Winner, Female Award



Jenny Yuen is a senior at the **University of Washington** majoring in Computer Science and Engineering.

Jenny's research is on object and concept recognition for content-based image retrieval. This work has led to one publication with several more on the way. In the past year her focus has been on a medical application of image analysis. In this project she is performing like a graduate student, developing novel techniques of her own design and implementing them to produce a working system. Jenny has worked as a summer intern at both Microsoft and Google and has received scholarships from both companies.

Prior to attending the University of Washington, Jenny attended Escuela Nacional Preparatoria (the National High School of Mexico) where she was one of the top ten students in a class of 11,000 students. As a junior at the University of Washington she received an Honorable Mention in the CRA's 2005 Outstanding Undergraduate Award competition. In addition to research, Jenny has worked as a consultant for the Minority Science & Engineering program, and is strongly involved in the student chapter of the ACM.

Runner-Up, Male Award



Kanat Tangwongsan is a senior at **Carnegie Mellon University**, majoring in Computer Science.

Kanat's research combines theoretical computer science and system building. His primary work is toward a semi-automated system for converting static algorithms that compute an output from an input into dynamic algorithms that efficiently maintain an input/output relationship as the input changes incrementally. This work has required both system-building skills and the theoretical discovery of new algorithms and data structures. The work has led to one publication and two more papers currently in preparation.

In addition to his research and the time required to obtain a perfect GPA, Kanat spends a lot of time as a teaching assistant and mentoring

other students. Prior to entering CMU, Kanat won first place in Thailand's National Olympiad of Informatics in 2000.

Runner-Up, Female Award



Susanna Ricco is a senior at **Harvey Mudd College**, with a joint major in Computer Science and Mathematics.

Susanna has pursued two independent areas of research. Working for two summers at Sandia National Labs, she has created a system for adjusting a detailed model of an aerodynamic shape so that it closely matches observed vibrational data. She surpassed all expectations by creating a fully automatic system. At Harvey Mudd Susanna was the organizational and technical lead of the four-person team that created Harvey Mudd's entry into AAI's 2005 robot competition. This robot won the competition even though it was an order of magnitude cheaper than any other entry and all of the code was written from scratch by the team members.

Susanna has received scholarships from Lockheed Martin and Akamai. She is strongly involved in the student chapter of the ACM. In addition to her computer science interests, Susanna holds an FCC amateur radio license and is active in public service and emergency communications.

Finalists, Female Award

Sarah Aerni, UC San Diego; **Dana Glasner**, New York University/Yeshiva University; **Anna Huang**, University of Southern California; **Kathryn Seyboth**, Tufts University; and **Inna Zakharevich**, Harvard University.

Finalists, Male Award

Salvatore Guarnieri, University of Virginia; **Jonathan Su**, University of Washington; **Robert (Kang-Xing) Jin**, Harvard University; **Yevgeniy Medynskiy**, Cornell University; and **Christopher Hundt**, McGill University.

Honorable Mention, Female Award

Timsy Bir, University of Colorado at Boulder; **Claire Lackner**, Columbia University; **Catherine Lennon**, Columbia University; **Marjorie Locke**, University of Western Ontario; **Lindsay Semler**, DePaul University; **Marcella Tanzil**, Ohio State University; **Ella Wellman**, University of Wyoming; **Sherita Andrews**, Auburn University; **Krista Davis**, University of Washington; and **Danielle VanDyke**, Michigan Technological University.

Honorable Mention, Male Award

John Novatnack, Drexel University; **Gregory Harm**, Brown University; **Abninder Litt**, University of Waterloo; **Benjamin Hindman**, University of Washington; **Evan Sultanik**, Drexel University; **David Blinn**, Dartmouth College; **Khanh Do Ba**, Dartmouth College; **Wei Tu**, University of California at Berkeley; **Muhammad Ahmad**, Rochester Institute of Technology; and **Wei-Lung Dustin Tseng**, University of British Columbia.

This year's selection committee included Richard Waters (Mitsubishi Electric Research Labs) Chair; Duane Bailey (Williams College); Anne Condon (University of British Columbia); and Deepak Kumar (Bryn Mawr College). ■

For Department Chairs and Lab Directors

All Roads Lead to Snowbird, Utah for

CRA's Conference at Snowbird June 25-27, 2006

See: <http://www.cra.org>

CRA-W Canadian Distributed Mentor Project

A program to encourage undergraduate women in computer science and computer engineering to go to graduate school.

Application Deadline for Students and Mentors Friday, January 20, 2006

Details: <http://www.cra.org/Activities/craw/cdmp/index.php>



Participating in a panel discussion at the recent CRA Grand Research Challenges Conference on "Revitalizing Computer Architecture Research" are (l-r): Bob Colwell (Colwell Inc.), Ravi Nair (IBM), Chuck Moore (AMD), Justin Rattner (Intel), and Steve Scott (Cray Inc.).

An Analysis of CISE Funding in FY 2005

By Rita Koch and Michael Pazzani

This article reviews CISE funding actions and practices in the past year.

The National Science Foundation provides 86 percent of the federal funds for fundamental university research in computer science, according to the latest available figures. In spite of the demand this generates and the fact that our FY2005 budget was slightly less than FY2004, the “success rate” for competitive proposals submitted to CISE rose from 16 percent in FY2004 to 21 percent in FY2005.

The CISE budget has been relatively flat for the past two years and is unlikely to see substantial increases in the next few (See Figure 1). In this graph, funds devoted to cyberinfrastructure have been removed for all years.¹ In FY2005, NSF suffered its first reduction in years, operating at 1.9 percent below the FY2004 level. CISE’s budget was approximately one-half percent below the FY2004 level. CISE funding in FY2005 was approximately 9 percent of NSF’s total budget and 11.6 percent of the research budget.

In FY2006, CISE’s budget is anticipated to be only slightly better than the FY2005 budget. The overall NSF budget has been appropriated by Congress and signed into law at a level 3 percent above the FY2005 level, but there may be an across-the-board rescission to help with the general Federal budget situation and funds have not been allocated within NSF yet.

This budget situation comes after a period in which many universities increased the number of faculty in the areas of computer and information science and engineering. Each year from 2000-04, CISE saw an increase in the total number of people submitting a proposal (See Figure 2). Furthermore, during this time frame at least 1,000 people a year who had not previously applied to CISE for research funding submitted their first proposal. Approximately 16 percent of the new proposers submitted to the interdisciplinary ITR program, with the majority submitting to regular CISE programs. This growth includes newly hired Ph.Ds, people from industrial research labs taking faculty positions, and faculty whose research focus has

shifted to CISE as the field of computer science has expanded.

CISE has not imposed any Directorate-wide policies to deal with the dangerously low acceptance rates we have been experiencing, but each Division within CISE has taken steps to adjust its solicitations to improve the acceptance rates, given the budget trends and growth in the field.² These steps have included limiting the number of proposals an individual may submit to a solicitation; using funds from two fiscal years to increase the amount of money available to some competitions; and collaborating with a number of agencies, including the National Institutes of Health, Department of Homeland Security, and Library of Congress, to fund projects of mutual interest. Furthermore, CISE is vigorously enforcing policies that prohibit the submission of nearly identical proposals to more than one competition simultaneously.

These policies are starting to have an effect. Figure 3 shows that in FY2005, CISE has increased the funding rate to 21 percent from a low of 16 percent in FY2004. By moving a deadline from winter to spring, Information and Intelligent Systems was able to fund an additional 65 proposals in FY2005 that could not be funded in FY2004. The number of CISE awards in FY2005 increased by close to 7 percent over the FY2004 level of 1,017, while the number of proposals decreased by more than 16 percent from the FY2004 level of 6,266.

CISE’s funding rate has been below NSF’s since FY2000 and was beginning to drop precipitously. In FY2004, NSF’s funding rate was 24 percent, while CISE’s had dropped to 16 percent. The actions taken in FY2005 have been a factor in bringing CISE’s funding rate closer to the NSF average. This rate is still low by historical standards.

In FY2005, the average annual CISE award was \$137K, a decrease from the FY2004 level of \$147K. This decrease is primarily due to the end of the ITR competitions and the transitioning of ITR funds into CISE divisional programs and emphasis areas. Nevertheless, we are still

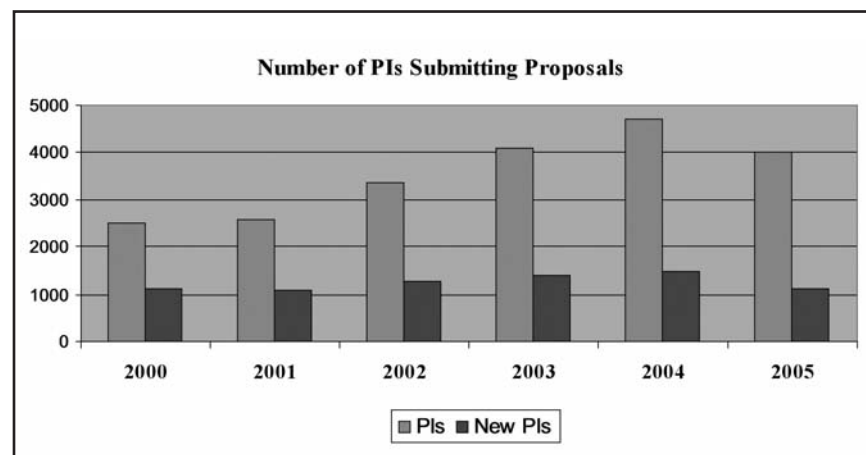


Figure 2. Number of people submitting at least one proposal in a year.

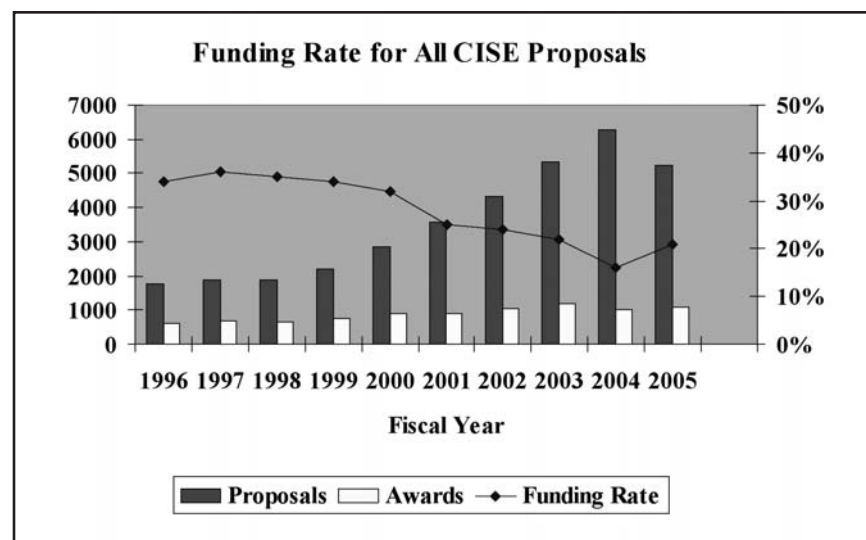


Figure 3. Funding rate for all CISE proposals.

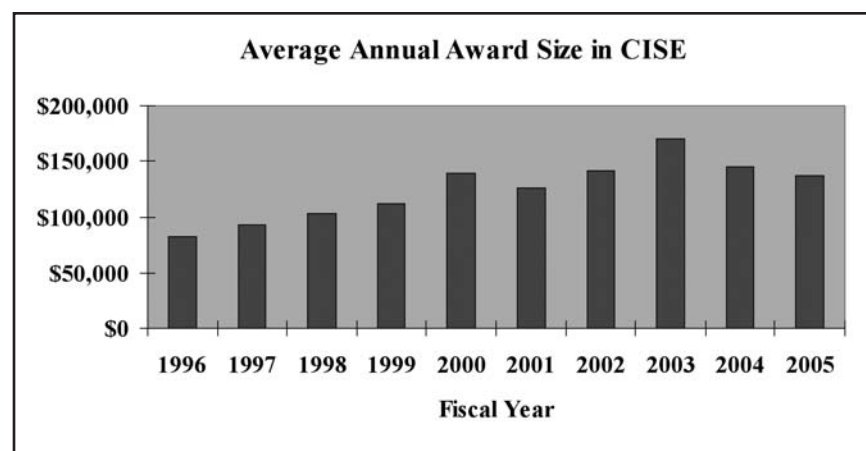


Figure 4. Average annual award size in CISE.

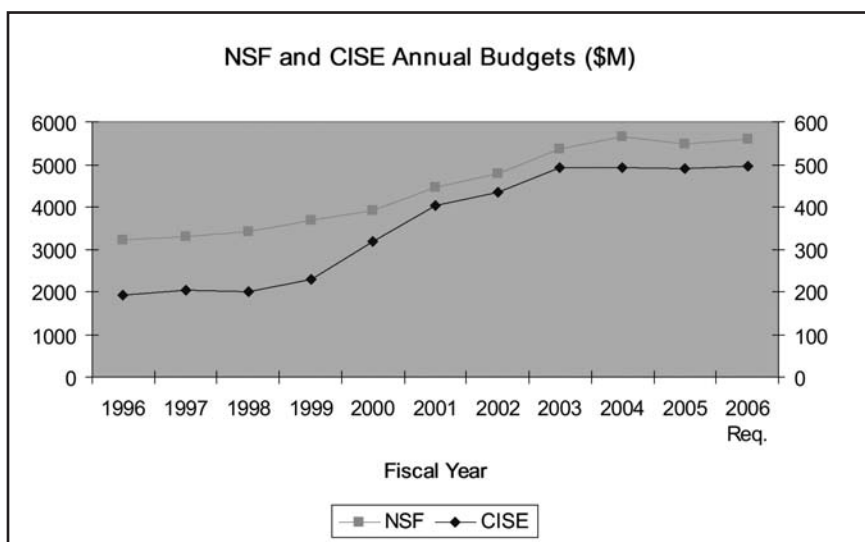


Figure 1. CISE budget (without cyberinfrastructure) and NSF’s total budget.

funding some “center-scale” awards and intend to do more when funds are available. The large majority of CISE awards continue to be for three years’ duration.

NSF and CISE seek to fund a diverse group of investigators. Table 1 shows the acceptance rates for various groups. For Female and Minority PIs, the funding rate is slightly higher than the CISE average. However, far too few of the applicants are women (15.2%) and minorities (4.1%). In FY2005, CISE released a broadening

participation solicitation that has the goal of attracting more women and minorities to the field to try to improve this situation.

The table also shows that those people who have never been funded by NSF submit 41.6 percent of the proposals to CISE and have a lower-than-average funding rate of 14 percent. Another statistic shows that CISE does indeed fund proposals from a wide range of institutions.

Analysis of CISE Funding
Continued on Page 6

	All	Female	Minority	No Previous Proposals to NSF
Submitted	5,236	797	217	2,178
Funded	1,088	186	48	315
Acceptance Rate	21%	23%	22%	14%

Table 1. Acceptance Rates for CISE proposals.

Transitions, Appointments and Awards

AAAS recently announced new AAAS Fellows in Information, Computing, and Communication. Congratulations to: **Ashok K. Agrawala**, University of Maryland, College Park; **Daniel M. Cotter**, URS Corp., Gaithersburg, MD; **James D. Foley**, Georgia Institute of Technology; **Eugene C. Freuder**, University College Cork, Ireland; **Philip Green**, University of Washington; **Joseph Y. Halpern**, Cornell University; **Ravishankar K. Iyer**, University of Illinois, Urbana-Champaign; **Anil K. Jain**, Michigan State University; **Christopher R. Johnson**, University of Utah; **Suzanna E. Lewis**, University of California, Berkeley; **Linda R. Petzold**, University of California, Santa Barbara; **Eric S. Roberts**, Stanford University; **Daniel P. Siewiorek**, Carnegie Mellon University; and **Walter L. Warnick**, U.S. Dept. of Energy, Germantown, MD.

Phil Bernstein, Senior Researcher at Microsoft Research and Treasurer of the CRA board, has been appointed to the National Academies Board on Mathematical Sciences and Applications for a term of three years.

Elisa Bertino, Purdue CERIAS's Director of Research, has been named the 2005 recipient of the IEEE Computer Society's Tsutomu Kanai Award. The award recognizes major contributions to state-of-the-art distributed computing systems and their applications. The award consists of a certificate, crystal memento, and a \$10,000 honorarium.

Virgil Gligor, Professor of Electrical and Computer Engineering at the University of Maryland, College Park, was presented with the 2006 National Information Systems Security Award by the National Institute of Standards and Technology and the National Security Agency in a ceremony at the Annual Computer Security Applications Conference in Tucson, AZ on December 6, 2005. Dr. Gligor was recognized for his outstanding contributions to advance computer security technology.

Congratulations to CRA board member **Leah Jamieson**, Associate Dean for Undergraduate Education, Schools of Engineering at Purdue University, who has been elected IEEE President-Elect for 2006 and President for 2007.

Michael Pazzani has been appointed Vice President for Research and Graduate and Professional Education and Professor of Computer Science at Rutgers University, effective January 11, 2006. Dr. Pazzani served as the Director of Information and Intelligent Systems at NSF/CISE since 2002. Prior to joining NSF, he was professor and department chair of Information and Computer Science at UC Irvine.

Benjamin Wah, Professor of ECE at the University of Illinois, Urbana Champaign, has been appointed as one of the IEEE Computer Society's members on the CRA Board of Directors, effective January 1, 2006. He replaces Oscar Garcia, Founding Dean of Engineering at the University of North Texas, who has served since 2004.

Congratulations to **Stu Zweben**, Professor of Computer Science and Engineering at The Ohio State University who recently received an ABET Fellow Award at the 2005 ABET Annual Meeting in San Diego. The annual award recognizes those individuals who have given sustained quality service to the ABET-related professions, in general, and to education within the ABET disciplines, in particular, through the activities of ABET. ■



John Shen (Intel), co-chair of the recent CRA Grand Research Challenges Conference on "Revitalizing Computer Architecture Research," and Kathy Yelick (UC Berkeley) discuss potential grand challenges.

CRA Academic Careers Workshop
for
New Faculty and Advanced Graduate Students
in
Computing-Related Disciplines

February 27-28, 2006
Grand Hyatt Metro Center, Washington, DC

See: <http://www.cra.org>

Community Mourns Loss of Jerre D. Noe

Jerre D. Noe, the first chair of Computer Science & Engineering at the University of Washington, died on November 12, 2005 after a brief illness. He was 82 years old. Under his leadership, UW CSE became one of the strongest computer systems research groups, and one of the top computer science programs, in the world.

A native Californian, Dr. Noe received his Bachelors degree in electrical engineering from UC Berkeley. After conducting radar R&D in Europe during World War II, he received his Ph.D. in electrical engineering from Stanford University.

Dr. Noe then joined Stanford Research Institute where as Assistant Director of Engineering he led the technical team for the ERMA project, which first computerized banking in the 1950s for Bank of America. Dr. Noe and his ERMA team were honored by SRI in 2001 with the Weldon B. Gibson Achievement Award.

In 1968, Dr. Noe joined the University of Washington as the first Chair of the Computer Science Group and its graduate program, concluding his term in 1976. He guided the Computer Science Group to departmental status and the introduction of a Bachelors program in 1975. As a senior faculty member, he directed the *Eden Project*, the first award in the National Science Foundation's Coordinated Experimental Research program.

After his retirement in 1989, Dr. Noe remained active in the life of the department. University of Washington Computer Science & Engineering is only one of his many legacies. He will be greatly missed by his colleagues, who describe him as "a tough act to follow." ■

For additional information on Dr. Noe's contributions, see <http://noe.cs.washington.edu/>.

CRA Service Awards 2006

Distinguished Service Award

and

A. Nico Habermann Award

Nominations Due: **February 4, 2006**

See: <http://www.cra.org>

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Canadian CIS Enrollments and Degree Production

By Jay Vegso

After more than a decade of strong growth, the number of bachelor's degrees awarded by Canadian institutions in Computer and Information Sciences (CIS) appears set to level off or decline. However, the number of masters and doctoral degrees awarded should continue to increase.

According to an analysis of data from Statistics Canada (<http://www.statcan.ca/>), 6,020 bachelor's degrees were awarded in CIS in academic year 2003/2004 (Figure 1). This was an increase of 9 percent from 2002/03 and more than two-and-a-half times the number awarded in 1992/93. At

the master's level, the 790 CIS degrees granted in 2003/04 represented a 16 percent increase over the previous year and 140 percent more than in 1992/93 (Figure 2). The number of CIS doctorates awarded in 2003/04 was 110, compared to the median of 75 granted between 1992/93 and 2002/03 (Figure 3).

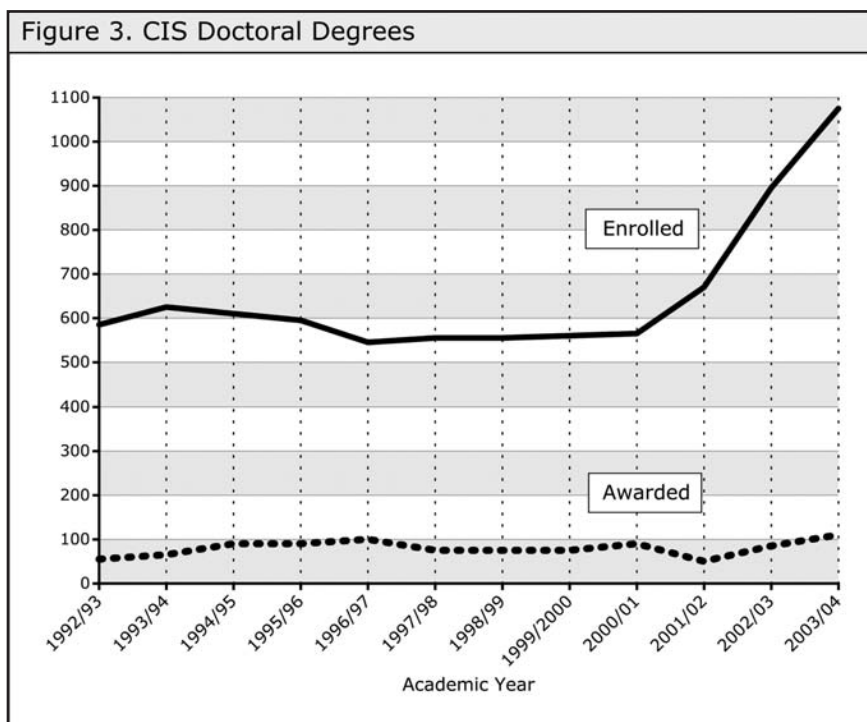
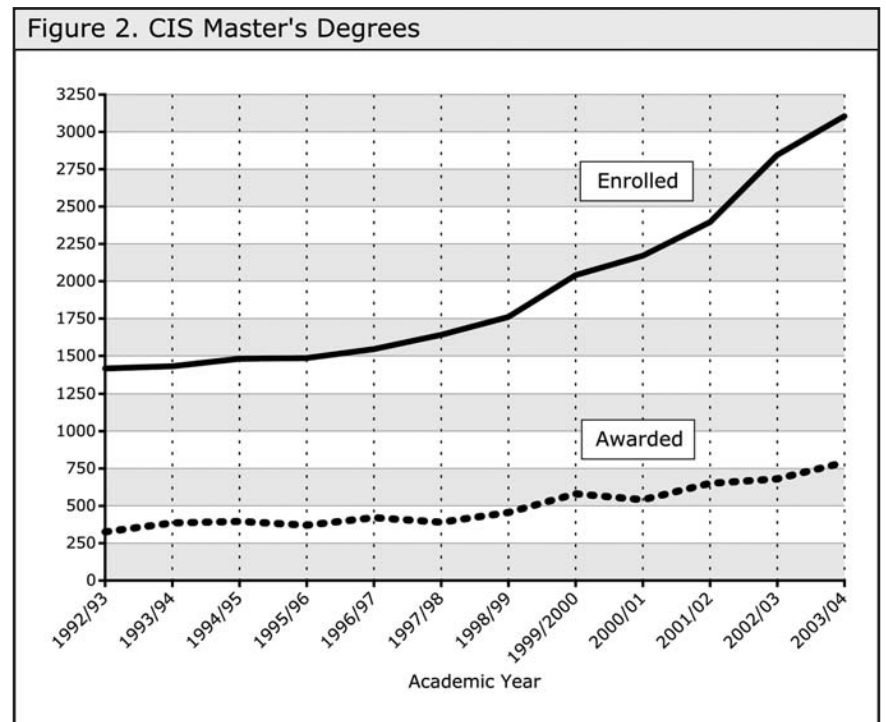
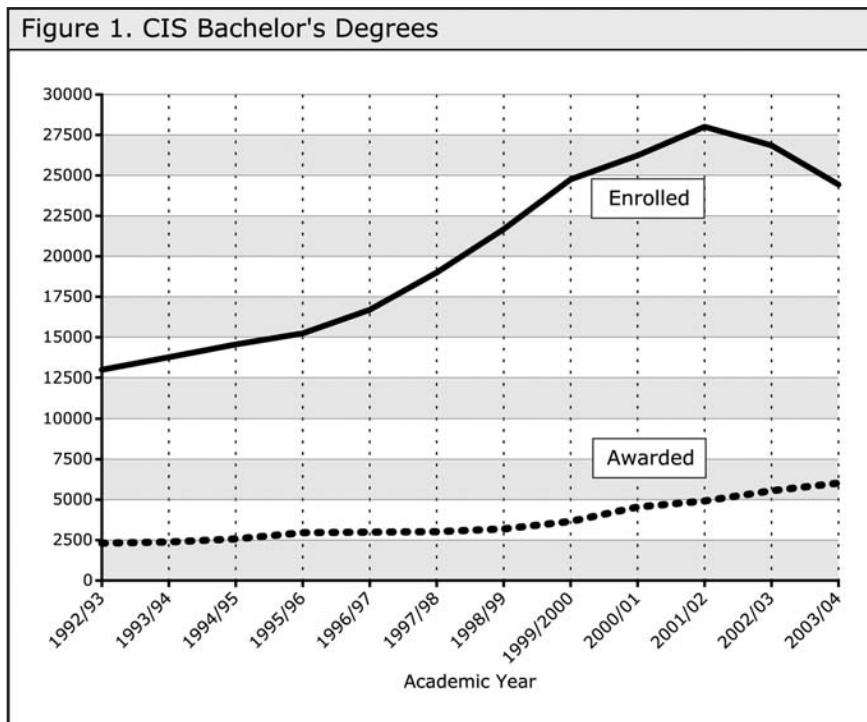
Enrollment data suggest that the number of bachelor's degrees produced will level off or shrink in a few years. Enrollment figures from 2003/04 were nearly 13 percent lower than their peak in 2001/02, compared to a 13 percent increase among all bachelor's

degree programs. As a result, CIS represented 3.5 percent of total enrollments in 2003/04, compared to 4.5 percent in 2001/02. The biggest decline in bachelor's degree enrollments has been among women: 30 percent fewer women were enrolled in 2003/04 than in 2001/02, compared to an 8 percent drop among men for the same period.

At the graduate level, CIS enrollments continued to surge. Among master's degree programs, enrollments grew 9 percent in 2003/04, to 3,105. The rate of growth at the doctoral level has been even more pronounced:

20 percent higher between 2002/03 and 2003/04, to 1,105 students, and 90 percent higher since 2000/01.

Overall CIS degree enrollment and production trends at Canadian institutions are similar to those seen in the United States. The number of degrees awarded at all levels has grown rapidly in the past decade. Recent enrollment figures would suggest a slowdown in bachelor's degree production in the coming years, in contrast to continued growth at the graduate level. ■



	Enrolled			Awarded		
	Bachelor's	Master's	Doctorate	Bachelor's	Master's	Doctorate
1992	21%	22%	16%	22%	20%	20%
1993	21%	23%	15%	20%	21%	15%
1994	20%	22%	17%	22%	23%	11%
1995	19%	23%	16%	22%	22%	12%
1996	19%	24%	18%	22%	23%	10%
1997	20%	25%	19%	20%	23%	13%
1998	21%	25%	20%	21%	29%	14%
1999	23%	27%	19%	21%	25%	20%
2000	23%	27%	20%	24%	31%	17%
2001	23%	28%	22%	23%	29%	0%
2002	20%	29%	23%	24%	27%	13%
2003	18%	28%	24%	23%	31%	18%

Table 1. Women's Share of CIS.

Analysis of CISE Funding from Page 4

In FY2005, CISE funded 32.3 percent of the proposals submitted by PIs from one of the top 24 universities in the most recent *US News and World Report* ranking of Computer Science Graduate Programs, 22.9 percent of those from the next 24 universities, and 17.4 percent of the others. CISE participates in a number of regional outreach workshops to help familiarize potential PIs with NSF proposals, and we encourage PIs new to grant-writing to participate in a workshop.

CISE will continue to adapt its policies to improve its support to the community. However, our overall goal will remain the same: supporting the innovative computer science research and education projects that will have the greatest impact, while broadening the participation of all groups in computing.

Endnotes:

¹The Shared Cyberinfrastructure Division was transferred to the Office

of the Director and renamed the Office of Cyberinfrastructure in July 2005. While the overall CISE budget has been decreased by approximately 20 percent by this reorganization, our reorganization in 2003 localized all of the cyberinfrastructure budget in the SCI Division and put all of the research in the three remaining divisions. As a result, the budgets focused on the activities of the computer science research community remain unaffected. This reorganization has the advantage of freeing CISE to focus on research, education, broadening participation, and

research infrastructure for the computer science and engineering community.

²See "CISE Update: Adjusting to the Increase in Proposals," Pazzani et al., *Computing Research News*, Vol. 16/No. 5, November 2004.

Michael Pazzani is Senior Science Advisor and **Rita Koch** is Staff Associate for Budget and Planning in NSF's CISE division. ■

- **Computer Vision.** SRI is advancing techniques for three-dimensional object recognition, location, tracking, and change detection from a range of sensors. Recent work includes real-time visual odometry from stereo and recognition of people and vehicles from very short video clips taken from unmanned aerial vehicles.
- **Automated Reasoning.** SRI researchers have been responsible for major developments in resolution theorem proving (PTTP and SNARK systems) and its application to reasoning by abduction in natural-language interpretation, to software synthesis and, more recently, to the composition of web services.
- **Planning and Control.** SRI pioneered the development of generative planning (with STRIPS, QA4 and NOAH systems) and reactive planning (with PRS). It is currently leading the development of integrated human-machine planning and execution monitoring methods based on the advice paradigm.
- **Knowledge Acquisition.** SRI is developing techniques that allow domain experts to enter into a knowledge base information rich enough to allow a system using it to answer questions as difficult as those found in standard achievement tests, using declarative inference and simulation.
- **Integrated Learning.** SRI is leading a group of more than 20 universities and companies in the CALO project, whose objective is to integrate learning with sensing, reasoning and action, and to evaluate it in an intelligent assistant system that learns "in the wild." At the end of its second year, the CALO system demonstrated significant improvement in its performance due to learning in a test modeled on a standard achievement test.
- **Structured Argumentation.** SRI has developed and fielded a set of tools allowing intelligence analysts to collaborate on the design of analysis methods, to define complex patterns for searching databases, and to brainstorm solutions.
- **Bioinformatics.** SRI is building and distributing pathway genome databases for more than 140 organisms, along with development and visualization tools. Novel machine learning algorithms predict the metabolic pathway complement of an organism from its genome. New methods based on rewriting logic are being used for the modeling and analysis of signal transduction and metabolic networks in mammalian cells.

Computer Science

SRI International's contributions to computer science began in the

early 1950s with the development of the first banking industry computer, the Electronic Recording Method of Accounting (ERMA).

- **Cyber Security.** Pioneering novel methods of network intrusion detection, protocol development and evaluation, and distributed transaction processing, SRI develops trustworthy, secure solutions to reliable business and personal communication needs. Since 1983, the Intrusion Detection Expert System (IDES), Next-Generation IDES (NIDES), and EMERALD have performed real-time monitoring of user activity on multiple target systems.

In the 1970s and 1980s, SRI pioneered security work such as PSOS (described below), the formal methods used to analyze the Kernelized Secure Operating System, and SeaView (a multilevel-secure database management system). SRI is developing advanced networking with privacy controls for collaboration over secure virtual subnets, and runs the Department of Homeland Security's Cyber Security Research and Development Center. Ongoing research projects address large-scale network security, wireless security, supervisory control and data acquisition (SCADA) system security, and privacy-enhancing technologies.

- **Advanced Computing.** SRI pushes the boundaries of computing through new methods for distributed information processing, computational logic, and formal verification of computer systems, studying the logical foundations of scalable systems beyond the scope of traditional testing and simulation, and building efficient tools for rigorous mechanical analysis.

With the software-implemented fault-tolerant (SIFT) avionics computer in the 1970s, SRI invented the modern approach to fault tolerance, based on Byzantine fault models and state machine replication. In the same period, SRI's Provably Secure Operating System (PSOS) pioneered modern approaches to security, leading to the concepts of noninterference and separation kernels. Both SIFT and PSOS benefited from mechanically assisted formal verification using the Hierarchical Development Methodology (HDM), which was one of the first formal specification languages with theorem proving support.

SRI continues to develop tools for formal verification, and is the only group with state-of-the-art capabilities in mechanized theorem proving (PVS verification system), model checking (SAL suite of model checkers), and embedded deduction (ICS solver for SAT, MaxSAT, and SMT problems). SRI and external users of these tools apply them to challenging problems in assurance for dependable automotive and avionics systems and for Multiple Independent Level Security (MILS) systems, and to other applications requiring high assurance. These

tools have recently been applied to molecular and whole-organism systems biology.

Speech Research

SRI International is a recognized leader in advanced research in speech technologies. SRI develops and licenses speech recognition engines and tools packaged as software development toolkits, which developers incorporate into their products and services.

- **Speech Recognition.** In the 1990s, SRI spun off market leader Nuance Communications, Inc. (Nas: NUAN) to exploit its speech recognition technology for automated access to information and services over the telephone, as first used by Charles Schwab & Co., Inc. for stock quotes in 1996. Customers of Nuance are using it today for travel reservations, product ordering, and banking. U.S. soldiers use SRI spoken translation technology overseas. EduSpeak® software brings speaker-independent voice recognition to education and training software. DynaSpeak® speech recognition technology is licensed for products requiring a small footprint, such as mobile and embedded platforms.
- **Speaker ID.** SRI is a pioneer in modeling speaking "style," or behavioral aspects of how a person talks, and integrating this information with conventional features modeling voice characteristics. SRI's state-of-the-art speaker recognition uses short-term spectral features, and high-level features estimated from patterns of prosodic events. The SRI system has been ranked as one of the best systems on text-independent tasks by the National Institute of Standards and Technology for the past three years.
- **Prosody.** SRI pioneered the use of "direct modeling" of prosody (intonation, duration, energy, voice quality), using information automatically extracted from speech audio based on the output of automatic speech recognition.

Successful applications have included automatic punctuation and topic detection, emotion recognition, dialog act modeling, detection of deceptive speech, and automatic speaker verification.

Distinguished Information and Computing Sciences Staff at SRI

The 170-person professional staff of SRI International's ICS Division includes many noted contributors to advancements that have an impact throughout the computing world, including Fellows of the Institute of Electrical and Electronics Engineers (IEEE), Association for Computing Machinery (ACM), American Association for the Advancement of Science (AAAS), and American Association for Artificial Intelligence (AAAI).

Other distinctions include the 2002 National Computer System Security Award, the 2002 Herbrand Award for contributions to Automated Reasoning, and the 2005 ACM SIGSAC Outstanding Contributions Award.

Commercialization

Bringing a new product or service to the marketplace requires a collaborative, disciplined approach. SRI develops ideas into compelling solutions to create new value for clients. We start by understanding their important needs to form just the right team. Together, we determine an approach to maximize return on investment.

Government agencies, commercial businesses, and private foundations turn to SRI for solutions to important problems. SRI offers each client flexible working relationships to meet its specialized needs. We respond to client-sponsored research and development, technologies for license, strategic partnerships, and new spin-off ventures. Our clients capitalize on SRI's experience at all stages of the value chain: basic and applied research, technology development, prototyping, and product commercialization.

Dr. Mark (william.mark@sri.com) is Vice President, Information and Computing Sciences, at SRI



Shown at the recent CRA Grand Research Challenges Conference on "Revitalizing Computer Architecture Research" are conference co-chair Janie Irwin (Penn State University) and Bill Dally (Stanford University).

From the Inside, Out
from Page 2

across organizational boundaries. Women who participate in TechLeaders find new ways to connect with their work environment without being assimilated by it. Initially focused on the top level of technical women, TechLeaders will increase its offerings to provide services and communities to technical women at all levels of their careers. The next event, to be held at Google in March 2006, will bring together aspiring technical leaders poised to break through to the next level.

The severe under-representation of 51 percent of the population has serious and far-reaching implications—from economic to humanitarian. The work of the Anita Borg Institute is critical to increasing the impact (both in numbers and influence) of women on technology and increasing the positive effects of technology on the world. The Anita Borg Institute is unique in the way that it helps foster female role models and networks for technical women. Exposing women to the full range of significant interactions among women serves to bolster self-esteem and independence. Our experience shows giving women the opportunity to discuss purely technical issues among themselves helps women to discover their voice.

Developing and leading the technical women leaders from the inside out and of today and tomorrow is not new for the Anita Borg Institute for Women and Technology. Our goal is to support and develop women in the high-tech community by offering programs to help women advance their careers and offer networking opportunities with their peers.

The under-representation of women in CS must be addressed in a multi-faceted way. Technical women leaders are making a difference by forming communities, learning from experts and each other, and sharing effective practices between academic, industry, government, and nonprofit sectors. They are changing and influencing their organizations, and mentoring and being role models to other technical women.

For more information about the Anita Borg Institute's TechLeaders program, see: www.anitaborg.org/leadership.html.

Endnotes:

¹ "Computing, We Have a Problem," Jim Foley, *Computing Research News*, Vol. 17/No. 3, May 2005.

² "Common Ground: A Diverse CS Community Benefits All of Us," Peter A. Freeman and Jan Cuny, *Computing Research News*, Vol. 17/No. 1, January 2005.

³ CRA Taulbee Trends: Female Students & Faculty (<http://www.cra.org/info/taulbee/women.html>)

Cindy Goral is VP of Programs and Operations and *Dianthe Harris* is Office Manager at the Anita Borg Institute for Women and Technology (www.anitaborg.org). ■

Symbolic Increase from Page 1

The National Institute of Standards and Technology (NIST) received \$762 million for FY 2006, an increase of nearly 9 percent over FY 2005. Included in that amount is \$399.9 million for NIST's core research programs (the Scientific and Technical Research and Services account)—an increase of 5.6 percent over FY 2005. NIST's Computer Science and Applied Mathematics program within STRS received \$64.5 million. The conferees agreed to fund the Manufacturing Extension Partnership at \$106 million, a cut of 1.4 percent below FY 2005. The controversial Advanced Technology Program, for which the Senate approved \$140 million and the House zeroed, received a compromise \$80 million.

The conferees also reached agreement on funding levels for the National Oceanic and Atmospheric Administration (NOAA), for which the Senate had approved more than \$1 billion more than the House. The conferees split the difference, approving \$3.95 billion for the agency, an increase of \$30 million over FY 2005 and \$520 million more than the House number. Included in that increase is \$2.83 billion for the agency's Operations, Research and Facilities account, an increase of 1.4 percent over FY 2006.

The science community also saw small gains in the FY 06 *Energy and Water Appropriations* bill (H.R. 2419), which includes funding for science programs at the Department of Energy. DOE's Office of Science saw a slight increase in funding over FY 2005 in the bill, growing 0.9 percent to \$3.63 billion, an increase of \$33 million. The Advanced Scientific Computing Research program within the Office of Science also fared well, garnering a \$5 million increase over FY 2005 to \$237.1 million, \$30 million more than the President's budget. The \$30 million above the request is to be used to "accelerate the efforts to develop a leadership-class supercomputer to meet scientific computation needs," with the further instruction that \$25 million should be dedicated to hardware and \$5 million to competitive research grants.

One other bill of particular interest to the computing research community—the FY 06 *Defense*

Appropriations bill (H.R. 2863)—was not yet complete at press time, but is a source of concern due a proposed cut to IT research. Senate appropriators approved a \$55 million cut to the Defense Department's \$114 million Learning, Reasoning, and Integrated Cognitive Systems account at the Defense Advanced Research Projects Agency (DARPA), largely due to concerns that the program lacked sufficient military application. Because the House funded the program at the President's requested level of \$114 million, it is not clear at press time whether the cut will survive the conference process (check the CRA Computing Research Policy Blog at <http://www.cra.org/govaffairs/blog> for the latest details).

CRA, in arguing against the cut, noted that:

Research in learning, reasoning, and cognitive systems is focused on intelligent interpretations of signals and data, on controlling unmanned vehicles, and on amplifying human effectiveness. Its aim is to reduce U.S. casualties by providing improved command and control, and tactical planning against adversaries, as well as improved training systems. Work in this area includes research responsible for the Command Post of the Future—a software system currently deployed and very widely used in Iraq to coordinate battle plans and integrate multiple intelligence reports, a capability Defense Secretary Donald Rumsfeld cited as the major contributor to victory in the first phase of Operation Iraqi Freedom. It is also critical to the research and development of autonomous, unmanned vehicles that amplify the nation's warfighting capability while reducing the number of U.S. forces in harm's way.

More fundamentally, the community pointed out that the proposed cut runs completely counter to recent concerns of Congress, the President's IT Advisory Committee, and the DOD's own Defense Science Board about the shift of DARPA resources away from fundamental research at universities, especially in information technology. The Cognitive Computing program is one area where DARPA has responded

positively to these concerns.

While the increases for science agencies approved in H.R. 2682 and H.R. 2419 are relatively small—NSF's 3 percent increase would only just keep it ahead of the rate of inflation—in the context of a budget year in which Congress was growing increasingly concerned about ballooning deficit spending in the wake of spiraling costs for Iraq and Afghanistan and a Presidential budget request that had left appropriators almost no "wiggle room" to increase budgets, the slight increases appear to the science advocacy community as a vote of support.

However, even those small increases will not be realized in FY 2006. Unanticipated emergency spending directed to the areas impacted by Hurricanes Katrina and Rita helped galvanize conservative members of Congress already concerned by what they perceived to be out-of-control federal spending. They put increasing pressure on the congressional leadership and the Administration to find areas of the federal budget to cut to pay for the more than \$100 billion that was expected to be spent on Hurricane relief. The Republican Study Committee—which numbers about 100 GOP Members of Congress—even proposed a plan (called "Operation Offset") that identified \$300 billion in "savings" that could be used to offset the predicted spending. Included in the proposed cuts were programs like NSF's Math and Science Program, the NASA Moon/Mars Initiative, and NIST's ATP and MEP programs. While the RSC did not ultimately get the total scope of cuts they were looking for, they helped create momentum for a more politically palatable 1 percent "across-the-board" cut to all federal agencies, saving just over \$50 billion in FY 2006. Across-the-board cuts have the advantage of being politically neutral—they affect all agencies and programs equally in FY 2006.

CRA has the final breakdown on all the relevant science agency numbers on the Computing Research Policy Blog (<http://www.cra.org/govaffairs/blog>). Check the blog for all the latest updates on computing research and the federal budget process. ■

CRA-W Anita Borg Early Career Award
Nomination Deadline
February 15, 2006

For details see:
<http://www.cra.org/Activities/craw/borg>

CRA-W Distributed
Mentor Program

Undergraduate Summer
Research Internships
Application Deadline
February 15, 2006
for Summer 2006

For details see:
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Activities/craw/dmp/](http://www.cra.org/Activities/craw/dmp/)

Professional Opportunities

CRN Advertising Policy

See <http://www.cra.org/main/cra.jobshow.html>

Arizona State University

Department of Computer Science and Engineering
Faculty Positions

The Computer Science and Engineering Department in the Ira A. Fulton School of Engineering at Arizona State University has faculty positions open at all levels and in all areas of Computer Science and Engineering. Fields of particular interest include Embedded Systems hardware and software design, Software Engineering, Information Assurance, Graphics and Visualization, High Performance Computing and Natural Language Processing and Cognitive Informatics. A new School of Computing and Informatics that will house the departments of Computer Science and Engineering and Biomedical Informatics is planned. For these reasons, the department is especially interested in senior candidates with an outstanding record of accomplishments to assume leadership roles.

The expected starting date for these positions is August 16, 2006. Applicants are required to have completed their Ph.D. in computer science, computer engineering, or a closely related field by the appointment date. Junior applicants must show exceptional promise in research and teaching. For senior positions, evidence of research/scholarly activity, teaching and service in computer science and engineering appropriate to the rank being applied are required qualifications. Evidence of scientific, academic and organizational leadership, educational innovation, and demonstrated effectiveness in establishing industry partnerships are also desired for senior positions. The successful candidates will be expected to establish an extramurally funded research program and participate in the interdisciplinary research and teaching initiatives, teach graduate and undergraduate courses and provide service in the Department of Computer Science and Engineering. A background check is required for employment.

ASU is a major research university widely recognized as a rapidly emerging educational institution in the US. The main campus is located in the city of Tempe, in the metropolitan Phoenix area. Recently, the School of Engineering received a \$50 million gift, which is providing funding for scholarships, fellowships, and research programs. Earlier this year, the Computer Science and Engineering (CSE) Department relocated to a brand new building, which provides state-of-the-art research and teaching facilities and plenty of room for growth. This is in line with our president's vision about the New American University, where strong computer science and engineering research forms one of the main driving forces for ASU's push for excellence. Closely paralleling this vision, the research expenditures of CSE more than doubled between years 2000 and 2003.

To complement CSE's leading position in research and teaching, we are in active collaboration with the research centers and consortiums that are the core of State of Arizona's and ASU's investments for their future. The Institute for Computer and Information Science and Engineering (InCISE) is a collaboration of interdisciplinary research units that share research expertise in Computer and Information Science. CSE department is a leading member of the Consortium for Embedded (<http://www.fulton.asu.edu/embedded>), whose members also include Intel and Motorola. The AZBioDesign institute, a hub for biotechnical and biodesign research in central Arizona and the CSE department are working with the local genomics research community that includes the Translational Genomics Research Institute (TGen) and the International Genomics Consortium. Other interdisciplinary research centers that the department closely interacts with includes the Partnership for Research In Spatial Modeling (PRISM), the Center for Ubiquitous Computing (CUBIC), and the Arts, Media, and Engineering Center (AME). These centers invest funds to develop research

facilities and educational laboratories in addition to the extensive funding of research projects and curriculum development projects at ASU. Most of this funding has been supplemented by other funding from State of Arizona and Federal agencies to create new capabilities for students, faculty, and researchers.

Initial closing date for nominations and applications is January 16, 2006, and applications received by this date will receive full consideration. If not filled, applications may be reviewed bi-weekly after this date until the search is closed. Application packages must include a cover letter, detailed curriculum vitae, research and teaching statements, 3 publications for assistant professor and 5 publications for senior level that best characterize your research contributions, and the names, addresses, and phone numbers of four references. Indicate the area to which you are applying. The areas are (1) Embedded Systems, (2) Software Engineering, (3) Information Assurance, (4) Graphics and Visualization, (5) High Performance Computing, (6) Natural Language Processing & Cognitive Informatics, (7) Other (All other CSE related areas).

These packages must be sent by email to: cse.recruiting@asu.edu

or by regular post to:

Chair of Faculty Search Committee
Department of Computer Science & Engineering
Ira A. Fulton School of Engineering
Arizona State University
Tempe, AZ 85287-8809

Please direct any questions to the Chairman of the recruiting committee at cse.recruiting@asu.edu.

ASU is an equal opportunity, affirmative action employer.

Boston University

Department of Computer Science
Assistant Professor

Applications are invited for a tenure-track assistant professorship beginning September 2006 (pending approval). Qualifications required of all applicants include a Ph.D. in Computer Science or related discipline, a strong research record, and a commitment to teaching. All research areas of Computer Science will be considered. Particular attention will be given to candidates pursuing research that involves the building of systems (for example operating systems, distributed systems) and/or the management and analysis of data.

Currently, the department consists of 17 faculty members, and offers programs leading to B.A., M.A., and Ph.D. degrees. In recent years the department had expanded in research strength with current research interests including databases, fault-tolerant computing, image and video computing, network protocols and services, operating systems, performance evaluation, programming languages, real-time systems, security, and theory of computation and algorithms. In addition, our department maintains a close association with other university groups working on various applied computing areas including scientific computing, computer engineering, and bioinformatics.

The department particularly encourages applications from women. Additional information on the department and this search is available from <http://www.cs.bu.edu>.

Qualified applicants should apply by filling out the application form available at:

<http://www2.cs.bu.edu/faculty-app/>

or by sending their resume, a cover letter stating one's areas of specialization, and at least three letters of recommendation to:

Faculty Search Committee
Computer Science Department
111 Cummington Street
Boston University
Boston, MA 02215

Boston University is an Equal Opportunity/Affirmative Action employer.

Bowdoin College

Computer Science Department
Assistant Professor

The Department of Computer Science at Bowdoin College invites applications for a tenure-track position at the rank of Assistant Professor to begin in the Fall of 2006. Ph.D. preferred, ABD considered. The successful candidate will be expected to teach four courses per year including introductory, core, and advanced undergraduate courses. We are looking for candidates in the broad area of Systems. Applicants must possess a commitment to undergraduate education and demonstrate the potential to develop a productive research program.

Bowdoin is a highly ranked, highly selective, coeducational, liberal arts college of 1660 students located two hours north of Boston, along the Maine coast in a community of 24,000. The CS Department is situated in a newly renovated science building, along with the Mathematics and Physics departments, with whom we maintain close and collegial relationships. Departmental lab facilities include Macintosh laboratories for introductory and advanced courses, and a robotics laboratory that houses 14 research grade robots. Further information about Bowdoin and the position is available at:

<http://www.bowdoin.edu> and at <http://academic.bowdoin.edu/computer-science/search> respectively.

Applicants should send a letter of application, curriculum vitae, statements of teaching philosophy and research interests, and arrange for three letters of reference to be sent to:

Eric Chown
Department of Computer Science
8650 College Station
Brunswick, ME 04011
Questions can be directed by email to echown@bowdoin.edu.

Consideration of applications will begin January 15, and continue until the position is filled.

Bowdoin College is committed to equality through affirmative action and is an equal opportunity employer. We encourage inquiries from candidates who will enrich and contribute to the cultural and ethnic diversity of our college.

Bowdoin College does not discriminate on the basis of age, race, creed, color, religion, marital status, gender, sexual orientation, veteran status, national origin, or disability status in employment, or in our education programs.

Cal Poly, San Luis Obispo

Computer Science Department

Department Chair

The Computer Science Department at Cal Poly, San Luis Obispo, California, invites applications for the position of its Chair. The department chair provides leadership in the continued success and advancement of the department and engages in teaching and scholarly activities.

The ideal candidate is an accomplished educator, has relevant research and preferably also industrial experience, and is a proven leader. Starting date is September 18, 2006. Rank and salary commensurate with qualifications and professional experience. Tenure is earned in the instructional portion of the position. A Ph.D. in computer science, software engineering, computer engineering, or a closely related field is required. The Cal Poly Computer Science Department is nationally recognized and offers BS and MS degrees in Computer Science and a BS in Software Engineering. A BS in Computer Engineering is offered jointly with the Electrical Engineering Department.

Cal Poly emphasizes "learn by doing", which involves extensive lab work and projects in support of theoretical knowledge. The available computing facilities for instruction and faculty support are modern and extensive.

To apply, please visit:
www.calpolyjobs.org

and complete a required online faculty application and apply to Requisition #100724.

For full consideration, candidates are required to attach to their online application: (1) resume, (2) cover letter, (3) statement of goals and plans for leadership, teaching and research. Three letters of reference and official transcripts are required for final consideration, and should be mailed to:

Computer Science Recruitment
Committee

Computer Science Department

Cal Poly

San Luis Obispo, CA 93407-0354

Questions can be emailed to: csc-recruit@csc.calpoly.edu. Please include requisition #100724 in all correspondence. For further information about the department and its programs, see www.csc.calpoly.edu. Review of applications will begin Feb. 15, 2006. Applications received after that date may be considered.

Cal Poly is strongly committed to achieving excellence through cultural diversity. The university actively encourages applications and nominations of all qualified individuals. EEO.

California Institute of Technology

Computer Science Department

Instructorship Position

A position is available for an instructorship with a light teaching load, for candidates interested in combining postdoctoral research and teaching. (Appointments are conditional on completion of the Ph.D.) The position may also be suitable for more senior researchers interested in a visiting (e.g. sabbatical) position. Initial appointments are for one year and are renewable for a second. See www.cs.caltech.edu/search/instructorship for application instructions. All materials should be received by January 20, 2006.

Caltech is an Equal-Opportunity/Affirmative-Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.

Carnegie Mellon University

School of Computer Science

Tenure-Track, Research Track and

Teaching Track Positions

The School of Computer Science is conducting targeted searches in Artificial Intelligence, Computing Systems, Foundations of Computer Science, Language Technologies, Learning Sciences and Technology, Robotics and Social Networks, but we also seek to strengthen our faculty by hiring talented individuals from across the range of areas spanned by our school.

To ensure full consideration, applications should be received by no later than January 15, 2006, but will be accepted until all positions are filled.

The School of Computer Science at Carnegie Mellon University spans a wide range of topics in computer science and the application of computers to real-world systems. It houses the Center for Automated Learning and Discovery; Computer Science Department; Human Computer Interaction Institute; Institute for Software Research, International; Language Technologies Institute; and the Robotics Institute, with research and tenure-track faculty in all of these organizations.

Faculty candidates are expected to have a strong interest in research, outstanding academic credentials, and an earned Ph.D. Candidates for tenure-track appointments should also have a strong interest in graduate and undergraduate education. The highly selective undergraduate and graduate programs in the School of Computer Science draw top students from around the world. Carnegie Mellon also has an expanding presence with campuses and teaching opportunities in Silicon Valley, Qatar, and Greece. Further information about the School of Computer Science and its programs may be found on the SCS home page at <http://www.scs.cmu.edu/>.

Each application should include curriculum vitae, statement of research and teaching interests, copies of 1-3 representative papers, and the names and email addresses of three or more individuals who have been asked to provide letters of reference. Applicants should arrange for reference letters to be sent directly to the Faculty Search Committee (hard copy or email), to arrive before January 15, 2006. Letters will not be requested directly by the

(cont'd)

Professional Opportunities

Search Committee. All applications should indicate citizenship and, in the case of non-US citizens, describe current visa status.

Applications and reference letters may be submitted via email (postscript or .pdf format) to:

faculty-search@cs.cmu.edu

or to:

Faculty Search Committee
Attention: Sharon Burks
School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213-3891

The School of Computer Science at Carnegie Mellon University also invites applications for a teaching-track position beginning in the fall term of 2006. This is a career-oriented, renewable appointment that is responsible for, and committed to, developing and delivering excellent first and second year courses in computer science. In particular, we seek candidates with proven records of quality teaching in data structures, algorithms, and introductory programming courses.

Additional information about the position, and information about where to submit applications may be found at <http://www.intro.cmu.edu/position.html>.

Carnegie Mellon is an affirmative action/equal opportunity employer and we invite and encourage applications from women and minorities.

The Citadel

Mathematics and Computer Science Assistant Professor

The Department of Mathematics and Computer Science invites applications for a tenure-track faculty position in computer science at the Assistant Professor level beginning August 2006. Qualifications include an earned Ph. D. in computer science, information systems, or a closely related field and a commitment to excellence in teaching, research, and service. Candidates from all areas of computer science are encouraged to apply, but we are especially interested in applicants with specializations in either computer security or information systems. Salary and benefits will be competitive.

Visit www.mathcs.citadel.edu for a description of The Citadel and the Department of Mathematics and Computer Science and for more information about the application process.

Applications will be reviewed as they are received, beginning 15 December 2005, until the position is filled. Please reference job #F05-43CRA.

Applications from women and minorities are especially encouraged. The Citadel is an affirmative action/equal opportunity employer actively committed to ensuring diversity in all campus employment (006239).

Colby College

Computer Science Department Tenure-Track Associate or Full Professor

Full-time tenure-track position, assoc/full professor, starting September 2006. Review of applications will begin January 3, 2006.

For more information, see: <http://www.cs.colby.edu/jobs/>.

Colgate University

Department of Computer Science Assistant Professor

Colgate University invites applications for a one year visiting position at the rank of Assistant Professor starting in August, 2006. A Ph.D. or equivalent with strong interest in both teaching and research are expected. Applicants are sought in all areas of computer science, including (but not limited to) Graphics, Database, and Robotics. Successful applicants will help staff other department courses and will be encouraged to participate in all-university programs.

Colgate University is a highly competitive liberal arts college situated in upstate New York. The university is committed to promoting excellence in both teaching and research.

Review of applications will begin January 30 and will continue until the position is filled. Resumes and three letters of recommendation should be sent to:

Chris Nevison, Chair
Department of Computer Science
Colgate University

13 Oak Drive
Hamilton, New York 13346

Colgate University is an equal opportunity/affirmative action employer. Developing and sustaining a diverse faculty and staff further the university's educational mission.

Colorado School of Mines

Department of Mathematical and Computer Sciences Assistant/Associate Professor

The Department of Mathematical and Computer Sciences, which offers B.S., M.S., and Ph.D. degrees, invites applications for an anticipated tenure-track faculty position at the Assistant/Associate Professor level, beginning in August 2006. The Colorado School of Mines is located in Golden, Colorado, in the foothills of the Rockies, 13 miles west of Denver and 21 miles south of Boulder.

Applicants with an earned Ph.D. in Computer Science or a closely related field with research interests in compilers/programming languages, computer architecture, computer security, computer graphics, or GIS are encouraged to apply. More information about the department can be obtained from: <http://www.mines.edu/Academic/macs>.

Interested individuals are asked to visit our web page to obtain a complete job announcement, application instructions, and further information:

http://www.is.mines.edu/hr/Faculty_Jobs.shtm.

CSM is an EEO/AA employer and is committed to enhancing the diversity of its campus community. Women, minorities, veterans, and individuals with disabilities are encouraged to apply.

Columbia University

Department of Computer Science Tenure-Track Position

The Department of Computer Science is seeking applicants for a tenure-track position at either the junior or senior level in computational biology. Applicants should have a Ph.D. in a relevant field, and have demonstrated excellence in research and the potential for leadership in the field. Senior applicants should also have demonstrated excellence in teaching and continued strong leadership in research.

Our department of 32 tenure-track faculty and 3 lecturers attracts excellent Ph.D. students, virtually all of whom are fully supported by research grants. Our department maintains close ties with other on-campus research centers that are actively involved in computational biology including the Center for Computational Learning Systems, the Department of Biomedical Informatics, and the Columbia Genome Center. We also have close ties to the nearby research laboratories of AT&T, IBM, Lucent, Siemens, Verizon, Telcordia Technologies, NEC, and other leading industrial companies including the financial companies of Wall Street.

Columbia University is one of the leading research universities in the United States, and New York City is one of the cultural, financial, and communications capitals of the world. Columbia's campus is located in Morningside Heights on the Upper West Side.

Applicants should submit summaries of research and teaching interests, CV, email address, and the names and email addresses of at least three references by filing an online application at:

<http://www.cs.columbia.edu/recruit>.

Review of applications will begin on December 1, 2005.

Columbia University is an Equal Opportunity/Affirmative Action Employer. We encourage applications from women and minorities.

Drexel University

Department of Computer Science College of Engineering Faculty Positions

Drexel University's Department of Computer Science (www.cs.drexel.edu) invites applications for tenure-track faculty positions at all levels. The preferred interest is SOFTWARE ENGINEERING, although strong candidates in other areas will be considered. The department has expanding graduate research and education programs in software engineering, graphics and vision,

information assurance and security, HCI, AI, and scientific computing. The department offers BS, BA, MS, and Ph.D. degrees in computer science as well as BS and MS degrees in software engineering. Drexel is a designated National Security Agency (NSA) Center of Academic Excellence in Information Assurance Education. There are also plans to establish a Center of Information Assurance in the near future. Several of the Computer Science faculty are recipients of NSF CAREER or Young Investigator Awards.

Drexel is a private university founded in 1891 and is the third largest university in the Philadelphia area with over 16,000 students (nearly 4,500 graduate and professional students) and over 1,000 faculty. The University consists of 11 colleges and schools offering 175 degree programs. Drexel is a national pioneer of cooperative education, with formal relationships in place with over 2,700 local, national and multi-national companies. Drexel is located on Philadelphia's "Avenue of Technology" in University City and at the hub of the academic, cultural, and historical resources of one of nation's largest metropolitan regions.

Review of applications begins immediately. To assure consideration materials from applicants should be received by January 15, 2006. Successful applicants must demonstrate potential for research and teaching excellence in the environment of a major research university. To be considered, please send an email to:

cs-search-06@cs.drexel.edu

with a cover letter, CV, brief statements describing your research program and teaching philosophy, and contact information for at least four references. Electronic submissions in PDF format are strongly preferred.

Drexel University is an Affirmative Action/Equal Opportunity Employer.

Duke University

Department of Computer Science Faculty Positions

We invite applications and nominations for two faculty positions in the Department of

Computer Science at Duke University, to start August 2006, in the following areas:

- Artificial intelligence, including computer vision
- Computational biology
- Systems and architecture, including databases and security

One of the positions is tenure-track or tenured at any rank, and the other position is tenure-track at the assistant professor level.

A successful candidate must have a solid disciplinary foundation and demonstrate promise of outstanding scholarship in every respect, including research and teaching. Please refer to www.cs.duke.edu for information about the department.

Applications should be submitted *online* at: www.cs.duke.edu/facsearch.

They should include a curriculum vitae, a list of publications, and copies of the most important publications. A Ph.D. in computer science or related area is required.

Assistant Professor applicants should arrange for three to five letters of reference to be sent preferably via email (facsearch@cs.duke.edu) to the Faculty Search Chair.

Senior candidates should provide the names and contact information of three to five potential references. To guarantee full consideration, applications and letters of reference should be received by January 16, 2006.

Duke University is an affirmative action, equal opportunity employer.

Florida International University

School of Computing and Information Sciences

Tenure-Track Positions

Applications are invited for multiple tenure-track faculty positions at the level of Assistant, Associate or Full Professor. A Ph.D. in computer science or related areas is required. Outstanding candidates are sought in all areas of computer science and engineering. Priority will be given to the junior candidates in the areas of Grid and Scientific Computing and Computer Security. Candidates with an added ability to forge interdisciplinary research collaborations will be favored. Successful

Computer Science at TTI-Chicago Faculty Positions at All Levels



Toyota Technological Institute at Chicago (TTI-C) is a recently established institute of computer science located on the University of Chicago campus. Applications are being accepted for faculty positions at all ranks. In addition to traditional faculty positions, TTI-C is also seeking limited term faculty positions. The Institute is expected to grow to a steady state of 12 traditional faculty (tenure and tenure track) and 8 limited term faculty, by 2010.

TTI-C is supported by the earnings on a fund of \$105 million. \$43 million of this fund belongs to TTI-C as an endowment and \$62 million is owned by TTI in Nagoya, Japan but earmarked for use by TTI-C. We are dedicated to education of doctoral and master's students, and to basic research in fundamental areas of computer science. Faculty members are expected to receive continuing research grants and will have a teaching load of one course per year in a quarter system. TTI-C has close ties with the Computer Science Dept. of the University of Chicago.

Faculty is particularly sought with research programs in artificial intelligence, theoretical computer science, programming languages, verification, scientific computing, and networking.

For all positions we require a Ph.D. Degree or Ph.D. candidacy, with the degree conferred prior to date of hire.

Submit your application electronically at:
<http://www.tti-c.org/apps/faculty.htm>

Toyota Technological Institute at Chicago is an Equal Opportunity Employer

Professional Opportunities

candidates are expected to develop a high-quality funded research program and must be committed to excellence in teaching at both the graduate and the undergraduate levels.

Founded merely 30 years ago, FIU has grown into a comprehensive research university, classified as "Doctoral-Research Extensive" by the Carnegie Foundation. FIU offers nearly 200 baccalaureate, masters and doctoral degree programs in 18 colleges and schools. With over 35,000 students, it is one of the 25 largest universities in the United States. US News & World Report has ranked FIU among the top 100 public universities.

The School of Computing and Information Science (SCIS) is a designated program of excellence at the University and enjoys strong support of the university administration. Its research centers include the High Performance Database Research Center, Center for Advanced Distributed Systems Engineering, Distributed Multimedia Information Systems Laboratory, Bioinformatics Research Group, and Computer Security Research Group. The current annual funding exceeds 2 million dollars. It has attracted substantial funding from NSF, NASA, ARO, AFOSF, BMDO, FEMA, ONR, AFRL, NRL, NOAA, NIH, and other agencies. The School has 23 tenured and tenure track faculty members and excellent computing infrastructure and technology support. It offers B.S., M.S., and Ph.D. degrees in Computing and Information Sciences and B.S. degree in Information Technology. Over the past decade the School's enrollment has doubled to approximately 1,300 undergraduate, 52 Masters, and 63 PhD students.

Applications, including a letter of interest, contact information, curriculum vitae, and the names of at least three references, should be sent to:

Chair of Recruitment Committee
School of Computing and Information Sciences
Florida International University
University Park
Miami, FL 33199

Processing of the applications will begin on January 15, 2006, and will continue until the positions are filled. Further information can be obtained from the School website <http://www.cis.fiu.edu>, or by e-mail to recruit@cis.fiu.edu.

Florida International University is a member of the State University System of Florida and is an equal opportunity/affirmative action/equal access employer.

Florida State University College of Information

Tenure-Track Positions

The Florida State University College of Information (<http://ci.fsu.edu>) invites applications for several tenure-track Assistant Professor positions for Fall 2006.

Applicants must have a doctoral degree in Computer Science, Information Technology, or a related discipline, a demonstrated record of excellence in research, and a commitment to undergraduate teaching.

Successful applicants will have demonstrated research and teaching interests focused on one of the following areas: database systems, Internet information systems, Web technology, information architecture, information visualization, or other related area. Faculty members are expected to serve on University and College committees, and to advise students.

FSU's College of Information is a leader in the education of digital-age information technology specialists and librarians and is widely recognized for its pioneering role in the areas of Web-based education and undergraduate information technology education. The new Bachelors degree in Information Technology has concentrations in Information Systems and Services, and Information Organization and Communication.

Applications should include a letter of application, research and teaching interests, curriculum vitae, and contact information for at least three references. Applications should be sent to:

Melissa Harrell- harrell@ci.fsu.edu.

Questions regarding the position should be directed to:

Prof. John N. Gathegi - 850-644-8104
jgathegi@ci.fsu.edu.

Florida State University is an Affirmative Action/Equal Opportunity Employer.

Georgia Southern University Department of Computer Sciences Assistant Professor

Tenure-track position in Computer Sciences at the Asst. Prof. level to begin Fall 2006. For the full text advertisement, including all qualifications, application instructions, and information about the department and faculty, see:

<http://cit.georgiasouthern.edu/cs/>.
Georgia is an Open Records state.

Georgia Southern University is an AA/EEO institution. Individuals who need reasonable accommodations under the ADA in order to participate in the search process should contact the search chair.

Georgia Tech College of Computing Tenure-Track Positions

Georgia Tech's College of Computing invites applications for tenure-track faculty positions at all levels. We encourage early applications but full consideration will be given to applications that are received by January 31, 2006. Applications from candidates in all areas of computing are welcome. For more information about the online application process, please visit:

<http://www.cc.gatech.edu/recruiting>

This URL will provide a link to the online system with instructions on how to apply. We will only consider applicants who upload their own information or who send their information via email attachments or URLs.

Gonzaga University Department of Computer Science Faculty positions

Two faculty positions in Computer Science at the Assistant Professor, Associate Professor, or Professor levels; full-time, tenure-track, beginning fall 2006.

The newly formed, separate Department of Computer Science in the School of Engineering at Gonzaga University invites applications for two full-time, tenure-track faculty positions in the area of computer science. We seek applicants to teach undergraduate courses in computer science at all levels, and to conduct research related to their interests. One particular need is experience and interest in teaching data communication and networking technologies. We also expect leadership in building and teaching in a new Graduate Program in Information and Computational Science in the Engineering School. This graduate program is intended to be a multi-disciplinary degree, uniting teaching and research across the university, including the Biology, Chemistry, Physics, and Business programs. One of those hired will be considered for the position of Department Chair, and will be expected to help guide the Computer Science program into these exciting new areas.

A Ph.D. in computer science or a related field.

Applications will be reviewed beginning 15 January, 2006, and the application pool will remain open until faculty are hired. Salary is dependent on experience and qualifications. The startup and benefits packages are competitive.

Send a letter of interest, curriculum vitae, and statements of teaching and research interests, plus three letters of reference to:

Dr. Dennis R. Horn, Dean of Engineering
502 E. Boone
Gonzaga University
Spokane, WA 99258-0026
Inquiries to: horn@gonzaga.edu

Gonzaga University, a private Jesuit institution with a strong liberal arts tradition, has an enrollment of 6,500 students. The Department has a computer lab with a network of 60 workstations. In addition, the department has an HP RP2400 Unix server dedicated to academic work. Gonzaga University is an AA/EEO employer and educator committed to diversity. As a Jesuit, Catholic, humanistic University, we are interested in candidates who can contribute to our unique mission. (Visit us at www.gonzaga.edu).

Spokane, Washington is a metropolitan area in eastern Washington and northern Idaho with a population of 500,000. The academic climate is exciting, with Eastern Washington University nearby and Washington State University campuses in Pullman and across the river from the Gonzaga

campus. Research opportunities are also available working with the Pacific Northwest National Laboratories (in areas including bioinformatics) and many small businesses in the area. Spokane is also planning on building a not-for-profit genomic-based medical research institute near the Gonzaga campus, offering multiple opportunities for collaborative research. The city offers one of the finest four-season living environments in the Pacific Northwest, with three ski resorts and more than 60 lakes within a 50-mile radius.

Hobart and William Smith Colleges Department of Mathematics and Computer Science Tenure-Track Position

The Department of Mathematics and Computer Science at Hobart and William Smith Colleges invites applications for a tenure-track faculty position in computer science to begin Fall 2006. Desirable specialties include operating systems and networking, but other areas in computer science will be considered. Mathematicians with demonstrated expertise in computer science will also be considered. Duties include teaching all levels of undergraduate computer science and participating in the Colleges' interdisciplinary general curriculum.

Experience with and/or interest in working in a multicultural environment are highly desirable. A strong commitment to teaching and promise of continued scholarly activity are required. The teaching load is five courses over two semesters. Hobart College for men and William Smith College for women are coordinate, four year, liberal arts colleges committed to teaching and interdisciplinary study. The Colleges have a combined enrollment of 1800 students.

For a complete position description see: <http://campus.hws.edu/ADM/hr/Employment/Faculty.asp>.

To learn more about the department, visit: <http://math.hws.edu/>.

Hobart and William Smith Colleges are committed to attracting and supporting a faculty of women and men that fully represent the racial, ethnic, and cultural diversity of the nation, and actively seek applications from under-represented groups. The Colleges do not discriminate on the basis of race, color, religion, sex, marital status, national origin, age, disability, veteran's status, sexual orientation, or any other protected status.

Applicants should expect to have completed their Ph.D. in Computer Science or related field by Fall 2006. Send resume, statement of research interests and plans, description of teaching philosophy, three letters of recommendation (at least one including comments on teaching), and undergraduate and graduate transcripts (photocopies acceptable) to:

Professor John Vaughn
Box 4085

Hobart and William Smith Colleges
Geneva, NY 14456

E-mail: vaughn@hws.edu

Evaluation of applications begins January 9, 2006 and will continue until the position is filled.

Kansas State University Department of Computing and Information Sciences Faculty Position

The department of Computing and Information Sciences at Kansas State University invites applications for a tenure-track position beginning in Fall 2006. Preference will be given to candidates in the areas of Bioinformatics data mining, data management, and data integration. Applicants must be committed to both teaching and research. Applicants should have a PhD degree in computer science with demonstrated expertise in Bioinformatics; salary will be commensurate with qualifications. Applications must include descriptions of teaching and research interests along with copies of representative publications.

Kansas State University is committed to the growth and excellence of the CIS department. The department offers a stimulating environment for research and teaching, and has several ongoing collaborative projects involving researchers

in different areas of computer science as well as other engineering and science departments. The department has a faculty of nineteen, more than 100 graduate students, 300 undergraduate students, and offers BS, MS, MSE, and PhD degrees. Computing facilities include a large network of servers, workstations and PCs with more than 300 machines and a Beowulf cluster with 100+ processors. The department building has a wireless network and state-of-the-art media equipped classrooms. The department hosts several laboratories for Embedded systems, Software analysis, Robotics, computational engineering and science, and Data-mining. Details of the CIS Department can be found at the URL <http://www.cis.ksu.edu/>. Details about Bioinformatics research at K-State can be found at <http://www.cis.ksu.edu/bioinformatics>.

Please send applications to:

Chair of the Recruiting Committee
Department of Computing and Information Sciences
234 Nichols Hall
Kansas State University
Manhattan, KS 66506

Email: Recruiting@cis.ksu.edu

Review of applications will commence November 1 and continue until the position is filled.

Kansas State University is an Equal Opportunity Employer and actively seeks diversity among its employees. Paid for by Kansas State University.

Kansas State University Department of Computing and Information Sciences Faculty Position

The department of Computing and Information Sciences at Kansas State University invites applications for a tenure-track position beginning in Fall 2006 from candidates working in the area of security. Preference will be given to candidates who will compliment the existing areas of strengths of the department which include static analysis and verification of systems, language-based security, distributed systems, model-driven computing, sensor networks and multi-agent systems. Applicants must be committed to both teaching and research. Applicants should have a PhD degree in computer science with demonstrated expertise in security; salary will be commensurate with qualifications. Applications must include descriptions of teaching and research interests along with copies of representative publications.

Kansas State University is committed to the growth and excellence of the CIS department. The department offers a stimulating environment for research and teaching, and has several ongoing collaborative projects involving researchers in different areas of computer science as well as other engineering and science departments. The department has a faculty of nineteen, more than 100 graduate students, and 300 undergraduate students and offers BS, MS, MSE, and PhD degrees. Computing facilities include a large network of servers, workstations and PCs with more than 300 machines and a Beowulf cluster with 100+ processors. The department building has a wireless network and state-of-the-art media-equipped classrooms. The department hosts several laboratories for embedded systems, software analysis, robotics, computational engineering and science, and data-mining. Details of the CIS Department can be found at the URL <http://www.cis.ksu.edu/>.

Please send applications to:

Chair of the Recruiting Committee
Department of Computing and Information Sciences
234 Nichols Hall
Kansas State University
Manhattan, KS 66506

Email: Recruiting@cis.ksu.edu

Review of applications will commence November 1 and continue until the position is filled.

Kansas State University is an Equal Opportunity Employer and actively seeks diversity among its employees. Paid for by Kansas State University.

Professional Opportunities

Knox College

Department of Computer Science
Tenure-Track Position

The Department of Computer Science invites applications for an anticipated tenure-track position at the Assistant Professor level to begin Sept. 1, 2006. We seek candidates with the potential for excellence in teaching and research in a liberal arts institution. While all areas of specialization will be considered the following areas that complement existing departmental expertise are particularly welcome: database management systems, graphics and visualization, computer architecture. A Master's degree in Computer Science with industry and teaching experience is required, a PhD is preferred.

The Department offers a major and a minor in Computer Science. Departmental computing facilities include student Linux laboratories, a student independent research laboratory, a dual-processor Intel Xeon server running Red Hat Linux, a departmental Windows and Macintosh laboratory and access to the College's Windows and Macintosh laboratories. The campus is completely wireless.

Knox is a highly selective independent liberal arts college with students from 48 states and 41 countries. The college is consistently ranked as one of the "Best Values" among national liberal arts colleges in the U.S. News & World Report survey of quality and price in higher education. Small classes, a strong advising system, and an emphasis on independent research foster close student/faculty interaction. Please visit us at www.knox.edu for more information about the College, and at cs.knox.edu for information on the department and our facilities.

To apply, please send a curriculum vitae, a letter detailing your research interests and teaching philosophy, copies of your graduate transcripts and three current letters of recommendation one of which must address your teaching to:

John F. Dooley, Associate Professor and Chair
Department of Computer Science
Box K-138
Knox College
2 East South Street
Galesburg, IL 61401-4999
E-mail: cs-search@knox.edu

Review of applications will begin as soon as they are complete and will continue until the position is filled.

Knox College is an affirmative action, equal opportunity employer. In keeping with its 168-year commitment to equal rights, the College particularly welcomes applications from individuals in under-represented groups.

Lafayette College

Department of Computer Science
Assistant Professor

The Computer Science Department invites applications for a tenure-track assistant-professor position starting in the Fall of 2006.

For more details about the position, please see:

<http://www.cs.lafayette.edu/search>

Lafayette College is a very selective, private liberal-arts college located in the Lehigh Valley of Pennsylvania. The college is 50 miles north of Philadelphia and 75 miles west of New York City.

The college is an Equal Employment Opportunity employer and encourages applications from women and minorities.

Marshall University

College of Information Technology and Engineering (CITE)

Assistant or Associate Professor

A Computer Science faculty position is available at the Assistant or Associate Professor level in the College of Information Technology and Engineering (CITE) at Marshall University, Huntington, WV. See: <http://www.marshall.edu/human-resources/jobs>

recruiting bulletin 11/11/2005, Search No. 11476 for information regarding the job and the application process.

Interested candidates can also visit

<http://www.marshall.edu/cite> for information about the college.

McGill University

School of Computer Science
Assistant Professor

The School of Computer Science at McGill University wishes to invite applications for a tenure-track position at the assistant professor level, to begin June 1st 2006. Applications for more senior positions are also welcome. We are searching for a computational biologist who is interested in either of the following areas: bioinformatics database and system design, bioinformatics algorithms and data structures, machine learning approaches in bioinformatics, and computational modeling of biomolecules.

Bioinformatics at McGill University has greatly expanded over the past five years and candidates would benefit from the world class medical school of biomedical research programs. The McGill Center for Bioinformatics is comprised of approximately 15 members who are involved in large scale projects that include (but are not limited to) areas such as genomics, functional genomics, proteomics, protein-protein interaction, structural biology, clinical informatics, phylogeny, genome evolution, neuroscience, medical imaging and cellular simulation.

Hardcopy applications, including a curriculum vitae, a list of publications with copies of one or two sample reprints, a research proposal as well as a teaching proposal, and the names and e-mail addresses of three references should be sent to:

Head, Search Committee
School of Computer Science
McGill University
McConnell Engineering Building, #318
3480 University Street
Montreal, QC H3A 2A7

The review process will begin immediately and the search will continue until the positions are filled. Information about our department can be found on our web page, <http://www.cs.mcgill.ca>. Information regarding the McGill Center for Bioinformatics may be found at: <http://www.mcb.mcgill.ca>.

We encourage all qualified candidates to apply; however, Canadians and permanent residents of Canada will be given priority.

McGill University is committed to equity in employment.

McGill University

School of Computer Science
Assistant Professor

The School of Computer Science at McGill University wishes to invite applications for two tenure-track positions at the assistant professor level, to begin June 1st 2006. One position is in the systems area, including, but not limited to, networks, software testing, architecture, real-time systems, mobile computing, and distributed computing. The other position is the general area of computer graphics, including human-computer interaction and visualization.

Hardcopy application, including a curriculum vitae, a list of publications with copies of one or two sample reprints, a research proposal as well as a teaching proposal, and the names and E-mail addresses of three references should be sent to:

Head, Search Committee
School of Computer Science
McGill University
McConnell Engineering Building, #318
3480 University Street
Montreal, QC H3A 2A7

The review process will start immediately and the search will continue until the positions are filled. Further information about our department and the status of the job search can be found on our web page: <http://www.cs.mcgill.ca>.

We encourage all qualified candidates to apply; however, Canadians and permanent residents of Canada will be given priority.

McGill University is committed to equity in employment.

McMaster University

Department of Computing and Software
Departmental Chair

McMaster University's Faculty of Engineering is seeking a dynamic leader for its Department of Computing and Software. This is a tenured position at the Professor's level. We are looking for an accomplished scholar who can provide academic and administrative leadership to the Department. Candidates

should have a Ph.D. in software engineering or computer science, or related fields, excellent research and teaching record, record of strong external research funding, demonstrated administrative abilities, and registration or commitment to registration as a professional engineer. Excellent communication skills and demonstrated outreach to the community and profession are required.

The Department has a complement of 28 faculty members. It offers undergraduate programs in Software Engineering and in Computer Science. It is offering one of the first accredited undergraduate software engineering programs in Canada. At the graduate level, the Department offers Master of Applied Science, Master of Engineering and Ph.D. programs in Software Engineering, and Master of Science and Ph.D. programs in Computer Science. The Department currently has 225 undergraduate and 100 graduate students. It has three Canada Research Chairs, and research initiatives include the Software Quality Research Laboratory, the Advanced Optimization Laboratory and the Algorithms Research Group. The Department is also spearheading the new School of Computational Engineering and Science at McMaster University.

The Faculty of Engineering is one of the most research intensive Faculties of Engineering in Canada. It has a complement of 136 faculty members in seven Departments.

All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority. McMaster is strongly committed to employment equity within its community, and to recruiting a diverse faculty and staff. The University encourages applications from all qualified candidates, including women, members of visible minorities, Aboriginal persons, members of sexual minorities, and persons with disabilities.

Applications and nominations should be forwarded:

Dr. M. A. Elbestawi
Dean, Faculty of Engineering
McMaster University
1280 Main Street West, JHE 261
Hamilton, Ontario, Canada L8S 4L7
For more information visit our website:
<http://www.cas.mcmaster.ca/cas/>.

Applications will be considered until the position is filled, and must be received no later than February 28, 2006.

Michigan State University

Department of Computer Science and Engineering

Tenure-Stream AY Faculty Positions

The Department of Computer Science and Engineering (CSE) at Michigan State University invites applications for tenure-stream AY faculty positions. The CSE Department seeks exceptional candidates with established records of excellence in High-Assurance Computing, Security, Computational Biology, Bioinformatics or related areas. Candidates at all ranks will be considered. Joint appointment with other appropriate units on campus is possible. Appointments start in August 2006.

The CSE Department conducts leading-edge research in many areas, with particular strength in software engineering and formal methods; computer systems and networking and pattern recognition and machine intelligence. CSE is the lead Department of the multi-disciplinary Consortium for CyberSecurity and an active member of the Quantitative Biology and Modeling Initiative and the Cognitive Science Program at Michigan State University (MSU). The Department presently has 25 faculty members and administers BS, MS and PhD programs. MSU enjoys a large, park-like campus with many outlying research facilities and natural areas. The greater Lansing area has approximately 450,000 residents. The local communities have excellent school systems and place a high value on education. The University is proactive in exploring opportunities for the employment of spouses, both inside and outside the University.

Candidates should submit a cover letter, curriculum vitae, the names of three references, and statements of research and teaching interests to the address below (email preferred). Applications will be reviewed on a continuing basis until all positions are filled. For full consideration, applications should be

received before January 15, 2006.

Faculty Search Committee
Department of Computer Science and Engineering
3115 Engineering Building
Michigan State University
East Lansing, Michigan 48824-1226
Email: search@cse.msu.edu

Michigan State University is an Equal Opportunity/Affirmative Action Institution and persons with disabilities have the right to request and receive reasonable accommodations.

New York University Information Systems Group

Tenure-Track and
Visiting Faculty Positions

The Information Systems Group at the Stern School of Business, New York University has a multidisciplinary faculty, composed of computer scientists, economists, and behavioral scientists. The IS Group has a vibrant PhD program, with a history of successful placements at top schools.

Tenure-Track faculty: Applications are solicited for full-time and tenure-track positions at all levels for next year. We are especially interested in candidates whose research interests complement those of our existing faculty, such as data mining, economics of information systems, and sociological studies of information systems.

Visiting faculty: Applications are solicited for full-time visiting positions at all levels. Visiting faculty teach at the undergraduate and/or MBA levels and are active in research in the department. Candidates must present evidence of strong teaching ability and research performance.

A candidate for any of the above positions should have a PhD or be assured of its completion within one year, and is expected to be a productive researcher and effective teacher at the undergraduate, MBA and PhD levels.

Send application materials by January 15, 2006. Please send a curriculum vitae, statement of research interests, letters of recommendation, and up to five papers to: ioms@stern.nyu.edu, or send to: IOMS-IS Recruiting Committee
Department of Information, Operations & Management Sciences
Leonard N. Stern School of Business
New York University
4 West 4th Street, Room 8-190
New York, NY 10012-1126
Website: <http://www.stern.nyu.edu/ioms/>.
NYU is an Equal Opportunity/Affirmative Action Employer.

The Ohio State University

Computer Networking and
Communications

Eminent Scholar

The Ohio State University invites applications for the position of Ohio Eminent Scholar in Computer Networking and Communications. Awarded by the Ohio Board of Regents, this position comes with a tenured full professorship in the Department of Computer Science and Engineering and the Department of Electrical and Computer Engineering, in addition to an attractive compensation package. Only 17 Ohio Eminent Scholar positions have been awarded in the history of the Ohio State University prior to this award.

The successful candidate is expected to have made outstanding scholarly contributions to networking and communications. Specialty areas of particular interest to us include (but are not limited to) wireless networking and mobile computing, internet distributed architectures, optical networks, network security and dependability, communication theory, coding theory, wireless communications, resource allocation, and multiple access techniques. Both departments have vibrant research programs in networking and communications. The candidate will have the opportunity not only to collaborate with other faculty, but also with persons from places in Central Ohio such as ITEC-Ohio and OSC (Ohio Supercomputer Center), with whom the departments have had good relationships over the years.

Interested persons are invited to send a resume, by e-mail to: fsearch+OES@cse.ohio-state.edu

Professional Opportunities

or by mail to:
 Prof. David Lee, Chair
 CSE/ECE Ohio Eminent Scholar Search Committee
 Department of Computer Science and Engineering
 The Ohio State University
 2015 Neil Ave
 Columbus, OH 43210-1277
 Review of applications will begin immediately and continue until the position is filled. For additional information please see <http://www.cse.ohio-state.edu>.
 The Ohio State University is an Equal Opportunity/Affirmative Action Employer.

The Ohio State University Department of Computer Science and Engineering Tenure-Track Positions

The Department of Computer Science and Engineering (CSE) invites applications for multiple tenure-track positions at all ranks. The department has considerable strengths in artificial intelligence, graphics, networking, software engineering, and systems. One of the open positions is targeted to hiring in the area of experimental systems. Other positions are open to all areas of the field, including but not limited to human-computer interaction, theoretical computer science, ubiquitous/embedded computing, and the current strength areas of the department.

Women, minorities, or individuals with disabilities are especially encouraged to apply.

Applicants should hold or be completing a Ph.D. in CSE or a closely related field, and have a commitment to or demonstrated record in excellent research and high-quality teaching.

The department maintains and encourages active collaborations with Ohio Supercomputer Center, Advanced Computing Center for the Arts and Design, Center for Cognitive Science, Department of Biomedical Informatics, and many other units in the university.

To apply, it is preferable that a curriculum vita (including names and addresses of at least three references) and a statement of research and

teaching interests, be submitted by e-mail to: [fsearch+apps\[at\]cse.ohio-state.edu](mailto:fsearch+apps[at]cse.ohio-state.edu)
 If necessary the above may be mailed to:
 Chair, Faculty Search Committee
 Department of Computer Science and Engineering
 The Ohio State University
 2015 Neil Avenue, DL395
 Columbus, OH 43210-1277
 Review of applications will begin in January and will continue until the positions are filled. For additional information please see <http://www.cse.ohio-state.edu>.
 The Ohio State University is an Equal Opportunity/Affirmative Action Employer.

Oregon State University School of Electrical Engineering and Computer Science Research Associate Positions

One or more Research Associate positions in the Machine Learning, Computer Graphics, and Computer Vision groups starting January 2006. Required qualifications include a Ph.D. in computer science or related field.; strong mathematical background; experience with at least 3 of the following: (a) knowledge representation frameworks (logical and probabilistic), (b) reasoning methods (logical and probabilistic), (c) experimental machine learning research, (d) planning and reasoning algorithms, (e) virtual environments for training, (f) computer vision for object recognition and tracking, (g) augmented reality; excellent written and spoken communication skills; excellent programming and software engineering skills; excitement about computer science research; and the ability to manage graduate and undergraduate students working on research projects

Position is full-time, 12 month, fixed term with reappointment at the discretion of the hiring official. For full consideration, applications must be received by 11/15/05. Send resume, letter of interest, evidence of 2 relevant publications and 3 professional references w/address, phone # to:

Research Associate Search
 1148 Kelly Engineering Center
 Corvallis, OR 97331-5501

For full position announcement see: <http://oregonstate.edu/jobs>, other inquires contact Thomas G. Dieterich (tgdc@cs.orst.edu). OSU is an AA/EOE.

Penn State Harrisburg School of Science, Engineering and Technology

Tenure-Track Faculty Position
 Penn State Harrisburg's School of Science, Engineering and Technology invites applications for a tenure-track Assistant Professor position in Computer Science for Fall Semester 2006. Experience and research interests in software engineering/software design, compilers, principles of programming languages, or computer architecture are preferred. Individuals with other areas of research interest may also be considered.

Candidates will be evaluated on teaching and research potential. Ph.D. in Computer Science is preferred. Faculty are expected to teach courses for the B.S. and M.S. degrees in Computer Science, pursue scholarly research and publication, contribute to curriculum development, participate in University/professional service activities, advise undergraduate and graduate students, and serve on graduate level degree committees. For information on Penn State Harrisburg, please visit our websites at <http://www.hbg.psu.edu> or <http://cs.hbg.psu.edu>.

Submit a current curriculum vitae, a list of three personal references, a research statement, and a teaching statement that includes a list of preferred courses to teach to

Computer Science Search Committee
 c/o Mrs. Dorothy J. Guy, Director of Human Resources
 Penn State Harrisburg
 P.O. Box CRA, 777 W. Harrisburg Pike
 Middletown, PA 17057-4898

Review of applications will begin immediately and continue until the position is filled.

Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.

The Pennsylvania State University, University Park Campus School of Information Sciences and Technology

Tenure-Track Position
 The School of Information Sciences and Technology (IST) invites applications for a tenure-track position at all ranks in all areas of Information Security and Assurance. Candidates who conduct interdisciplinary research with a broad information-technology-people view of security (i.e., security of information, security of cyber infrastructures, and security of people) are especially welcomed to apply. The recruiting emphases are in the following areas: 1) forensics, 2) malware/spyware/adware and software security, 3) identity theft and financial crimes, 4) privacy, 5) information warfare, 6) trustworthy systems and 7) usable security and privacy.

A principal requirement is demonstrated excellence in research and potential for excellence in instruction. Successful applicants will be expected to establish a quality research program and teach both graduate and undergraduate courses in cyber security.

Penn State is a major research university and is ranked second in the nation in industry-sponsored research among universities. IST is a top i-school in the nation with a strong sponsored research program (our active research grants are now about \$8.0M and growing each year). We are in the design phase of a new multidisciplinary major, "Security and Information Analysis". Coupling this with rapidly expanding, world-class funded security research and a successful NSA-sponsored Center for Academic Excellence in Information Assurance Education, IST is positioned to be a world leader in Security and Information Analysis scholarship. Our baccalaureate program has approximately 800 students and our PhD program has approximately 65 students. Women and members of underrepresented groups are encouraged to apply. To learn more about IST go to ist.psu.edu. To learn more about Penn State and State College, PA, please go to www.psu.edu.

Screening of candidates will begin 31 December, 2005 and will continue until the

position is filled. Your application should include a cover letter, full curriculum vitae, a one page statement of professional interests and teaching ability, and a separate listing of three references (reference letters will be requested under separate cover) that includes their names, addresses, phone/e-mail addresses.

We strongly encourage you to submit your application on-line through the school's faculty search Web page: recruit.ist.psu.edu.

Alternatively, applications can be submitted through postal mail to:

Chairperson
 IST Faculty Search Committee
 School of Information Sciences and Technology
 325B IST Building
 The Pennsylvania State University
 University Park, PA 16802

Inquiries can be sent by e-mail to recruit@ist.psu.edu.

Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

Princeton University Computer Science Department Assistant Professor

The Department of computer science at Princeton University invites applications for Assistant Professor, tenure-track positions. We are entertaining applications in all areas of Computer Science, with particular emphasis on systems, computational biology and computer vision. Candidates for more senior ranks with exceptional records of research will also be considered. Applicants must demonstrate superior research and scholarship potential as well as teaching ability. A Ph.D or equivalent in Computer Science or related areas is required. Successful candidates at all ranks are expected to pursue an active research program and to contribute significantly to the teaching programs of the department.

Applicants should include a resume and the names of at least three people who can comment on the applicant's professional qualifications. Applications should be sent to:

Chair, Search Committee
 Department of Computer Science
 Princeton University
 35 Olden Street
 Princeton, NJ 08544-2087
 E-mail: search@cs.princeton.edu

The Committee will begin to consider applications in January 2006.

Princeton University is an Equal Opportunity/Affirmative Action Employer.

Purdue University Department of Computer Science Tenure-Track Positions

The Department of Computer Science at Purdue University invites applications for tenure-track positions beginning August 2006. A number of positions are available at the Assistant Professor level; senior positions will be considered for highly qualified applicants. Applications from outstanding candidates in all areas of computer science will be considered. Of particular interest are candidates with a research record in the department's growth areas, including software engineering, operating systems, and human-computer interaction and in the multidisciplinary areas of bioinformatics, data mining and data analysis, scientific visualization, and high performance computing. The multidisciplinary positions are part of a College of Science-wide hiring effort and applicants should address the multidisciplinary contributions of their work in their research statements.

The Department of Computer Science offers a stimulating and nurturing academic environment. Forty-one faculty members direct research programs in analysis of algorithms, bioinformatics, databases, distributed and parallel computing, graphics and visualization, information security, networking, programming languages and compilers, scientific computing, and software engineering. The department has implemented a strategic plan for future growth supported by the higher administration and will move into a new building in summer 2006. Further information about the department and its strategic plan are available at <http://www.cs.purdue.edu>. Information about the multidisciplinary hiring effort and its targeted areas can be found at <http://www.science.purdue.edu/COALESCE/>.

(cont'd)

Why not change the world?

Department Chair

Department of Computer Science

Rensselaer Polytechnic Institute invites nominations and applications for Chair of the Department of Computer Science. The Department has 26 full-time faculty and approximately 475 undergraduate and 90 Ph.D. students. It has a multi-million dollar research program emphasizing robotics, parallel and distributed computing, networking, data engineering, computer vision, scientific and high performance computation, software methodology, and theory. The Department has excellent computational facilities.

Rensselaer Polytechnic Institute, the oldest engineering school in the country, is consistently ranked among the top engineering programs in the nation. In addition to an outstanding research program, Rensselaer is a leader in interactive learning and studio-format instruction. There is a strong emphasis on interdisciplinary research, with many close collaborations between the faculty in Computer Science; Electrical, Computer, and Systems Engineering; Mathematical Sciences; and Biology departments.

Rensselaer's president and senior administration have a dynamic plan to double the research program, with particular emphasis on Information Technology and Biotechnology. The Computer Science Department has reached \$3 million in research expenditures, and is playing a pivotal role in this endeavor. The Department is currently searching to fill two clusters of three chaired professorships in computing related areas and the strategic plan for the School of Science calls for the number of tenure/tenure track faculty in Computer Science to grow to 31 over the next 5 years. In addition to the recent completion of the Stanley Landgraf Center for Computer Vision, Graphics and Robotics, Rensselaer is currently constructing a state-of-the-art machine room designed to house a 3000 node heterogeneous computing cluster. Because of this expected growth, the successful candidate must have a long range vision to recruit outstanding junior and senior faculty, to enrich and expand the graduate and undergraduate programs, to stimulate interdisciplinary research and educational activity, and to promote the Department to the technical community at large.

Candidates must have an earned doctorate in computer science or a related field, and a strong record of research and academic accomplishments. In addition, the candidate must demonstrate strong technical leadership, management, and interpersonal skills.

The Institute web site www.rpi.edu and the Computer Science Department web site www.cs.rpi.edu contain additional information. We welcome candidates who will bring diverse cultural, ethnic and national and international perspectives to Rensselaer's work and campus communities. Send curriculum vitae and a list of suitable references to:

Professor Boleslaw Szymanski
 Computer Science Department
 Rensselaer Polytechnic Institute
 110 Eighth Street
 Troy, New York 12180-3590
 Phone: 518-276-8326
 Fax: 518-276-4033
 Email: szymansk@cs.rpi.edu

Applications for this position can also be submitted at <http://www.cs.rpi.edu/application/>

Ideally, the Department Chair position should be filled in time for the start of the Fall 2006 semester. However the selection process will continue until a suitable candidate is found.

Rensselaer Polytechnic Institute is an Affirmative Action/Equal Opportunity Employer.



Professional Opportunities

All applicants should hold a PhD in Computer Science, or a closely related discipline, be committed to excellence in teaching, and have demonstrated strong potential for excellence in research. Salary and benefits are highly competitive. Applicants are strongly encouraged to apply electronically by sending their curriculum vitae, research and teaching statements, and names and contact information of at least three references in PDF to fac-search@cs.purdue.edu.

Hard copy applications can be sent to:

Faculty Search Chair
Department of Computer Science
250 N. University Street
Purdue University
West Lafayette, IN 47907-2066

Applicants matching one search may be considered in other relevant searches when appropriate. Review of applications will begin on October 1, 2005, and will continue until the positions are filled.

Purdue University is an Equal Opportunity/Equal Access/Affirmative Action employer and is committed to building a diverse faculty of excellence.

Purdue University School of Electrical and Computer Engineering Faculty Positions

The School of Electrical and Computer Engineering at Purdue University invites applications for faculty positions across the breadth of computer science and computer engineering at all levels. Computing is one of the major strategic thrusts of the Information, Communications, and Perception Technologies (ICPT) signature area within the College of Engineering.

Research in this area spans computer architectures, systems software, security and machine learning, software engineering and languages, and a rich set of applications. The Computer Engineering Area of the school has eighteen faculty members who have active research programs in areas including the following: artificial intelligence, cluster computing, compilers, computational linguistics, computer architecture, computer graphics, dependable computing, design automation, distributed systems, energy efficient systems, haptics, high performance computing, human computer interaction, information security, intrusion tolerance, IT for education, machine learning, machine vision, micro architecture, multimedia systems, multimodal user interfaces, network computing, networking, operating systems, pedagogical agent learning systems, performance evaluation, sensor networks, software engineering, spoken language processing, systems architecture, and visualization. We will consider outstanding applicants in the strategic ICPT thrust area of computing.

Minimal qualifications include a PhD in computer science/engineering or a related field and a significant demonstrated research record commensurate with the level of position applied for.

Applications for positions in Computer Engineering should be submitted through the engineering signature area webpages:

<https://engineering.purdue.edu/Engr/Cluster/Applications>

Please be sure to check the box "Information, Communications, and Perception Technologies" under the section "Committees of Interest" at the very bottom of the application form. Candidates are encouraged to also send an email to:

compengr@ecn.purdue.edu with subject "Faculty Application", indicating that they have submitted an application to the ICPT area with interest in a Computer Engineering faculty position.

Applications will be reviewed on 9 January 2006 and will continue until positions are filled.

Purdue University is an equal access, equal opportunity, affirmative action employer.

Purdue University Department of Statistics Faculty Positions

The Department of Statistics at Purdue University invites applications for tenure-track positions beginning August 2006. A number of positions are available at the Assistant Professor level; senior positions will be considered for highly qualified applicants. Applications from outstanding candidates

in all areas of statistics will be considered. Of particular interest are candidates with a research record in the areas of financial statistics/probability, statistical computing or spatial statistics. The statistical computing and spatial statistics areas are part of a College of Science-wide hiring effort and applicants should address the multidisciplinary contributions of their work in their research statements.

The Department of Statistics offers a stimulating and nurturing academic environment. Thirty tenured and tenure-track faculty members direct research programs in a broad range of areas. Further information about the department is available at <http://www.stat.purdue.edu>.

Information about the College of Science multidisciplinary hiring effort and its targeted areas can be found at <http://www.science.purdue.edu/COALESCE>

All applicants should hold a PhD in Statistics, or a related field, be committed to excellence in teaching, and have demonstrated strong potential for excellence in research. Salary and benefits are highly competitive. Applicants are strongly encouraged to apply electronically by sending their curriculum vitae, research and teaching statements, and names and contact information of at least three references in PDF to:

facsearch@stat.purdue.edu.

Hard copy applications can be sent to:

Faculty Search Chair
Department of Statistics
150 N. University Street
Purdue University
West Lafayette, IN 47907-2067

Applicants for assistant professor positions are asked to have the three references send letters to the email address above or the hard copy mailing address. Applicants matching one search may be considered in other relevant searches when appropriate. Review of applications will begin on December 1, 2005, and will continue until the positions are filled.

Purdue University is an Equal Opportunity/Equal Access/Affirmative Action employer and is committed to building a diverse faculty of excellence.

Reed College Department of Mathematics Visiting Assistant Professor

The Reed College Mathematics Department invites applications for a one-year visiting position, rank open, to begin in Fall, 2006. Preference will be given to candidates in computer science or statistics.

Reed is a distinguished liberal arts college with 1200 students that offers a demanding academic program to bright and dedicated undergraduates. Applicants should be committed to excellence in teaching, and are expected to have a Ph.D. in computer science, statistics, or mathematics by the start of the 2006-2007 academic year. Faculty members teach five semester courses per year (usually two course preparations per semester) and supervise senior theses (required of all students). For further information about the department, see <http://academic.reed.edu/math/>.

Applicants should submit a curriculum vitae and a statement of teaching and research interests, and arrange to have three letters of recommendation sent to:

Jerry Shurman, Chair
Mathematics Search Committee
Mathematics Department
Reed College
3203 S.E. Woodstock Blvd.
Portland, Oregon 97202-8199

Applications will be accepted until the position is filled, but they should be received by February 1, 2006, to guarantee full consideration.

An Equal Opportunity Employer, Reed values diversity and encourages applications from underrepresented groups.

Southern Polytechnic State University Department of Information Technology Faculty Positions

The Department of Information Technology at Southern Polytechnic State University (SPSU) invites applications for one tenure-track position at Assistant Professor level and one full-time position at lecturer level. While all areas of Information Technology expertise

Why not change the world?

Assistant Professor

Department of Computer Science

The Department of Computer Science at Rensselaer Polytechnic Institute invites applications for one or more tenure-track positions at the Assistant Professor level. Exceptional candidates at all professorial levels will be considered. While all research areas of computer science will be considered, the Department has special interest in security, cryptography, data science (mining, handling and visualization) and bioinformatics. Applicants should hold a PhD in Computer Science or in a closely allied field, have substantial research accomplishments for the professorial level sought, and demonstrate a strong commitment to teaching.

Applicants should submit a vita with a list of publications, a statement describing current and planned research, and a statement describing teaching philosophy via <http://www.cs.rpi.edu/application/>. Applicants should also arrange to have at least three letters of recommendation submitted through the same web site. The search will continue until the positions are filled, but to ensure full consideration, all application materials including letters should be submitted by February 1, 2006.

RPI's strategic plan, the Rensselaer Plan (see www.rpi.edu/web/President/Plan/index.html), calls for significantly expanded research activities in two primary focal areas: biotechnology and information technology (IT). The CS Department is anticipated to be a significant beneficiary of RPI's focus in the IT area. The CS Department currently has 26 full-time faculty members of international renown (e.g. fellows of professional societies, editors of journals, five active NSF CAREER Awards); it has excellent computing facilities that support a vigorous growing research program; and it has a modern curriculum supporting BS, MS and PhD degree programs.

Faculty are strongly encouraged to participate in collaborative research across disciplines, especially those critical to biotechnology and information technology. We welcome candidates who will bring diverse intellectual, geographical, gender and ethnic perspectives to Rensselaer's work and campus communities.

Rensselaer Polytechnic Institute is an Affirmative Action/Equal Opportunity Employer.



Rensselaer

will be considered, the department has special interest in computer networks, information security, and Web technologies.

The Assistant Professor Position: The Assistant Professor will teach undergraduate and graduate courses in Information Technology, conduct research in IT-related areas, and advise students. The position is a 9-month, tenure-track appointment, and the salary is competitive and commensurate with qualifications and experience. Applicants must hold a PhD in Information Technology, Computer Science, or in a closely related field, have substantial research potential, and demonstrate a strong commitment to excellence in teaching, scholarship, and professional service.

The Full-Time Lecturer Position: The Lecturer will teach undergraduate courses in Information Technology, engage in service activities, and advise students. The position is a 9-month, renewable appointment, and the salary is competitive and commensurate with qualifications and experience. Applicants should hold a Master Degree in Information Technology, Computer Science, or in a closely related field, and demonstrate a strong commitment to excellence in teaching and professional service.

Screening of applications begins February 1, 2006, and continues until the positions are filled. Both positions will start in mid-August, 2006. A complete application consists of a cover letter, a curriculum vitae, a brief statement of teaching philosophy and research interests (the research interest statement is optional for lecturer applicants), and a copy of graduate transcripts. Applicants should also provide a list of at least three professional references with contact information. Please send your application to the following address:

Dr. Andy Ju An Wang, Chair
Department of Information Technology
School of Computing and Software Engineering
Southern Polytechnic State University
1100 South Marietta Parkway
Marietta, GA 30060
Southern Polytechnic State University is an equal opportunity/affirmative action employer.

SRI International, Menlo Park, CA Artificial Intelligence Center Computer Scientist, Machine Learning

Position Summary The Artificial Intelligence Center at SRI International announces the availability of a position for a computer scientist. We are seeking highly qualified computer scientists to participate in the development and application of machine learning techniques within a large program to develop an intelligent software assistant. The assignment will involve a mix of research-related activities and implementation, and interaction with many of the world's leading researchers in machine learning. For more information about the AI Center, please visit us at www.ai.sri.com

Experience and Education Requirements The candidate will have a broad understanding of state-of-the-art machine learning algorithms, and of related implementation techniques. This experience must include strengths in Bayesian approaches; experience in text-based learning is especially desirable. In addition to a strong background in machine learning, we are looking for candidates with commercial software development or other relevant system-level experience. In particular, skill and experience with object-oriented design and XML is required. Ph.D. in Computer Science or related discipline preferred, or MS with 1-3 years of practical experience.

Please apply online at: <http://sri.hrdpt.com/cgi-bin/c/highlightjob.cgi?jobID=2678>

If you have any questions or if you are having problems applying online, please contact: Daniel Swartz at swartz@ai.sri.com

State University of New York, College at Plattsburgh Computer Science Department Lecturer

The Department of Computer Science at the State University of New York College at Plattsburgh invites applications for a renewable full-time lecturer position in Information Technology for the Fall 2006 semester.

Professional Opportunities

SUNY Plattsburgh is located in the Champlain Valley of upstate New York. Lake Champlain offers great water sports activities; the Adirondacks, 20 miles away, offer skiing, hiking, fishing, rock climbing and ice climbing; Burlington and Montreal are an hour away.

Qualifications: Applicants must have earned at least a Master's degree in Computer Science or a related field. The candidate should have experience applying Information Technology and an interest in developing an undergraduate curriculum in IT.

Responsibilities include: teaching, management of departmental computer environment and developing internship positions. Preferred areas of expertise are networking, computer security and distributed systems.

Applications received by January 31, 2005 will be given priority consideration. Original transcripts will be required prior to the start of employment. To apply, send a letter of application, a complete curriculum vitae, statement of teaching interests, and the names of three references to:

Chair, Search Committee (PJ# 4651-CRN)
c/o Human Resource Services
SUNY Plattsburgh
101 Broad Street
Plattsburgh, NY 12901-2681
Email: hr.apply@plattsburgh.edu
SUNY College at Plattsburgh is an equal opportunity employer committed to excellence through diversity.

Swarthmore College

Computer Science Department
Instructor or Assistant Professor

Applications are invited for a leave replacement position at the Instructor or Assistant Professor rank to begin in August 2006. Depending on applicant interest and administrative approval, this could be a multi-year but not tenure-track appointment.

Swarthmore College is a small, selective, liberal arts college located in a suburb of Philadelphia. The Computer Science Department offers majors and minors in computer science at the undergraduate level. Applicants should have teaching experience and be comfortable teaching a wide range of courses at the introductory and intermediate level. A Ph.D. in computer science and fluency in at least two of C, Scheme, and Java is desired. We will consider all sub-areas of CS.

A resume and three letters of reference should be sent to:

Charles Kelemen
500 College Avenue
Swarthmore, PA 19081

At least two of the letters should speak to the candidate's teaching ability.

Swarthmore College is an equal opportunity employer. Applications from women and members of minority groups are encouraged. We expect to begin interviewing in late January 2006. Applications will be accepted until the position is filled.

Texas State University, San Marcos

Department of Computer Science
Tenure-Track Positions

Applications are invited for two tenure-track assistant professor positions to begin Fall 2006. Job duties include effective teaching at the graduate and undergraduate levels, conducting a research program that results in refereed publications and external funding, supervising student research, and serving effectively at the department, college, university, and professional levels.

Applicants must have an earned Ph.D. in Computer Science or Computer Engineering, or an equivalent degree. A commitment to and potential for excellence in teaching, research, external funding and service and effective oral and written communication are essential. One position requires a specialization in software engineering. For the other position, preference will be given to candidates in the areas of forensics, security, multimedia or operating systems. A separate application is required for each position.

For information about the department and university and for application procedures, see www.cs.txstate.edu/recruitment.

Texas State is an Equal Opportunity, Affirmative Action employer committed to increasing the number of women and minorities in faculty and administrative positions. Texas State is a member of the Texas State University System.

Union College Department of Computer Science *Assistant Professor*

The Department of Computer Science at Union College invites applications for a tenure-track assistant professor position to begin September, 2006. A Ph.D. in computer science is required. Preferred areas include graphics, robotics, parallel computing, and interdisciplinary fields, and an ability to teach basic courses on computer architecture and operating systems. We will also consider outstanding candidates in other areas.

Union College is a small, highly selective liberal arts and engineering college in New York State's Capital Region, three hours from New York City and Boston. It emphasizes close collaborations between faculty and students and a campus-wide Converging Technology initiative that promotes interdisciplinary activities. Further information about the department can be found at <http://cs.union.edu>.

Applicants should submit a letter of application, CV, statements of teaching and research goals, and arrange to have three letters of reference sent separately. Electronic submissions are preferred and should be sent to: bermane@union.edu.

Mailed applications and recommendations should be sent to:

Professor Valerie Barr
Department of Computer Science
Union College
Schenectady, NY, 12308

Applications received by February 1, 2006, will receive full consideration.

Union College is an equal opportunity employer and strongly committed to increasing the diversity of its workforce.

The University of Alabama

Department of Computer Science
Tenure-Track Position

The University of Alabama, Department of Computer Science, invites applications for a tenure-track faculty position at the Assistant Professor level to begin August 16, 2006.

Candidates must have an earned Ph.D. in computer science or a related field, with an evidence of research potential, commitment to teaching, and willingness to participate in the Department's graduate and undergraduate programs. Applicants from all areas of computer science will be considered. Those who specialize in software engineering, database systems, operating systems, or networking are particularly encouraged to apply.

The Department of Computer Science currently has 20 faculty (14 tenured/tenure-track), over 200 undergraduates in an ABET accredited B.S. degree, and over 50 M.S. and Ph.D. students. Areas of current research emphasis include algorithms, database systems, human-computer interface, networking, operating systems, programming languages, and software engineering. The University of Alabama is a charter member of Internet2.

Outstanding applicants should send a curriculum vitae and the names and addresses of at least three references to:

Faculty Search Committee
Department of Computer Science
Box 870290
The University of Alabama
Tuscaloosa, AL 35487-0290

For additional information, please visit <http://cs.ua.edu> or contact the Search Committee at faculty.search@cs.ua.edu.

Review of applications will begin December 1, 2005 and will continue until the position is filled.

The University of Alabama is an equal opportunity/affirmative action employer. Women and minorities are particularly encouraged to apply.

University at Buffalo, The State University of New York

Computer Science and Engineering
Department

Faculty Positions

The CSE department solicits excellent applicants at all levels. At the senior level (associate or full professor) we are especially interested in candidates in the area of high-performance computing and its application in the life sciences. At the junior level, we especially solicit candidates in systems and applied areas.

CSE faculty are affiliated with the world-class Center for Computational Research, the Center of Excellence in Document Analysis and Recognition, the Center of Excellence in Bioinformatics, the NSA Center of Excellence for Information Assurance, the Center for Cognitive Science, and the National Center for Geographic Information and Analysis. The faculty includes AAAI, ACM, and IEEE Fellows and several award winners.

Junior candidates are expected to have a Ph.D. in Computer Science/Engineering or related field by August 2006, with a good publication record and potential for developing an externally funded research program. Senior candidates are expected to have an excellent track record of publication and funded research as well as international stature commensurate with rank.

All applications should be submitted by December 31, 2005 at our recruiting website: recruit.cse.buffalo.edu.

A cover letter, curriculum vitae, and the names and email addresses of at least three references is required; applicants for the senior position should have five references. The email address for correspondence is cse-search@cse.buffalo.edu.

The CSE department website is located at www.cse.buffalo.edu.

The University at Buffalo is an Equal Opportunity Employer/Recruiter.

University of California, Los Angeles

Department of Computer Science
Tenure-Track Positions

The Department of Computer Science in the Henry Samueli School of Engineering and Applied Science at the University of California, Los Angeles, invites applications for tenure-track positions in all areas of Computer Science and Computer Engineering. Applications are also encouraged from distinguished candidates at senior levels.

Quality is our key criterion for applicant selection. Applicants should have a strong commitment to both research and teaching and an outstanding record of research for their level. We seek applicants in any mainstream area of Computer Science and Computer Engineering, but we particularly welcome those with a strength in emerging technologies related to computer science (such as bio-computing, nano architectures and systems, and WWW technologies), embedded systems, and operating systems.

To apply, please visit <http://www.cs.ucla.edu/recruit>.

Faculty applications received by January 31 will be given full consideration.

The University of California is an Equal Opportunity/Affirmative Action Employer.

University of California, Riverside

Bourns College of Engineering
Multiple Faculty Positions

The Bourns College of Engineering at the University of California, Riverside invites applications for tenure-track or tenured faculty positions at the Assistant, Associate, or Professor Rank. The College is seeking highly qualified faculty members in the areas of Bioengineering, Chemical Engineering, Computer Engineering, Computer Science, Electrical Engineering, Environmental Engineering, Material Science and Engineering, and Mechanical Engineering. Specific areas of interest are provided at www.engr.ucr.edu/facultysearch/. People with vigorous research programs and demonstrated graduate student productivity are strongly encouraged to apply for the senior rank. Applicants should have a doctoral degree in the relevant engineering discipline or a related field; those with a bachelor's degree in engineering are preferred. Salary level will be competitive and commensurate with qualifications and experience.

We anticipate that the successful applicant will complement the highly motivated and entrepreneurial spirit of the College faculty, contributing meaningfully to the success of future teaching, research, and service accomplishments. Faculty research activities are essential to the success of our program and as such new members are expected to initiate and sustain strong sponsored research and graduate training programs.

The Bourns College of Engineering is proud of its faculty's accomplishments and rapid growth. Over the past five years, the numbers of faculty and undergraduates have nearly doubled; graduate student enrollment has increased six-fold, and research expenditures have more than tripled. The College currently has 70 faculty members, 1400 undergraduates, more than 300 graduate students, and more than \$30 million in annual research expenditures. The College is home to five interdisciplinary and multidisciplinary research centers: The Center for Environmental Research and Technology (CE-CERT), the Center for Research in Intelligent Systems (CRIS), the Center for Nanoscale Science and Engineering (CNSE), the Center for Bioengineering, and the Network Embedded Computing Systems Institute (NECSI).

The College recently opened its Engineering II building as well as the Bourns Hall Clean Room facility (part of CNSE), and is expecting the opening of two additional buildings, Material Science and Engineering, and Engineering III in 2008 and 2011, respectively.

The search committee will begin reviewing applications on January 1, 2006, and will continue to receive applications until the positions are filled. To apply please register through the weblink at:

www.engr.ucr.edu/facultysearch/
and submit the requested PDF or Word files (cover letter, curriculum vitae, statements of research and teaching interests, and reference contact information). For inquiries and questions, please contact us at facultysearch@engr.ucr.edu.

The University of California, Riverside is an Equal Opportunity/Affirmative Action Employer.

University of Colorado Department of Computer Science *Faculty Position*

The Department of Computer Science at the University of Colorado invites applications for a tenure-track faculty position at the Assistant Professor rank. We welcome applicants in all CS research areas including both core and inter-disciplinary areas. We seek candidates with a strong commitment both to research and to teaching. Exceptionally qualified candidates may be considered for positions of higher rank. Information about the department can be found on the web at <http://www.cs.colorado.edu/>. Please send a letter of application, complete curriculum vitae, statement of research and teaching interests, and the names of four references to:

Search Committee Chair
c/o Patricia Warrick
Department of Computer Science
430 UCB
University of Colorado at Boulder
Boulder CO, 80309
Electronic submissions and inquiries should be directed to:

warrick@cs.colorado.edu
Applications received by January 31, 2006 will be given priority consideration.

The University of Colorado at Boulder is committed to diversity and equality in education and employment. We encourage applications from women and minority candidates.

University of Delaware Computer and Information Sciences *Tenure-Track Position*

Applications are invited for a tenure-track Assistant Professor position to begin Fall 2006. Of primary interest are candidates whose research is in systems (e.g., software engineering; programming language implementation, environments, and runtime systems; high performance computing; distributed systems; operating systems). Experimental validation should be an important component of the candidate's research. Applicants should hold a Ph.D. or its equivalent, and should be committed to excellence in research and teaching. The normal teaching load is three courses per year.

The Department has 18 tenure-track and 3 research faculty members, with a substantial portion of our 120 graduate students pursuing the Ph.D. We have significant external funding, including NSF Career and DOE Young Investigator Awards,

(cont'd)

Professional Opportunities

and a \$3.2M grant in Communications and Networks that is part of the Army Research Lab's Collaborative Technology Alliance. A major UDel biotechnology initiative (<http://www.dbi.udel.edu>) offers opportunities for collaborative research in bioinformatics. The University of Delaware is centrally located between Philadelphia and Baltimore, with major government and industrial labs nearby. Considerable information about the Department is available at <http://www.cis.udel.edu>.

To apply, please mail a curriculum vitae to:
Dr. E. L. Lloyd
Chair of the Faculty Search Committee
Department of Computer and Information Sciences
University of Delaware
Newark, DE 19716

In addition, candidates should have three confidential letters of reference sent directly to either the above address or csfesch@cis.udel.edu. The committee will begin reviewing applications on February 1, 2006 and will give preference to applications submitted by that date. The curriculum vitae and letters of reference will be shared with departmental faculty. The University of Delaware is an Equal Opportunity Employer which encourages applications from Minority Group Members and Women.

University of Denver Department of Computer Science Tenure-Track Position

We invite applications for a tenure-track faculty position (all levels) to begin Fall 2006. The minimum requirements are a Ph.D. in CS or a related area and demonstrated ability in research and teaching. The department is particularly interested in a candidate who can teach and direct research in the following areas: entertainment computing, interactive simulations and games; bioinformatics; trustworthy computing (networks, security, privacy, fault tolerance); spatial data; and software engineering. Outstanding candidates in other areas of Computer Science will be considered as well. The successful candidate is expected to participate fully in the department through an active research program, excellent teaching, and dedicated service.

The Computer Science Department is part of the new School of Engineering and Computer Science (SECS) at the University of Denver. SECS promotes research and teaching collaborations among different disciplines. Faculty in Computer Science have unique opportunities for cross-disciplinary collaboration. For further information, visit the SECS website at <http://www.du.edu/secs/>.

Our current faculty's research interests include algorithms, computational geometry, computer security, database systems, distributed systems and algorithms, graphics, multimedia systems, performance modeling, software engineering, and symbolic computation and computer algebra. We offer bachelor's, master's and doctoral degrees.

The University of Denver is a medium-size (10,000 students) private university. Class sizes are small, the teaching load is moderate and the salary is competitive. The University is located in an attractive residential area 5 miles from downtown Denver. Denver, with its metro area population of 2.3 million, is consistently ranked as one of the country's top five most pleasant places to live. Many of the country's best ski areas, mountain bike trails, and the 14,000 foot peaks of the Colorado Rockies are only one or two hours away.

The University of Denver is committed to enhancing the diversity of its faculty and staff and encourages applications particularly from women, minorities and the disabled.

Application screening will begin immediately and continue until the position is filled. Applicants should submit a curriculum vitae, a statement of teaching and research interests and have at least 3 reference letters sent online to:

<http://www.du.edu/hr/employment/jobs.html>

The contact address/email is:
Computer Science Department
School of Engineering and Computer Science
University of Denver
2360 S. Gaylord Street
Denver, CO 80208-2453
cs-search@cs.du.edu
EEO/AA/D/V

University of Florida Department of Computer and Information Science and Engineering Assistant/Associate/Full Professor

The Department of Computer and Information Science and Engineering at the University of Florida invites applications for tenure-track positions at any rank beginning January 2006 or thereafter. Exceptionally strong candidates in any area of computer science or computer engineering are encouraged to apply.

All applicants should hold a PhD in Computer Science, Computer Engineering, or a closely related discipline, and should be committed to excellence in teaching and research. Salary and support are competitive and depend on background and experience.

The CISE Department currently has 34 tenure-track faculty and a student body of 321 graduate and 723 undergraduate students. The Department encompasses a wide range of research areas including high performance computing, database systems, computer vision, computer graphics, simulation, computer networks and security, and distributed and real-time systems.

Applicants should submit online, a curriculum vitae and a statement of career objectives to:

<http://www.cise.ufl.edu/employment/faculty/>

Please make reference to positions 00008379, 00009832 and 00008093. If you are unable to apply using this URL, please use <http://www.cise.ufl.edu/cgi-bin/cgiwrap/gnats/www-send-pr> to report the problem. Applicants are requested to have three letters of recommendation submitted electronically as explained on the aforementioned website. Applications will not be reviewed until all recommendation letters have been received.

The search committee will begin reviewing applications on December 31, 2005 and will continue to accept applications until the positions are filled.

The University of Florida is an equal opportunity institution and women and minorities are encouraged to apply. For more information about the department and positions, please visit <http://www.cise.ufl.edu>.

The University of Iowa Computer Science Department Tenure-Track Faculty Position (Fall 2006)

The Computer Science Department seeks applications for one assistant professor position commencing August 2006.

The Department and the College of Liberal Arts and Sciences are strongly committed to diversity and maintain ties to programs on campus that provide a supportive environment for women and minorities, such as the Women in Science and Engineering program. The strategic plans of the University, College, and Department reflect this commitment to diversity.

Applications from all areas of computer science are invited. Areas of departmental expertise and/or expected growth include algorithms, AI, databases/data mining, graphics/HCI, high-performance computing, informatics, security, systems, and verification. The Department is committed to growth in research in emerging and interdisciplinary areas of computer science, especially in connection with our highly regarded programs in the health sciences.

Candidates must hold a PhD in computer science or closely related discipline. Applications received by January 15, 2006, are assured of full consideration. Applications should contain a CV, research, and teaching statements. Please have three letters of recommendation sent directly to us.

Apply via the web at:
<http://www.cs.uiowa.edu/hiring>.
by email to: cs_hiring@cs.uiowa.edu

or by U.S. mail to:
Faculty Search Committee
Computer Science Department
The University of Iowa
14 MacLean Hall
Iowa City, IA 52242-1419

The University of Iowa is an affirmative action/equal opportunity employer.

University of Manitoba Department of Computer Science Tenure-Track Position

Applications are invited for one full-time tenure-track position, at the Assistant Professor level in the Department of Computer Science at the University of Manitoba, commencing July 1, 2006, or as soon as possible thereafter.

Minimum qualifications are a PhD in Computer Science or equivalent, with a strong record in both teaching and research as described in the following paragraph. A Faculty of Science startup research grant will be awarded to all newly appointed faculty members.

We are primarily seeking expertise in the areas of Bioinformatics, Software Engineering, and Data Security and Cryptography. We will also consider candidates in the areas of databases, human-computer interaction, operating systems, and algorithms, as well as outstanding candidates in other areas of Computer Science. Duties will include undergraduate and graduate teaching and supervision, research, and service-related activities.

Applications, a curriculum vitae and the names of three referees must be received by the closing date, January 31, 2006. Further information may be obtained at:
<http://www.umanitoba.ca/employment/academic>

University of Maryland University College Office of Security Studies Lab Security Studies Lab Director

University of Maryland University College is the innovative, global university whose mission is to provide high-quality educational opportunities to adult, part-time students worldwide. As part of its mission, the Security Studies Lab develops advanced teaching tools such as remote access laboratories, network testbeds, and emerging technologies and methods of providing asynchronous online learning globally.

We have an opening for a Security Studies Lab Director who is responsible for the coordination and management of a variety of activities involved in the implementation of a university wide academic computing strategy in support of security programs. Requires Ph.D. or equivalent terminal degree (degree in a technical, engineering or information technology field preferred); a minimum of three years of college level teaching experience and a minimum of five years of professional work experience in the Information Technology field. Qualified candidates will have excellent oral and written communication skills. Salary is commensurate with experience.

To apply, submit a cover letter, resume, and 3 professional references to:

Candidate Search – Security Studies Lab Director (code: ISSA1436).

All materials should be sent electronically to:

hrjobs@umuc.edu.

UMUC offers an excellent benefits package including tuition remission, 25 days of leave, as well as a range of insurance options. For more detailed information about UMUC, this opportunity and our benefits, please visit us at www.umuc.edu/hr.

University of Miami Department of Computer Science New Faculty Positions

The Department of Computer Science at the University of Miami (<http://www.cs.miami.edu>) invites applications for a tenure-track assistant professor and a visiting (rank open) faculty position starting August, 2006.

Outstanding candidates in core areas of Computer Science as well as in emerging frontiers of computational biology, medicine, marine and atmospheric sciences will be considered. Ph.D is required; post-doctoral experience is desirable.

Applicants should send a letter of application, curriculum vitae, and three letters of reference to:
search@cs.miami.edu.

or:
Search Committee
Department of Computer Science

University of Miami
P.O. Box 248154
Coral Gables, FL 33124

University of Miami is an affirmative action, equal opportunity employer.

The University of Mississippi Department of Computer and Information Science Tenure-Track Positions

The Department of Computer and Information Science at the University of Mississippi invites applications for two tenure-track positions at the Assistant Professor level.

Requirements include having a PhD or equivalent completed by August 15, 2006, in computer science or a closely related field. The applicant must have the ability to teach both graduate and undergraduate students, conduct research in major areas of computer and information science, and supervise M.S. and Ph.D. students.

The BSCS program has been accredited since 1990. The University of Mississippi is located in the historic town of Oxford in the wooded hills of north Mississippi, an hour's drive from Memphis. Oxford has a wonderful small-town atmosphere with excellent schools.

Review of applications will begin immediately and will continue until the position is filled or an adequate application pool is reached. The applicant must provide evidence of research potential, effective communication skills, and a broad background in computing.

Applicants must apply at:
<http://jobs.olemiss.edu>.

Please supply a cover letter, vitae, research and teaching statements, and a list of four references (including name, address, telephone, and email).

The applicant should have letters of recommendation sent to:
search@cs.olemiss.edu

or:

Dr. Stephen V. Rice, Chair of Search Committee
Computer and Information Science
201 Weir Hall
University, MS 38677

The University of Mississippi is an EEO/AA/Title IX/Section 504/ADA/ADEA employer.

University of Nebraska - Lincoln Department of Computer Science and Engineering Tenure-Track Position

The Department of Computer Science and Engineering at the University of Nebraska - Lincoln invites applications for a tenure-track faculty position at the rank of Assistant Professor, to begin in August, 2006.

We are seeking a faculty member who can establish a strong research and teaching program, and who complements our existing strengths in the target area of Software Engineering.

To apply, go to:
<http://employment.unl.edu>.

and complete the Faculty/Administrative application. Applicants should then email a curriculum vitae and statements of research and teaching interests, and arrange for at least three reference letters to be emailed directly, to the CSE Faculty Search Committee at:
search@cse.unl.edu.

Review of applications will begin on December 1st, 2005, and will continue until the position has been filled. The position is contingent on the availability of funds.

The official advertisement can be viewed at: <http://cse.unl.edu/search>.

The University of Nebraska is committed to a pluralistic campus community through affirmative action and equal opportunity and is responsive to the needs of dual-career couples. We assure reasonable accommodation under the Americans with Disabilities Act; contact Sally Hawkins at (402) 472-2401 for assistance.

University of North Carolina at Chapel Hill Department of Computer Science and Biomedical Research Imaging Center Tenure-Track

Applications are invited for a tenure-track faculty member at the level of Assistant Professor or Associate Professor without tenure

Professional Opportunities

appointment in the Department of Computer Science and the UNC Biomedical Research Imaging Center to begin on or after July 1, 2006.

Applicants are expected to have a doctorate in computer science, electrical engineering, biomedical engineering, or medical physics, and a research emphasis in image analysis.

Further information and details on the application procedure for this search is available at:

<http://www.cs.unc.edu>.

Minorities and women are encouraged to apply.

The University of North Carolina is an equal opportunity, affirmative action employer.

University of North Carolina, Charlotte

Department of Computer Science
Tenure-Track Position

The Department of Computer Science at the University of North Carolina at Charlotte invites applications for a tenure-track faculty position at any rank.

Our University values diversity and is seeking exceptional scholars who can contribute to the diversity and excellence of our academic community through research, teaching, and service.

The successful candidate should have an earned doctorate in computer science or a related area, a strong record of externally funded research (commensurate with rank), and a commitment to teaching as an essential component of scholarship. We are especially interested in candidates whose research complements our current strengths in intelligent & interactive systems; or visualization, analysis & management of data; or who can enhance our new teaching and research programs in computer game design and/or educational technologies.

The first application deadline is January 31, 2006. If not filled, applications will be reviewed weekly thereafter until the search is closed.

Please see

<http://www.cs.uncc.edu> to apply.

University of South Florida Computer Science and Engineering *Tenure-Track Positions*

Applications are invited for several tenure-track faculty positions in the Department of Computer Science and Engineering. We are particularly interested in candidates with expertise in systems including databases, distributed systems, and secure systems. We are also interested in candidates with expertise in bioinformatics to expand our collaborations with H. Lee Moffitt Cancer Center and Research Institute.

Rank and salary will be commensurate with qualifications and experience. Screening of applications will begin on Dec 15, 2005, and will continue until the positions are filled. Candidates must have completed, or be near completion of a Ph.D. degree in computer science, computer engineering, or a related area.

The Department of Computer Science and Engineering (<http://www.cse.usf.edu>) has 26 faculty members and offers B.S., M.S., and Ph.D. degrees. The graduate program serves some 125 students. The research program is well supported (\$3M) by federal and state agencies including DoD, DoE, DoT, NIH, NSF, as well as industry. A strong partnership for inter-disciplinary research exists with the other research centers at the university as well as the H. Lee Moffitt Cancer Center and Research Institute. The university has a M.S. and a Ph.D. program in Biomedical Engineering and a multidisciplinary M.S. program in Bioinformatics and Computational Biology.

The application package should include a cover letter, curriculum vitae, brief statement outlining research and teaching goals, and the names and contact information of at least three references. These application materials are to be submitted online at:

<http://www.cse.usf.edu/faculty-search/>.

For questions please send email to faculty-search@cse.usf.edu.

The University of South Florida with about 43,000 students is among the 20 largest schools in the nation. The Carnegie Foundation ranks USF for its research in the top national classification. It is one of the nation's fastest growing research universities

in terms of federal research and development expenditures, according to the National Science Foundation's 2003 annual Survey of Research and Development Expenditures at Universities and Colleges. It is located in the Tampa Bay metropolitan area with a population of about 2.5 million. USF is among the top 35 universities in the country for educating Hispanics, according to the 2002 Hispanic Outlook for Higher Education.

According to Florida law, applications and meetings regarding them are open to the public. The University of South Florida is an Equal Opportunity/Equal Access/Affirmative Action Institution. Women and minorities are strongly encouraged to apply. Dual career couples with questions about opportunities are encouraged to contact the department chair.

The University of Texas at Dallas Eric Jonsson School of Engineering and Computer Science *Faculty Position*

The Department of Computer Science of The University of Texas at Dallas invites applications for a tenure-track faculty position in Bioinformatics and Computational Biology and related areas at the associate or full professor level, starting Spring, Summer or Fall 2006. Candidates must have a Ph.D. degree in Computer Science, Software Engineering, Computer Engineering or Bioinformatics-related fields. Candidates should have a strong record of research, teaching, and external funding. This position may involve a joint appointment with one of the departments in the School of Natural Sciences and Mathematics, and preference will be given to candidates who can collaborate with researchers at the U. T. Southwestern Medical Center at Dallas. A significant start-up package has been budgeted for this position.

The Department offers Ph.D. degrees in Computer Science and Software Engineering; M.S. degrees in Computer Science with emphases (tracks) on Networks and Telecommunications, traditional Computer Science, Intelligent Systems, and a major in Software Engineering; and B.S. degrees in Computer Science and Software Engineering (the first in the State of Texas). In addition, the department is part of Ph.D. and master's programs in two interdisciplinary fields, Computer Engineering and Telecommunications Engineering, whose faculty consists of members from Computer Science and Electrical Engineering. Currently the department has a total of 43 tenure-track faculty and 11 senior lecturers. In addition to individual faculty workstations, the department has many computer/research laboratories, equipped with around 300 high performance workstations and high-end PCs. The Academic Computer Center supports both UNIX based workstations and PCs as well as high-speed dial-in access to campus computing facilities.

The University is located in the most attractive suburbs of the Dallas metropolitan area. There are over 900 high-tech companies within five miles of the campus, including Texas Instruments, Nortel Networks, Alcatel, Ericsson, Hewlett-Packard, Nokia, Fujitsu, MCI, EDS, and Perot Systems. Almost all the country's leading telecommunications companies have major research and development facilities in the area. Opportunities for joint university-industry research projects are excellent. The Jonsson School has experienced very rapid growth in recent years and will become a top-ranked engineering school within five years. Based in large part on a five-year, \$300 million initiative involving the State of Texas, the University of Texas System and Texas Instruments, the School is strengthening and expanding its programs (including Bioengineering) by recruiting outstanding faculty and Ph.D. students, increasing funded research, and establishing new programs (see www.utdallas.edu/welcome/html).

For more information, contact Dr. D. T. Huynh, Department Head, at 972-883-2169, or send email to cs-search@utdallas.edu, or view the Internet Web page at <http://www.utdallas.edu/dept/cs>. The search committee will begin evaluating applications as soon as possible and will continue until the positions are filled.

Applicants should mail their resume with a list of at least five academic or professional

references as soon as possible to:

Academic Search #775,

The University of Texas at Dallas

P. O. Box 830688, M/S AD 23

Richardson, TX 75083-0688

Indication of sex and ethnicity for affirmative action statistical purposes is requested as part of the application but not required.

UTD is an AA/EEO Employer and strongly encourages applications from candidates who would enhance the diversity of the university's faculty.

University of Toronto Department of Computer Science *Assistant Professor*

The Department of Computer Science and the Faculty of Medicine at the University of Toronto invite applications for an appointment at the rank of Assistant Professor in the area of computational biology or bioinformatics to begin July 1, 2006.

The Department of Computer Science and the Faculty of Medicine have very strong ties, with joint programs, joint appointments in computational biology, and a number of existing collaborations between researchers in computer science and various researchers and labs in the Faculty of Medicine. The Department of Computer Science is an international leader in research and teaching, with recognized strength in most areas of computer science. The Faculty of Medicine aims to provide international leadership in health research and education and leads a dynamic and exciting health research community, one of the largest in North America.

The successful candidate will have the opportunity to facilitate further interaction with other units and take advantage of the strengths in computational biology and bioinformatics (and computational, medical and biological sciences more broadly) that exist across the University. To facilitate collaborative interactions, the candidate will be offered space in the Department of Computer Science and in the computational biology group in the Terrence Donnelly Centre for Cellular & Biomolecular Research, a new and cutting-edge interdisciplinary research center at the University of Toronto. The Donnelly CCBP will house 35 Principal Investigators working on functional genomics and bioinformatics, developmental and stem cell biology, bioengineering, and molecular imaging. It is a new, architecturally spectacular building in the heart of Toronto's research district.

Candidates should have (or be about to receive) a Ph.D. in computer science, or in another relevant field with a research focus on computational methods applied to biological problems and data. The candidate must demonstrate an ability to pursue innovative research, and a strong commitment to graduate and undergraduate teaching. Salaries are competitive with our North American peers and will be determined according to the successful applicants' experience and qualifications. Toronto is a vibrant and cosmopolitan city, one of the most desirable in the world in which to work and live. It is also a major centre for advanced computer, medical and biological technologies; and the university has strong interactions with these industries. Applicants should include curriculum vitae, a list of publications, and the names and addresses of at least three references, and may additionally include a research and teaching statement and other supporting documentation.

Please send by email (text or PDF only) to: faculty-search@cs.toronto.edu

or by post to:

Faculty Recruiting Committee Chair

Department of Computer Science

University of Toronto

10 King's College Road, Rm. 3303

Toronto, Ontario M5S 3G4 Canada

The review of applications will commence on January 10, 2006 and will continue until the position is filled. Applications should be received by March 1, 2006 for full consideration during the current recruitment cycle.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from visible minority group members, women,

Aboriginal persons, persons with disabilities, members of sexual minority groups, and others who may contribute to the further diversification of ideas. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

University of Toronto Department of Computer Science *Assistant Professor*

The Department of Computer Science invites applications for two positions at the rank of Assistant Professor in the areas of database systems, software engineering and computer systems (including but not limited to operating systems, networks, computer networks, distributed systems, programming languages, and computer architecture) to begin July 1, 2006. Appointments at more senior ranks may be considered in exceptional cases.

The Department of Computer Science is an international leader in research and teaching, with recognized strength in most areas of computer science, and strong interdisciplinary ties to other units within the University. Candidates should have (or be about to receive) a Ph.D. in computer science or a related field and must demonstrate an ability to pursue innovative research at the highest level and a strong commitment to graduate and undergraduate teaching.

Salaries are competitive with our North American peers and will be determined according to the successful applicants' experience and qualifications.

Toronto is a vibrant and cosmopolitan city, one of the most desirable in the world in which to work and live. It is also a major centre for advanced computer technologies and the department has strong interaction with the computer industry.

Applicants should reference DCS 05-R-1 and include a curriculum vitae, a list of publications, and the names and addresses of at least three references, and may additionally include a research and teaching statement and other supporting documentation. Please send by email (text or PDF only) to:

faculty-search@cs.toronto.edu

or by post to:

Faculty Recruiting Committee Chair

Department of Computer Science

University of Toronto

10 King's College Road, Rm. 3303

Toronto, Ontario M5S 3G4 Canada

The review of applications will commence on January 9, 2006 and will continue until the position is filled. Applications should be received by March 1, 2006 for full consideration during the current recruitment cycle.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from visible minority group members, women, Aboriginal persons, persons with disabilities, members of sexual minority groups, and others who may contribute to the further diversification of ideas. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

University of Toronto Department of Computer Science *Assistant Professor*

The Department of Computer and Mathematical Sciences, University of Toronto at Scarborough, invites applications for an appointment at the rank of Associate Professor with tenure in the area of Systems, to begin July 1, 2006.

This can include fields such as operating systems, networks, distributed systems, database systems, programming languages, software engineering and computer architecture. The successful candidate should have an outstanding research record and be a recognized leader in their field. They must demonstrate a strong commitment to graduate and undergraduate teaching.

Applicants should include a curriculum vitae, a list of publications, and the names and addresses of at least three references, and may additionally include a research and teaching statement and other supporting documentation. Please send by email (text, postscript or PDF only) to:

faculty-search@cs.toronto.edu

or, by post to:

Faculty Recruiting Committee Chair

Department of Computer Science

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Professional Opportunities

New Jersey Institute of Technology Dept. of Computer Science

Assistant Professor Positions

The Dept. of Computer Science at New Jersey Institute of Technology is exploring hiring faculty for tenure track positions beginning fall 2006. Applicants are invited from candidates with research & teaching interests in: Networking & Security, Practical Software Engineering & System Building. Strong candidates in other fields will also be considered.

Applicants should have a PhD in computer science or closely related field. Applicants should have demonstrated potential for original research & a commitment to excellence in teaching. Salaries are competitive & commensurate with appointment rank & qualifications. The university reserves the right to substitute equivalent education and/or experience at its discretion.

NJIT is a public research university. The Dept. of Computer Science, with 29 faculty members & about 1000 students, is part of the College of Computing Sciences. Departmental research interests include: algorithms, bioinformatics, medical informatics, computer vision, databases, parallel processing, simulation & modeling, software engineering & computer networking. The dept. offers programs at the undergraduate, Master's & PhD levels in CS. The dept. also offers degree programs in Bioinformatics.

NJIT is located in Newark's University Heights, a multi-institutional campus shared with Rutgers University at Newark, the University of Medicine & Dentistry of New Jersey & Science Park. NJIT's location in the NY/NJ metro area is ideal for research collaboration. The area is home to other universities & research laboratories as well as major pharmaceutical, telecommunications & financial companies offering excellent opportunities for collaboration, consulting & industry-sponsored collaborative research. New Jersey enjoys a high standard of living & quality of life. Newark is minutes from New York City & close to the Jersey Shore, providing a wide range of cultural & leisure activities.

To apply, send a CV, research & teaching statement & cover letter to the attn: Personnel Box CS-AP. Also ask at least 3 references to send their letters of recommendation to the above attn. Applications & reference letters may also be sent electronically to hr@njit.edu. For more information about the Computer Science Dept., visit cs.njit.edu. *NJIT is an equal opportunity, affirmative action, equal access employer & especially encourages applications from women, minorities & persons with disabilities.*



A Public Research University

University Heights
Newark, NJ 07102-1982

University of Toronto
10 King's College Road, Rm. 3303
Toronto, Ontario M5S 3G4 Canada
The review of applications will commence on January 9, 2006 and will continue until the position is filled. Applications should be received by March 1, 2006 for full consideration during the current recruitment cycle.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from visible minority group members, women, Aboriginal persons, persons with disabilities, members of sexual minority groups, and others who may contribute to the further diversification of ideas. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

Utah State University Department of Computer Science Assistant Professor

Applications are invited for a faculty position at the Assistant Professor level, for employment beginning of Fall 2006. Applicants must have completed a PhD in computer science by the time of appointment. The positions require demonstrated research abilities, a significant potential for attracting external research funding, excellence in teaching both undergraduate and graduate courses, the ability to supervise student research, and excellent communication skills. The department is most interested in strengthening its focus in the following areas, listed in priority order: Software Engineering, Database Systems, Bioinformatics, Artificial Intelligence, Parallel and Distributed Systems, and Security.

USU offers competitive salaries and outstanding medical, retirement and professional benefits (see <http://personnel.usu.edu> for details). The department currently has approximately 300 undergraduate majors, 70 MS students and 15 PhD students. The BS degree is CSAB accredited. Utah State University is a Carnegie Research Doctoral extensive University of over 20,000 students,

nestled in a mountain valley 80 miles north of Salt Lake City, Utah. Opportunities for a wide range of outdoor activities are plentiful. Housing costs are at or below national averages, and the area provides a supportive environment for families and a balanced personal/professional life. Women, minority, veteran and candidates with disabilities are encouraged to apply. USU is sensitive to the needs of dual-career couples. Utah State University is an affirmative action/equal opportunity employer, with a National Science Foundation ADVANCE Gender Equity program, committed to increasing diversity among students, faculty, and all participants in university life.

Applications must be submitted using USU's online job-opportunity system, see <http://jobs.usu.edu/>. To access this job opportunity directly and begin the application process, open <http://jobs.usu.edu/applicants/Central?quickFind=50541> in your browser.

To be considered, an application must include a letter of interest, a current curriculum vitae (statements of research experience and interests, proposals written and funded, publications, and teaching experience), and the names of three references that the committee may contact. The review of the applications will begin on December 1, 2005 and continue until the position is filled. The salary will be competitive and depend on qualifications.

Virginia Tech Department of Computer Science Systems - Graphics/Animation

Applications at all ranks are invited for tenure-track faculty positions in:

Systems: Candidates with research breadth and depth across several areas of computer systems, architectures, compilers, and networks. Available resources include System X, the nation's most powerful academic supercomputer, and the National LambdaRail. Newly constructed space houses strong research programs in fault tolerance, protocol simulation, run-time systems, power-aware computing, performance modeling

and evaluation, and distributed and grid computing.

Graphics-animation: Candidates with research interests in animation and graphics desiring to collaborate in a new focus at the intersection of art and technology involving computer science, art, music, and communications. Current research and facilities include large (gigapixel) displays, the Human-Computer Interaction Center, high-performance computing (System X), virtual reality (VT-CAVE), and scientific visualization (e.g., in bioinformatics). Newly constructed space integrates faculty, graduate students, and extensive laboratories for HCI research.

Virginia Tech is located in Blacksburg, a scenic, lively, All-American Award winning town in southwest Virginia. Nearby is the white water of the New River and 1.7M mountainous acres of national forest. See <http://www.liveinblacksburg.com>.

Additional information and directions on how to submit applications are available at: <http://www.cs.vt.edu/FacultySearch>.

Review of candidates will begin January 15, 2006 and continue until the positions are filled.

Virginia Tech is an equal opportunity employer and a recipient of an NSF Advance grant to promote and enhance the careers of women in science and engineering.

University of Washington Computer Science & Engineering Tenure-Track, Research and Teaching Faculty

The Department of Computer Science & Engineering at the University of Washington has open positions in a wide variety of technical areas in both Computer Science and Computer Engineering, and at all professional levels. A moderate teaching load allows time for quality research and close involvement with students. Our recent move into the Paul G. Allen Center for Computer Science & Engineering expands opportunities for new projects and initiatives. The Seattle area is particularly attractive given the presence of significant industrial research laboratories as well as a vibrant technology-driven entrepreneurial community that further enhance the intellectual atmosphere. Information about the department can be found on the web at <http://www.cs.washington.edu>.

We welcome applicants in all CSE research areas including both core and interdisciplinary areas. We expect candidates to have a strong commitment both to research and to teaching. The department is primarily seeking individuals at the Assistant Professor rank; however, under unusual circumstances and commensurate with the qualifications of the individual, appointments may be made at the rank of Associate Professor or Professor. We may also be seeking non-tenured research faculty, postdoctoral researchers (Research Associates), and lecturers of all ranks. Applicants for both tenure-track and research positions must have earned a doctorate by the date of appointment; those applying for lecturer positions must have earned at least a Master's degree.

Please Apply On-Line At: <http://www.cs.washington.edu/news/jobs.html>

with a letter of application, a complete curriculum vitae, statements of research and teaching interests, and the names of four references. Applications received by February 28, 2006 will be given priority consideration.

The University of Washington is a recipient of a National Science Foundation ADVANCE Institutional Transformation Award to increase the participation of women in academic science and engineering careers. We are building a culturally diverse faculty and encourage applications from women and minority candidates.

The University of Washington is an affirmative action, equal opportunity employer.

Washington State University School of Electrical Engineering and Computer Science Faculty Position

The School of Electrical Engineering and Computer Science at Washington State University invites applications and nominations for a tenure-track position in bioinformatics/computational biology to begin August 2006 or later, at the level of Assistant,

Associate, or Full Professor.

Areas of research interest include but are not limited to development of statistical, theoretical, or computational approaches for interpreting biological, health, or medical data; mathematical models or computational techniques for the study of biological systems; or quantitative strategies for integrating diverse types of biological information and developing higher-level understanding of complex systems. Successful candidates will be expected to develop and maintain a vigorous research program supported by extramural funding, to train graduate students, and to participate in graduate and undergraduate teaching.

Required: Earned doctorate by August 16, 2006, and a record of research accomplishments in bioinformatics or computational biology.

Desired: Ph.D. in computer science or a related field; ability to communicate effectively with both students and colleagues; record indicating outstanding abilities and potential in research and teaching; and interdisciplinary research experience.

Highly-qualified individuals are encouraged to apply. Screening will begin January 10, 2006.

Send a letter of application addressing qualifications, a curriculum vitae, a statement of current and long-term research interests, and a statement of teaching experience and interests. Also arrange for four letters of reference that address research potential, teaching, and communication skills. Materials should be sent to:

B/CB Search Committee Chair
School of Electrical Engineering and
Computer Science
Washington State University
PO Box 642752
Pullman, WA 99164-2752

Full Notice of Vacancy can be viewed at:
<http://www.hrs.wsu.edu/employment/FAPvacancies.asp> (Search #4202).
EEO/AA/ADA

University of Waterloo Department of Electrical and Computer Engineering Faculty Positions

The Department of Electrical and Computer Engineering invites applications for faculty positions in most areas of computer engineering, software engineering, and nanotechnology engineering, and in VLSI/circuits, information security, photonics, MEMS, control/mechatronics, signal/image processing, and quantum computing. The University has been named the "Best Overall" university by reputation in Canada.

For more information and online application, please visit:

<https://ceadmin.uwaterloo.ca/DACA>

University of Wisconsin- Madison Department of Biostatistics and Medical Informatics Computational Systems Biology Cluster Hire (2 positions)

The Department of Biostatistics and Medical Informatics at the University of Wisconsin-Madison currently has 2 faculty positions for summer/fall of 2006. Candidates must have a Ph.D. in Computer Science or a related field. Post-doctoral training and expertise in computational systems biology desirable.

Applicants should submit a curriculum vitae, a statement of research objectives, sample publications, and arrange for at least three letters of reference to be sent directly to:

Jude Shavlik, Chair
Cluster Hiring Committee
c/o Dept. of Biostatistics & Medical
Informatics
K6/444 CSC, Box 4675
600 Highland Ave.
Madison, WI 53792-4675

Additional information is available at: <http://www.biostat.wisc.edu> under employment. Application deadline February 18, 2006.

The University is an Equal Opportunity/Affirmative Action employer and encourages women and minorities to apply. Unless confidentiality is requested in writing information regarding the applicants must be released on request. Finalists cannot be guaranteed confidentiality.

Professional Opportunities

University of Wisconsin-Milwaukee

Computer Science Program Faculty Recruitment in Medical Informatics

The Computer Science Program, College of Engineering and Applied Science, invites applications for a tenure-track faculty position in Medical Informatics. Candidates should have a Ph.D. in Medical Informatics, Computer Science or a closely related field and demonstrated promise of excellence in research and teaching. Senior candidates should have strong leadership qualities and an excellent research record that includes extramural funding.

Our Program is embarked on a path of growth and development. We have established a strong record of recruiting outstanding junior faculty and providing them with a stimulating academic environment. Several of our faculty, for example, have received the NSF Early CAREER Award. As a part of our growth and to complement our existing Ph.D. program, we have developed an exciting new interdisciplinary Ph.D. Program in Medical Informatics in collaboration with the Medical College of Wisconsin and several other academic units at our university. Information about this new program can be found at <http://www.medinf.uwm.edu>.

Applicants should send a hard vitae by post along with a statement of plans for research and teaching in Medical Informatics to:

Faculty Recruitment Coordinator for
Medical Informatics
Department of Electrical Engineering and
Computer Science
University of Wisconsin-Milwaukee
3200 N. Cramer Street
Milwaukee, WI 53211
Phone: 414-229-4677; Fax: 414-229-6958

Evaluation of applicants will begin
December 1, 2005, and will continue until
the position is filled. Women and minority
candidates are strongly encouraged to apply.
Information about the Computer Science
Program can be found at
<http://www.cs.uwm.edu>.
UWM is an equal opportunity institution
committed to diversity.

Wright State University

Department of Computer Science and Engineering Advanced Data Management and Analysis LexisNexis Eminent Scholar

Wright State University invites nominations and applications for the position of LexisNexis Eminent Scholar in Advanced Data Management and Analysis. This endowed position is part of the Ohio Eminent Scholars program and is funded by LexisNexis and the Ohio Board of Regents. The scholar will be tenured in the Department of Computer Science and Engineering. The scholar will provide research leadership for a \$43 million Wright Center of Innovation in Advanced Data Management and Analysis recently awarded as part of Ohio Governor Taft's 3rd Frontier Initiative. Space for the scholar and research team will be provided in a named research wing being added to the still new Russ Engineering Center.

Located 10 miles east of the City of Dayton, a metropolitan area of nearly one million people, Wright State University serves approximately 16,000 students (12,000 undergraduate and 4,000 graduate students) through seven colleges and three schools. The Department of Computer Science and Engineering, housed in the College of Engineering and Computer Science, offers bachelors, master's and doctoral degrees in Computer Science and Engineering.

The successful candidate will be an energetic, productive research leader with a strong record of funded research and an entrepreneurial bent. The Scholar should demonstrate success interacting with industry as well as competing for federal programs. The Scholar should lead active programs in one or more areas of data management and analysis.

A complete position description including responsibilities, qualifications, and preferred research areas is available at:

<http://www.cs.wright.edu/cse/scholar/>.

Additional related information and requirements of the Ohio Eminent Scholar program can be found at:

http://www.regents.state.oh.us/mainpages/20000315_OES_guidelines.pdf

Review of the applications will begin on February 15, 2006, but this position will remain open until filled. Salary for the position is competitive with excellent benefits. The starting date is negotiable.

Nominations and applications should be submitted to: CSE.scholar@cs.wright.edu.

Applications should include a letter of interest addressing qualifications, curriculum vitae, and the names and contact information of five professional references in MS Word or Acrobat PDF format. For questions, contact Professor Forouzan Golshani, Chair, Dept of Computer Science and Engineering at 937-775-5134.

Wright State University is committed to a policy of equal opportunity and affirmative action, and specifically encourages applications from members of under-represented groups.

Yale University

Computer Science Department Junior Faculty Position

The Yale Computer Science Department is looking for highly qualified candidates for junior faculty positions beginning in the 2006-2007 academic year. We seek to expand our research and teaching program in the area of systems, building on existing strengths in algorithms and complexity theory, artificial intelligence, computational science and applied mathematics, databases, distributed computing, graphics, machine learning, programming languages and compilers, security and cryptography, and vision and robotics. Strong candidates in all areas will be considered, but priority will be given to candidates in the areas of databases, networking, operating systems, and high-confidence software. Applicants are expected to excel in both research and teaching. They will find many opportunities for research collaborations both inside and outside the Computer Science department. Interdisciplinary work is encouraged, with Yale's world-class faculty in such computationally active fields as biology, chemistry, economics, engineering, geophysics, management, mathematics, medicine, psychology, physics, and statistics. Yale faculty regularly have the opportunity

to teach excellent students, both graduate and undergraduate, in relatively small classes. Candidates will hold a Ph.D. in computer science or related discipline. Applications submitted by January 15, 2006 will be given highest priority. Qualified women and minority candidates are encouraged to apply. Yale is an affirmative action/equal opportunity employer. Applications from women and minority scholars are encouraged. Our home page may be found at www.cs.yale.edu. Send vitae and have at least three letters of reference sent to:

Faculty Recruiting Committee
Department of Computer Science Yale
University
P.O. Box 208285
New Haven, CT 06520-8285

Questions may be directed to faculty-recruiting@cs.yale.edu.

York University

Engineering Program Tenure-Track Position

The Engineering Program, Faculty of Science and Engineering, York University, Toronto, Ontario, Canada, is seeking applications for a tenure-track position at the Assistant Professor level in the broadly defined area of Engineering Design as it relates to Geomatics, Space or Computer Engineering. The area of research is open and could include systems or software engineering; design processes and methodology; geospatial data infrastructure; or the design of control, communication, positioning, mechanical, electronic, VLSI, robotics, signal processing and other complex systems.

Details are available at www.yorku.ca/acadjobs.

York University is an Affirmative Action Employer. The Affirmative Action Program can be found on York's website at www.yorku.ca/acadjobs or a copy can be obtained by calling the affirmative action office at 416-736-5713. All qualified candidates are encouraged to apply; however, Canadian citizens and Permanent Residents will be given priority. All positions are subject to budgetary approval.

Google, Microsoft and Sun Fund New UC Berkeley Internet Research Center

Reprinted from Press Release
University of California, Berkeley
By Sarah Yang, Media Relations
15 December 2005

BERKELEY – In a bold effort to revolutionize Internet service technology, researchers at the University of California, Berkeley, are teaming up with Google, Microsoft and Sun Microsystems to launch a new Internet research laboratory on the campus.

The three companies will provide \$7.5 million over five years to fund research at the Reliable, Adaptive and Distributed systems laboratory, or the RAD Lab, UC Berkeley researchers announced today (Thursday, Dec. 15).

“Our goal is to create technology that will enable individual inventors and entrepreneurs to provide new services of value similar to large Internet services people use every day,” said David Patterson, UC Berkeley professor of electrical engineering and computer sciences and founding director of the RAD Lab. “The companies benefit by witnessing ideas in pre-competitive technologies at the early stages of development, and they will help point out the real-world obstacles that must be overcome.”

Other UC Berkeley professors in electrical engineering and computer

sciences co-founding the RAD Lab are Michael Jordan, Randy Katz, Scott Shenker and Ion Stoica. Another lab co-founder, Armando Fox, is currently an assistant professor of computer science at Stanford University, but is expected to join UC Berkeley in July 2006.

RAD Lab researchers will focus on developing alternatives to traditional software engineering, which follows a “waterfall” model of development. In such a traditional system, work is completed in orderly stages starting from system concept to development, assessment or testing, deployment and operation.

Critics say the traditional waterfall model is often too slow and therefore obsolete for the high-paced Internet era. Instead of infrequent, well-tested upgrades, code for Internet services is continually being modified on the fly as the product is scaled up to accommodate millions of users. This fix-it-as-you-go feedback loop enables speedier deployment, but it also requires a large technical support staff to make sure operations are not disrupted as bugs are resolved.

“Right now, it takes a large company employing hundreds of really smart people to support Internet services,” said Patterson. “Our goal with this center is to develop technology that eliminates

the need for such a large organization, opening up innovation opportunities for small groups or even individual entrepreneurs. We can help do this by applying statistical machine learning - the same technology used successfully in the recent autonomous vehicle grand challenge - to the development of computer systems.”

Google, Microsoft and Sun Microsystems are considered foundation members of the RAD Lab, each donating to it an average of \$500,000 per year. Along with additional smaller contributions from other affiliated companies, the research laboratory is expected to receive as much as 80 percent of its support from industry.

Grants from the National Science Foundation and the UC Discovery and the Microelectronics Innovation and Computer Research Opportunities (MICRO) programs will make up the remaining proportion of the funding for the center.

The researchers emphasized that any software and applications emerging from the RAD Lab will be made freely and openly available to the public, with source code distributed using the Berkeley Software Distribution (BSD) license. “We are following in the grand tradition of Berkeley engineering,

as with Berkeley's BSD Unix operating system, in making our innovations freely available and unencumbered for research and possible commercialization in source code form,” said Katz.

The founders emphasized that making this research as widely and openly available as possible will maximize the impact of the work, and so further the reputation of the university in its mission to create new industries and new jobs.

The RAD Lab will start off with the six UC Berkeley faculty co-founders and with 10 computer science graduate students. The number of graduate students participating in RAD Lab research is expected to grow to 30 over the years.

“Another reason companies are supporting the RAD Lab is to help UC Berkeley continue to produce new generations of young leaders in information technology,” said Katz.

Representatives from the companies will act as consultants and provide advice for the center's participants, but they will not work at the RAD Lab.

More information on the RAD Lab can be found at: <http://radlab.cs.berkeley.edu>. ■

CRA CONFERENCE AT SNOWBIRD ♦ JUNE 25 – 27, 2006 ♦ SNOWBIRD, UTAH

PRELIMINARY PROGRAM

About the Snowbird Conference: The biennial CRA Conference at Snowbird is the flagship conference for the leadership of the North American computing research community.

Who should attend: Computer science, computer engineering, and information technology department chairs; assistant, associate, and prospective chairs; directors of graduate or undergraduate education; directors of industry or government research labs/centers; and professional society or government leaders in computing.

Information about the conference site: The Snowbird Resort is located 30 miles from Salt Lake City, in the Wasatch Mountains. A top-rated ski resort in the winter, off-season at Snowbird offers hiking amidst beautiful scenery.

This year at Snowbird: Genevieve Bell, PhD, Director of Domestic Designs and Technologies Research at Intel will give the Keynote address. There will be three plenary sessions, numerous parallel workshop sessions, a workshop for new department chairs, a "State of the CRA" address, and presentation of the CRA Distinguished Service and A. Nico Habermann Awards. Below is a preliminary program that will continue to be updated on the CRA website (<http://www.cra.org>) as information becomes available.

Plenary Sessions

- **Computing Research Funding: Circling the Wagons or Expanding the Frontiers?**
Chair: Craig Wills (Worcester Polytechnic Institute)
Speaker: Ed Lazowska (University of Washington)
- **The Changing Dynamics of University/ Industry Relations**
Chair: J Moore (University of Texas at Austin)
Speaker: Robert Miller (University of California, Santa Cruz)
- **The Image of Computing: How Do We Get the Romance Back?**
Chair: Jeannette Wing (Carnegie Mellon University)
Speaker: Rick Rashid (Microsoft)

Workshops

- **Achieving Success in Interdisciplinary Research**
For at least ten years, national and international attention has been focused on analyzing the ingredients in success and failure of interdisciplinary research in academia. A 2004 National Academies report describes an array of communication and cultural obstacles, at the same time citing industry and national laboratories as institutions that strongly nurture interdisciplinary research. This session will consider ideas for creating academic environments that support interdisciplinary research, addressing both generic principles and issues specific to computer science.
Chair: Margaret Wright (New York University)
- **Traditional Federal Research Sources for Computing**
This workshop reports on federal research funding from traditional sources for computing initiatives. Current developments and expectations for the future will be discussed by participants from NSF-CISE and DARPA-IPTO.
Co-Chairs: Craig Wills (Worcester Polytechnic Institute)
Horst Simon (Lawrence Berkeley National Laboratory)
- **Opportunities for Computing Research with Government Labs**
This workshop involves government laboratory representatives reporting about their Computer Science research activities, in particular pointing out opportunities for collaborations, funding, student support and careers at the labs.
Chair: Horst Simon (Lawrence Berkeley National Laboratory)
- **Filling in the Gap: Industrial Research Funding for Computing**
With less federal funding available, one direction as an alternate source is industrial companies. However, industrial support for research is ultimately linked to sales, which hinders funding of basic research at the same levels as federal funding. Industrial workshop participants with knowledge of academic research funding practices will present the current situation as well as lead discussion on how the situation can be improved for both industry and academia.
Co-Chairs: Craig Wills (Worcester Polytechnic Institute)
Jeannette Wing (Carnegie Mellon University)
- **Publications in Computing**
A workshop or panel will discuss the state of affairs of publications in CS. Specifically, this would be an opportunity to discuss (1) the interplay of various issues (e.g., conferences as money-making propositions, tenure pressure of publish or perish, diminishing quality of reviews, effects on funding, misconceptions about value of conference versus journal publications, perception or reality of cliquishness of top-ranked conferences, among many others), (2) the impact of all of this on the "scientific record", and (3) the role, if any, that organizations such as CRA or NSF could or should play, including sponsoring studies that could educate or inform various stakeholders, or which may result in better models for publication and/or evaluation of scholarly impact.
Chair: Azer Bestavros (Boston University)
- **The Influence of Globalization on Computer Science Education**
Should the globalization of the information-technology workforce change the way we teach computer science to future students? If so, how? This panel will explore the way universities are responding to changes in how and where industry employs IT workers, and the educational background companies would like to see from new graduates.
Chair: Jennifer Rexford (Princeton University)
- **Rethinking CS101: Engaging Students from the Arts and Sciences in Computer Science**
"If you figure out a way to make technology work for you, you can explore curved shapes and make them possible ... you can do this because of the computer"
-- Frank Gehry, Architect
Wouldn't it be great to instill this level of excitement about computer technology in our students? This panel will explore innovative ways to convey an appreciation of computer science to students in the Arts and Life Sciences. The low cost of computer technology makes it possible now to experiment with genomic databases, laptop orchestras, or computer analysis of dance movement in the undergraduate classroom. Is it realistic to expose students to substantive computer science concepts in such courses? Can such interdisciplinary curricular approaches be used to draw students to computer science?
Chair: Anne Condon (University of British Columbia)
- **Alternative Entry Courses/Sequences That Work**
The traditional approach to CS1 has been found to discourage many prospective computing majors and, in general, to give incorrect views of what computing is all about. In this workshop we will learn of several proven approaches to teaching introductory computing concepts in ways that will attract students rather than discouraging them.
Chair: Jim Foley (Georgia Institute of Technology)
- **Undergraduate Research: Best Practices in Universities, Colleges, and Industry**
Undergraduate research is receiving considerable attention at major research universities, undergraduate institutions, and industrial laboratories. This panel session will address the merits and benefits of undergraduate research, best practices in undergraduate research programs, and funding opportunities.
Chair: Ran Libeskind-Hadas (Harvey Mudd College)
- **Interdisciplinary Courses**
Although computers have long been used as tools in the sciences and engineering, computer science has recently become a crucial part of the intellectual content of other disciplines. In response, colleges and universities have created new courses designed primarily for students in other disciplines, or have launched integrated courses intended to create connections among disciplines and break down traditional barriers. This session will explore the latest experiences in teaching computer science in conjunction with other disciplines, and discuss the interplay (and occasional tensions) between "core" computer science topics and interdisciplinary work within computer science departments.
Chair: Margaret Wright (New York University)
- **Globalization and Offshore Outsourcing**
This workshop reports the findings from an international ACM study on offshore outsourcing and gives some updates on what has happened since the publication of the report. Topics include the globalization of research, education as an enabler and a response to offshoring, and risks and exposures concerning intellectual property, privacy, and security through offshoring.
Chair: Moshe Vardi (Rice University)
- **Finding the Next \$1B Opportunity**
In this workshop we will discuss various mechanisms for finding large novel business opportunities from current day computing research work. We will go into the university, industrial, and entrepreneurial models and discuss what works and what does not.
Chair: Wim Sweldens (Lucent Technologies, Bell Labs)
- **Equal Access: Making sure your Computer Science, Computer Engineering, or Informatics Department is Accessible to Disabled Students**
This workshop will address the problem of making your computer science, computer engineering, or information technology program more accessible to disabled students, faculty, and staff. What are best practices in helping disabled students reach their goals? How to mentor disabled faculty to achieve success. The workshop will also describe activities of the new NSF-funded project, AccessComputing Alliance.
Chair: Richard Ladner (University of Washington)
- **Business Issues around Open Source and Standards**
The Open Source movement is an appealing alternative to conventional commercial licensing of software. Among the tenets of the movement are access to source code, methods of insuring the integrity of the original authors' source code, provisions for the use of such code in derivative works, and provisions for restricting (or not) the distribution of code. However, a fundamental question is, "What are some viable business models to support an organization devoted to open source licensing?" In this panel discussion we will present a variety of models used in academia and industry.
Chair: Bill Coughran (Google)
- **Industrial Affiliate Programs**
Industrial affiliate (IA) programs are often considered to be effective ways to both increase academic/industrial collaboration and generate discretionary income for CS departments. What are viable models for such programs? How do the models change as a function of the local industrial base? In this panel we will have representatives from CS departments in both "target rich" and "target poor" environments discuss their IA programs. We will also have a representative from industry to discuss what industry wants from an IA program.
Chair: J Moore (University of Texas at Austin)
- **What's Going On Outside North America**
CRA is chartered only in North America, so this session provides a view of the issues in computing education and research in the remainder of the world. In this panel, the presenters will be from CRA-like organizations that are concerned with the same issues that we are facing. They will describe their efforts and activities, many of which impact us as well.
Chair: Andrew Bernat, Computing Research Association

Additional Opportunities at Snowbird:

NSF Research Infrastructure Workshop – June 24-25

CRA Board of Directors Meeting – June 24-25

Workshop for New Department Chairs – June 25 – J Moore (University of Texas at Austin) and Mary Lou (University of Virginia)

IT Deans' Meeting – June 27-28 – Bobby Schnabel (University of Colorado at Boulder)

For program details and registration information, please see the CRA website: <http://www.cra.org>; e-mail: snowbird@cra.org; or call 202-234-2111.

Organizing Committee

Co-Chairs:

David Notkin (University of Washington), Academic Chair

Wim Sweldens (Lucent Technologies Bell Labs), Labs/Centers Chair

Members:

William Aspray (Indiana University); Anne Condon (University of British Columbia); William Coughran (Google); Ann Gates (University of Texas, El Paso); Ran Libeskind-Hadas (Harvey Mudd College); J Strother Moore (University of Texas at Austin); Jennifer Rexford (Princeton University); Horst Simon (Lawrence Berkeley National Laboratory); Diane Souvaine (Tufts University); Craig Wills (Worcester Polytechnic Institute); Jeannette Wing (Carnegie Mellon University); and Margaret Wright (New York University).