

COMPUTING RESEARCH NEWS

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Computing Research Gains Congressional Focus

By Peter Harsha

The concerns of computing researchers about the overall underinvestment in the federal IT research portfolio—and specific concerns about DARPA's steady withdrawal from long-term IT research, especially in universities—have gained new prominence in Congress thanks to a series of recent news reports, studies and congressional actions. That attention has so far culminated in a hearing of the full House Science Committee on the future of computer science research in the United States and questions about the implications of the shift in the overall landscape for federal support of computing research. As Congress works to set the funding levels for federal science agencies in fiscal year 2006, it remains to be seen whether the increased focus will result in increases in funding for IT research, but the increased attention has put some federal agencies and the Administration on the defensive.

While the computing research community has been working

over the past several years to focus attention on what it sees as a significant shift in the federal IT research portfolio away from fundamental, long-term research toward shorter-term, development-related research, getting traction for those concerns on the Hill and in the Administration has been slow going until recently. In March, the Senate Armed Services Committee (SASC)—a committee sympathetic to the community's concerns, especially as they related to DARPA, an agency under the committee's jurisdiction—posed a question to DARPA Director Anthony Tether aimed at getting data on DARPA's current and historical support for IT research at universities. The committee was responding to a request from the community to get actual data—the anecdotal evidence for DARPA's withdrawal from support for university IT research was strong, but without actual numbers it was difficult to advance the issue further in Congress or in the press.

DARPA responded by noting that its support for IT research overall, for both universities and in industry, had been fairly consistent, averaging about \$580 million in constant dollars over the past five years. DARPA support for university-led IT research, however, had fallen considerably over the same period—from \$214 million in FY 2001 to \$123 million in FY 2004. DARPA cited five “factors for the decline:”

1. A change in emphasis in the high-performance computing program from pure research to supercomputer construction;
2. A significant drop in unclassified information security research;
3. The end of TIA-related programs in FY 2004 due to congressional decree, a move that cost universities “a consistent \$11 million to \$12 million per year” in research funding;

4. Research into intelligent software had matured beyond the research stage into integration; and
5. Classified funding for computer science-related programs increased markedly between FY 2001 and FY 2004, but universities received none of this funding.

To the computing community, DARPA's response was a concession that the agency's focus in IT research is increasingly short term (at least in the unclassified realm) and that universities are no longer significant performers of DARPA IT research (classified or unclassified). In essence, DARPA's response validated the arguments the community had been making since 2001, but had only anecdotal evidence to prove.

DARPA's answers to the question posed by SASC found their way to *New York Times* reporter John Markoff, who had been interested in writing a story on the issue. Markoff's resulting article, “Pentagon Redirects Research Dollars”¹ (originally titled “A Blow to Computer Science

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Musings from the Chair

Computing: Our Role in 21st Century Universities and the Knowledge Economy

By Dan Reed, CRA Board Chair



As computing researchers, we can rightly take pride in having been key enablers of today's knowledge economy; networks,

sensors, data management systems, email, web technologies and collaboration tools have helped create the global village. As Marshall McLuhan described so perspicuously in the 1960s, “Today, after more than a century of electric technology, we have extended our central nervous system in a global embrace, abolishing both space and time as far as our planet is concerned.”

Globalization, like all change, has brought both challenges and opportunities: challenges to existing structures and processes, and opportunities for increased collaboration and community building. News and press sources, including Thomas Friedman's best-selling book, *The World Is Flat*, have focused on the economic impacts of globalization—offshoring, business process change and economic competitiveness. However, the implications for universities are just as substantial.

Although some pundits, including this writer, have observed that, given the slow rate of change, the rector of a medieval university would instantly recognize today's university structures, the central

theme of university over the past two hundred years has been increasing democratization of access. In the United States, early private and public universities were later joined by the “land grant” institutions, created under the 1862 Morrill Act to create “Colleges for the Benefit of Agriculture and the Mechanic Arts.” In 1944, the U.S. “G.I. Bill” made post-secondary education accessible to a new generation of World War II veterans.

Each of these, and similar legislation elsewhere, redefined the compact between universities and citizens and broadened participation in higher education, with concomitant social and economic

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Expanding the Pipeline

Anywhere, Anytime— or Just Where is Your Office Anyhow?

By Susan Landau, Sun Microsystems Laboratories

Computing Research Association

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CACS/AIC



My morning routine is to stop in the office early and see what has come in during the night. Then, over yogurt, cranberry juice, and *The New York Times*, I let issues sift and settle. Afterwards I reverse my commute—all thirty-four steps of it—and return to my study. I am a Distinguished Engineer at Sun Microsystems and I work from home.

I work ninety miles from the closest Sun office and across the continent from the one to which I report. Late afternoon, I might be walking my dog in conservation land at the end of my country street; minutes later, I might be developing the company's stance on digital-rights management with the Chief Technology Officer.

I do almost all my collaboration from home. I travel to Sun less than a dozen times a year; the rest of the time I use email, phone, and the Web. I call in for talks—indeed, I run a lecture series—and for meetings. I've even run a security review for a Sun product, spending a single day at the company and doing the rest of the work remotely.

The coming business trend is dispersed workforces. That's a natural fit for Sun (which "makes the net work"). Many companies are developing technologies for remote workers. Because I have first-hand experience with Sun's program, that's the one on which I'll focus.

When I was hired six-and-a-half years ago, the program didn't exist, and my manager and I worked everything out from scratch. It was not easy. DSL wasn't available, and the local phone company had never heard of Solaris ("What version of Windows is that?"). Updating my Linux box to accommodate a new AT&T calling plan could take hours. Getting the new Cisco router running was a challenge. But management was committed to my working effectively from home, and they made it happen.

Roughly half of Sun's employees, sixteen thousand people, spend at least twenty percent of their time working from home; fifteen hundred Sun employees spend at least three days a week at home. Some are hired into this situation; others move into it from a regular Sun office. Sun Labs, the research arm of Sun in which I work, has offices in Menlo Park, California, and Burlington, Massachusetts, and employees who work from home in Beaverton, Oregon; Seattle, Washington; Amherst, Massachusetts; Ottawa, Canada; Zurich, Switzerland; Wivenhoe, Essex, England; and Craigfad, Scotland.

Tools

The program works because Sun built the needed infrastructure. This includes educating and training

managers and employees on everything from how to supervise remote employees and connect them to the company, to how to manage and effectively participate in a distributed meeting (Plan the meeting well. Create time for social chatting at the beginning or end of the meeting. Address behavior problems as they occur: say "We hear typing noise, please mute your call"). Sun provides "real estate" for its remote employees to use when they come to a work site: reservable offices, drop-in centers (no reservation needed), and iWork cafes (both types of Java available). Most interesting to me, though, are the technology solutions.

Accessline is a follow-me phone product: your phone number follows you from home office to office drop-in space to conference meeting room—wherever you want to get calls. You may not be in one place, but your callers reach you as if you are.

"Sun Forum" provides small groups of users (fifteen or fewer) shared access to electronic whiteboards, chat facilities, and audio and video conferencing.

Sun Rays are Sun's thin client/fat server solution. Evolved from "memoryless workstations" (do the computing locally, but memory is elsewhere), Sun Rays enable "hot-desking"—authenticate yourself to a machine and start your session, move to another office, reauthenticate, and there's your session. When you move offices, you don't move machines, you just move your ID card. The Sun Ray is a thin client; the guts of the system are in the Sun Ray server. Once there is bandwidth built up—and the United States has done so—supporting remote users is easy. Since updates, patches, and so on are all done centrally, Sun Rays are a great solution for remote users.

And Does the Program Work?

Sun likes the Remote Work from Home program because it saves money. You don't need an office for an employee who doesn't use one (the company has saved more than 7,700 office spaces). Employees enjoy the flexibility the program offers.

The experience is not all positive, however. The Labs' sysadmins—I've had three during my time at Sun—have been wonderful, but problems often occur when the sysadmins are not available. So I've learned to handle minor system administration myself.

Another complication is that I'm on the road a lot. I make about six week-long trips cross-country to Sun annually, and several shorter ones to the Sun office two hours away. This is in addition to my usual travel related to conferences, committees, and other professional activities.

In my time at Sun, I've done collaborative work with engineers on the Liberty Alliance specifications, developed Sun's digital-rights-management policy stance with the Chief Technology Officer, advised the public policy office on cryptographic export control and other security issues, and worked closely with Sun's Chief Security Officer on a variety of issues. I put effort into my work relationships and, as a result, I have a number of close ones. It is possible to build such relationships, but it is harder to do from a distance. The moral: working remotely is not for the socially impaired.

One problem I have not solved is that I don't participate in the informal discussions—the random idea brought up over latte, the talk someone heard at a meeting the week before and mentions at lunch—that are the lifeblood of a research lab. I was never one for the water cooler, but I've always enjoyed long dinners and discussion about new ideas, old ones, politics, science, and technology. I arrange this when I travel to Sun, but my connections to my colleagues are not as close, our conversations not as frequent, as they would be if I saw them daily.

Remote Work: A Solution to Many Complexities

These are minor cavils. The real point for me is that, like many professional women, I have a family and a "two-body" problem.¹ Sun's willingness to have me work from home has enabled me to have a dynamic scientific career while living with my husband and kids. I feel very, very lucky.

The two-body problem is a serious roadblock for many women scientists who are often married to other scientists. (A 1992 article in *Science* stated that 69% of married female physicists were married to scientists, as were 80% of female mathematicians and 33% of female chemists.²) There are couples who solve their problem by finding two positions at the same institution, but there are not many such solutions. There are couples who solve their problem by finding two jobs nearby, but there are not a lot of research institutions close to one another.

Remote work from home will not work for everyone or in every situation. And it has its costs. But it is not just industry that can benefit from it. If the program works for industry, why not for academia as well?

Professors probably need to teach classes in person, at least some of the time. But Sun managers run engineering meetings remotely;

Where is Your Office Anyhow?
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Issues for the CISE Community in the New Academic Year

By Peter A. Freeman

I trust that you had a refreshing and productive summer and are beginning the new academic year with renewed vigor to help advance our field. The NSF staff continued to work long hours with great dedication over the summer to make sure that we are serving you well. As usual at this time of year, we have a number of personnel transitions underway; these will appear on our website as they occur.

As we begin a new academic year, I want to give a brief status report on CISE and then outline some of the major issues we will be discussing this year.

Our budget for FY05 was essentially flat, and although we hope that some of the steps we are taking may have eased the proposal pressure just a bit, we do not anticipate that the final acceptance rates for this year will show any great improvement. We will communicate the past year's results once the fiscal year closes. The expectation is that when Congress finishes work on our FY06 budget the coming year will show, at best, a tiny improvement. Indeed, the outlook for the next several years for all funding for S&E in all agencies is that it will be flat at best.

Earlier this summer, the CISE Division of Shared Cyberinfrastructure (SCI) became the Office of Cyberinfrastructure (OCI), and the responsibility for guiding it passed from me to the Office of the NSF Director, as guided by a CI Council of which I am one of ten members. Although this means that the revised CISE budget is now approximately \$500M instead of over \$600M, the impact on the computing research community should be minimal, if any. When CISE was reorganized two years ago, essentially all basic research support was moved into the three other divisions, and SCI was focused on cyberinfrastructure (CI) for other areas of S&E. (Some excellent CI researchers are currently supported by programs in SCI and we expect

that this will continue). This activity has grown to be so important that it was time for it to have higher visibility and attention in the NSF organization. In turn, my staff and I can now focus our full attention on the other 80 percent of our former budget—fundamental research and education in CS&E. In short, this is a positive development for all concerned.

Let me now share with you some of the major issues that CISE will be concerned with in the coming year—issues that affect you and that I hope we will hear your views on. Budget, of course, is an issue that we wrestle with daily. There is not enough funding available for most areas of S&E in all agencies due to the exigencies of our current national situation. For CS&E, the situation is clearly worse than some but, in the absence of an expanding “pie,” it is very difficult to grow resources. (Consider the situation on many campuses when students suddenly shifted to computing disciplines, but the resources did not shift so quickly). Finding ways to make our case more effectively is a challenging issue for us all.

Insufficient funding overall, of course, is one of the major causes of falling “success rates” for proposals. We continue to explore mitigation mechanisms, especially with respect to young faculty, those that have not previously participated in funding competitions, senior investigators who may have stepped back in favor of younger colleagues, and so on. The issues are multifaceted, interrelated, and often must be dealt with in the absence of accurate or up-to-date data. These are issues that will face CISE and the field for the foreseeable future. Your ideas and feedback are essential to help us deal with the issues.

An issue that is highlighted by the transition of SCI to OCI is how to insure that the new developments needed for advanced S&E applications supported by CI

make their way rapidly from your research into use—and to make certain that you are fully aware of the very important research opportunities presented by the worldwide efforts to provision advanced CI for S&E research. These efforts often lead to exciting breakthroughs in many research areas and provide great opportunities to explore new CS&E ideas in challenging applications. We are already taking steps to insure that the bi-directional flow of ideas and opportunities continues, but this will be one of the issues facing us this year.

Another change that poses a continuing challenge for many of you, for CISE, and for all of NSF is the transition from the formal ITR program to a situation in which the interest in and need for collaborative work between CS&E researchers and those in other disciplines continues to grow. The ITR program in general was a great success in broadening our field and showing others the value of substantive work with you, but now NSF must find ways to continue to encourage and fund that type of work in the absence of a formal program dedicated to it. I know this is an issue for many of you and it is one that we are well aware of at NSF.

While often the most compelling issue seems to be funding, I believe that the decisions you and we make—individually and collectively—about research and educational activities are in many respects of even greater importance. Will you choose to take a safe route in your research that will produce papers, but perhaps reduce the chances that you and your students will make the next breakthrough? Will you continue to teach many of the same things that require little preparation, or will you think hard about how to help your students be better prepared for the future? Will we as a field continue to let others erode our impact on major campus and societal decisions or will we provide the leadership that is so sorely needed? Will CISE focus its limited resources most effectively

for the future, or will we continue outdated activities past their usefulness? All of us in CISE think about these types of questions a lot, and I urge you to engage each other and us in discussing them and finding strategic paths forward.

The CISE Advisory Committee (AC) is one of our primary means of seeking broad, strategic guidance from the community. Dr. Alfred Spector of IBM has very effectively led the AC for the past two years and remains on the Committee for one additional year. Professor Al Aho of Columbia University has graciously agreed to lead the AC for the next two years. I will be asking them to help us address these strategic issues in the coming year, and I encourage you to interact with the AC members to express your views and assist them in helping CISE. Our meetings are always public and are posted on our website in advance. The next meeting will be held at the Computer Museum in Mountain View, CA, on October 20-21.

Computer science, the disciplines based on it, and the students and results that flow from your efforts are at the heart of everything from economic development to national defense to better human communication. Yet the future will see developments that even we cannot imagine. We are exceedingly fortunate to spend our time on something that is so important and also so much fun. However, with that comes great responsibility to utilize our resources strategically for the benefit of all and to lead, not only technologically, but also in helping to guide the productive use of the wonders that come from our efforts.

Have a great year!

Peter A. Freeman (pfreeman@nsf.gov) is Assistant Director of NSF for CISE. ■

Margolis Honored with CRA Habermann Award



“A Diversity of Scholars— A Tapestry of Discovery”

Richard Tapia Celebration of Diversity
in Computing Conference 2005

October 19-22, 2005 in Albuquerque, New Mexico

See: <http://www.ncsa.uiuc.edu/Conferences/Tapia2005>

CRA's Habermann Award recipient, Jane Margolis, UCLA, is pictured with ACM President Dave Patterson; CRA Executive Director, Andy Bernat, who presented the award; and Jim Foley, CRA board chair. The award was made at the ACM Awards Banquet in San Francisco on June 11.

Photo Credit: Christy Bowe, ImageCatcher News

CRA-W Receives National Science Board Award



Photo Credit: Richard A. Floyd

Pictured at the State Department formal dinner where the NSB 2005 Public Service Award (Group) was presented are (from the left):

Carla Ellis (CRA-W co-chair); Nancy Leveson; Anne Condon; Sheila Castaneda; Lori Pollock; Jan Cuny; Mary Jean Harrold (CRA-W co-chair); Mary Jane Irwin; and Mary Lou Soffa.

The selection of CRA-W was based on the following:

For the past 14 years, CRA-W has been committed to public service through programs and projects aimed at increasing the participation of women in computer science and engineering research and education. Among some of the activities promoted by CRA-W are:

- Increasing the number of women entering graduate school in computer science and computer engineering by matching outstanding female undergraduates with female mentors for a summer of research at the mentor's institution.
- Encouraging the next generation of scientists and fostering awareness of women in science and technology through a Distinguished Lecture Series.
- Publishing reports and articles that focus on career advancements for women, such as *Recruitment and Retention of Women Graduate Students in CSE*; and "Expanding the Pipeline" column for *Computing Research News*, to name a few. ■

CRA Welcomes New Academic Members

University of Maryland, Baltimore County (IS)

University of Montreal (CS)

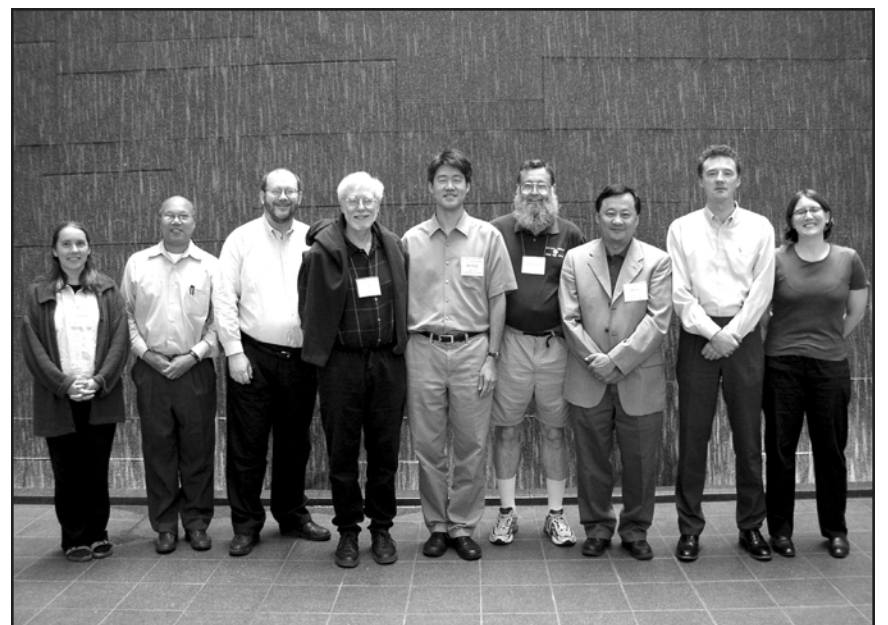
University of North Carolina at Chapel Hill (SILS)

CRA Hosts Tisdale Fellows



On June 30, CRA hosted a luncheon for the 2005 Tisdale Fellows at the Sumner School in Washington, DC. Participants included, l to r: Brooke Ricalde, Stanford University Graduate School of Education; Sherry Ambrose, Woodrow Wilson School of Public Policy, Princeton University; Min Li Chan, Stanford University; CRA's summer Fellow, Daniel Rothschild, Gerald R. Ford School of Public Policy, University of Michigan; Clare Rojstaczer, Pomona College; Sarala Nagala, Stanford University; and Luana Espana, Goldman School of Public Policy, University of California, Berkeley. CRA Executive Director Andy Bernat provided a brief overview of CRA's government affairs activities.

Since 1998 the Tisdale Fellowship Program has been bringing college students to Washington, D.C. for internships that explore current public policy issues of critical importance to the high technology sector of the economy. Other participants in the 2005 program include HP, Agilent, Dell, Computer Systems Policy Project (CSPP), Business Software Alliance (BSA), and Infotech.



New CRA board members pose for a photo at the July board meeting in Vancouver, BC. Left to right: Anne Condon, Bryant York, Dan Reed (board chair), J Moore, Peter Lee, David Notkin, Ben Wah (who will join in January), Wim Sweldens, and Jennifer Rexford (who joined in February). New member Rich DeMillo was unable to attend.

CRA Welcomes New Board Member

The IEEE-Computer Society has appointed George V. Cybenko as one of its two representatives on the CRA Board of Directors, effective July 20, 2005. Professor Cybenko replaced Dr. Guylaine Pollock, Sandia National Labs, who first served as an IEEE-CS representative from 1997-99 and later rejoined the board in 2000.

Professor Cybenko is the Dorothy and Walter Gramm Professor of Engineering in the Thayer School of Engineering at Dartmouth College. His current editorships include *IEEE Privacy and Security* (Editor-in-Chief); *IEEE Computing in Science and Engineering*; *Neural Networks*; *Mathematics of Control, Signals and Systems*; *Journal of Computational Analysis and Applications*; and *Applied Numerical Mathematics*. Professor Cybenko also serves on a number of advisory boards and committees, including the Minnesota Supercomputer Institute; the Lorentz Institute, Leiden University, Netherlands; Mathematics and Computer Sciences Division (Argonne National Laboratory); and the Institute for Mathematics and Applications (University of Minnesota).

Zhou Wins Anita Borg Award



Pictured above receiving her award from CRA-W Co-Chair, Carla Ellis, is this year's recipient, Yuanyuan Zhou, Assistant Professor at the University of Illinois at Urbana-Champaign. CRA-W's Anita Borg Early Career Award was presented at the 2005 HotOS Conference in Santa Fe, New Mexico in June 2005.

The award honors the late Anita Borg, who was an early member of CRA-W and an inspiration for her commitment to increasing the participation of women in computing research. This award is given annually by CRA-W to a woman in computer science and/or engineering who has made significant research contributions and who has contributed to her profession, especially in the outreach to women. This award recognizes work in areas of academia and industrial research labs that has had a positive and significant impact on advancing women in the computing research community and is targeted at women who are relatively early in their careers (no more than 10 years past the Ph.D.).

Dr. Zhou has made significant contributions in the interdisciplinary area of architecture and operating systems. She is one of the first to create an architecture and operating system support for software debugging and to apply data mining to program analysis for bug detection. Her work has received wide attention inside and outside the architecture and operating system research community. Her recent projects include the ARTS project, which is one of the first investigating architecture and operating system support to improve software quality including robustness, reliability and availability. Her PSALM project is one of the pioneering projects in the direction of power management for data centers. She has received an NSF Career award, an IBM Faculty Award, and an IBM SUR award. Dr. Zhou also had two papers selected by IEEE Micro's Top Picks from architecture conferences in 2004. Dr. Zhou fondly remembers when she had the opportunity to meet Anita Borg briefly during a summer internship in California in 1996.

In addition to her research contributions, Dr. Zhou actively reaches out to women in computer science at all levels. At UIUC, she helped organize the first annual Undergraduate Women in Engineering camp in 2003 for first year students. In 2004, she participated in the CRA-W's DMP project and hosted two women undergraduate students in summer projects. Additionally, she joined with several other women faculty members at UIUC to push the department to set up child-care grants for women with small children to travel to conferences. In April 2005, she was invited as the only remote panelist in North Carolina State University's Women in CS event. Currently, she is supervising 10 Ph.D. students, three of whom are women students. ■

NSF to Announce Next Science of Design Competition

Information about the second Science of Design solicitation will appear in September at: <http://www.cise.nsf.gov>.

The competition this year will be significantly different than last year and will encourage team projects to bring new thinking and people into the effort to lay a fundamental basis for the creation of software-intensive systems. An informational meeting for potential PI's is being planned for late September/early October. ■

February 4 Deadline for CRA Service Award Nominations

The Computing Research Association invites nominations for the CRA Distinguished Service Award and the A. Nico Habermann Award for 2006.

Distinguished Service Award

CRA makes an award, usually annually, to a person who has made an outstanding service contribution to the computing research community. This award recognizes service in the areas of government affairs, professional societies, publications or conferences, and leadership that has a major impact on computing research.

A. Nico Habermann Award

CRA makes an award, usually annually, to a person who has made outstanding contributions aimed at increasing the numbers and/or successes of underrepresented groups in the computing research community. This award recognizes work in areas of government affairs, educational programs, professional societies, public awareness, and leadership that has a major impact on advancing these groups in the computing research community. Recognized contributions can be focused directly at the research level or at its immediate precursors, namely students at the undergraduate or graduate levels.

For a list of previous recipients of these two awards, see: <http://www.cra.org/main/cra.projects.html>.

Nomination Procedure

The deadline for receipt of nominations is **February 4, 2006**. Nominations should not exceed two pages in length and should *describe the contributions* on which the nomination is based. Letters in support of the nomination are welcome but not required. Questions or comments may be addressed to awards@cra.org.

Send nominations electronically to: awards@cra.org (in plain text or as a Word attachment). Alternatively, mail or fax to:

CRA Service Awards
Computing Research Association
1100 17th Street, NW, Suite 507
Washington, DC 20036-4632
Tel. 202-234-2111
Fax: 202-667-1066
E-mail: awards@cra.org
<http://www.cra.org/main/cra.awards.html> ■

SNOWBIRD 2006 ALERT

Department Chairs and Directors of Labs/Centers

Mark your calendars now for CRA's Conference at Snowbird 2006!

This biennial event is a "must" for department chairs and directors of labs and centers. The organizing committee is putting together a stimulating program, including the always-popular Workshop for New Chairs. The conference dates are **June 25-27, 2006** in Snowbird, Utah. See future issues of CRN and the CRA website (<http://www.cra.org>) for updates, including program details and registration/accommodation instructions as they become available.

Snowbird 2006 Organizing Committee

Academic Co-Chair: David Notkin, University of Washington
Labs/Centers Co-Chair: Wim Sweldens, Lucent Technologies, Bell Labs)

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)

Margaret Wright (New York University)

The computing research community thanks the following non-board members who served on CRA committees from July 2004 to June 2005.

Fran Allen (IBM)	Mekbib Gemeda (The City University of New York)	Juan Meza (Sandia National Laboratory)
Nancy Amato (Texas A&M University)	Vijay Gurbaxani (University of California, Irvine)	Renee J. Miller (University of Toronto)
Annie Anton (North Carolina State)	Jessica Hodgins (Carnegie Mellon University)	Radha Nandkumar (NCSA)
Sandra Johnson Baylor (IBM)	Raquell Holmes (Boston University)	David Novick (University of Texas at El Paso)
Wayne Bennett (Clemson University and ECEDHA)	Andrew Hume (AT&T Labs – Research)	Mitsunori Ogihara (University of Rochester)
Eric Brittain (MIT)	John Hurley (The Boeing Co.)	Joann Ordille (Avaya Labs)
Carla Brodley (Purdue University)	Mary Jane Irwin (Pennsylvania State University)	Sethuraman Panchanathan (Arizona State University)
Duncan Buell (University of South Carolina)	Sid Karin (University of California, San Diego)	Yale Patt (University of Texas at Austin)
Sheila Castaneda (Clarke College)	Hank Korth (Lehigh University)	Lori Pollock (University of Delaware)
Theresa Chatman (Rice University)	Susan Landau (Sun Microsystems Laboratories)	Ann Redelfs (Cornell University)
Allison Clark (NCSA)	Andrea Lawrence (Spelman College)	Barbara Simons (ACM)
Joanne McGrath Cohoon (University of Virginia)	Insup Lee (University of Pennsylvania)	Valerie Taylor (Texas A&M)
Anne Condon (University of British Columbia)	Phoebe Lenear (NCSA)	Patricia Teller (University of Texas, El Paso)
Kenneth Connor (Rensselaer Polytechnic Institute)	Nancy Leveson (Massachusetts Institute of Technology)	Benjamin Wah (University of Illinois, Urbana-Champaign)
Gerald Engel (University of Connecticut)	Ran Libeskind-Hadas (Harvey Mudd College)	David Waltz (Columbia University)
Faith Fich (University of Toronto)	Monica Martinez-Canales (Sandia National Laboratory)	Telle Whitney (Institute for Women in Technology)
Kathleen Fisher (AT&T Labs – Research)	Margaret Martonosi (Princeton University)	Pamela Williams (Sandia National Laboratory)
Jeffrey Forbes (Duke University)	Stephanie McLean (NCSA)	Bryant York (Portland State University)
Joan Francioni (Winona State University)		

Lazowska Receives Distinguished Service Award



Photo Credit: Christy Bowe, ImageCatcher News

Pictured at the ACM Awards Banquet in San Francisco on June 11 are (l to r): CRA Executive Director Andy Bernat; award winner and former board chair Ed Lazowska; board chair Jim Foley, who presented the award; and Dave Patterson; ACM President and former CRA board chair.

Transitions and Awards

Lenore Blum, Distinguished Career Professor of Computer Science, Carnegie Mellon University, and **Richard E. Ladner**, Professor of Computer Science and Engineering at the University of Washington, were awarded 2004 Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM). The PAESMEM Program, administered on behalf of the White House by the National Science Foundation (NSF), seeks to identify outstanding mentoring efforts that enhance the participation of groups, including women, minorities and persons with disabilities that are underrepresented in science, technology, engineering and mathematics.

Among those recently elected members of the National Academy of Sciences in recognition of their distinguished and continuing achievements in original research were **Butler W. Lampson**, distinguished engineer, Microsoft Corp., Cambridge, Mass.; and **Margaret H. Wright**, professor and chair, department of computer science, Courant Institute of Mathematical Sciences, New York University. **Adi Shamir**, Borman Professorial Chair of Computer Science and Applied Mathematics, department of computer science, Weizmann Institute of Science, Rehovot (Israel) was elected a foreign associate.

Congratulations to **Susan Landau** who has been appointed a Distinguished Engineer at Sun Microsystems Laboratories.

Gabby Silberman has recently been appointed Senior Vice President & Head, CA Labs, Islandia, NY.

CRA board member, **Alfred Z. Spector**, has been appointed Vice President, Strategy and Technology, Software Group at IBM Corp. Dr. Spector previously was Vice President, Services & Software Research at IBM. ■

CRA Bulletin Relunched as a Blog

The Bulletin provides pointers to reports and other information that might be of interest to computing researchers, students and administrators. Topics covered include CS/CE student and faculty demographics, salaries, R&D, and the IT workforce. Other items of interest, such as events, will also be added occasionally.

The intention is to create a source for reliable information, rather than 'breaking news' or editorials. Instead of dealing with large reports in a single entry, individual graphs or issues will be given their own entries.

Check it out at: <http://www.cra.org/bulletin>. ■

CRA Academic Careers Workshop

for
New Faculty and Advanced Graduate Students
in
Computing-Related Disciplines

February 27-28, 2006 – Washington, DC

Details soon at: <http://www.cra.org>

Congressional Focus
from Page 1

Research” in early versions of the *Times*) raised the profile of the community’s concerns dramatically and spawned coverage by a number of other newspapers and columnists, including the *Washington Post*, the *New York Times*, columnist Thomas Friedman, *San Jose Mercury News*, *Seattle Post Intelligencer*, columnist Norman Ornstein, Morton Kondracke in *Roll Call*, the *Los Angeles Times*, and *Business Week*.² The coverage in the national press also led *Science Magazine* to solicit an editorial from Edward Lazowska, Chair of the President’s Information Technology Advisory Committee (PITAC) and University of Washington professor, and Dave Patterson, member of PITAC, President of ACM, and UC Berkeley professor, on the issue, which ran in the May 6, 2005, edition of the magazine.

At the same time, PITAC was making the rounds on Capitol Hill, briefing key members of Congress on the findings of its recently released report *Cyber Security R&D: A Crisis of Prioritization*. That report noted that the federal government was dangerously underinvested in civilian cyber security R&D—especially at the National Science Foundation—and that policies at agencies like DARPA and the Department of Homeland Security were significantly limiting the participation of the academic community (DARPA) or not placing sufficient emphasis on cyber security R&D, given the threat it poses to the nation’s critical infrastructures and citizens (DHS). Buttressing their case was a February 2005 report of the Defense Science Board (DSB) on *High-performance Microprocessor Supply*, which noted in an appendix that the changes at DARPA and DOD had impacted the agency’s long-term mission. Citing the increasing disengagement of DARPA from support of long-term research at universities, the board concluded DOD was suffering the effects:

“Historically, the rapid rate of growth in U.S. microchip capability resulted from a robust national portfolio of long-term research that incorporated both incremental and revolutionary components,” the report noted. “Industry excelled in evolutionary technology developments that resulted in reduced costs, higher quality and reliability and vastly improved performance. DOD now is no longer perceived as being seriously involved in—or even taking steps to ensure that others are conducting—research to enable the embedded processing proficiency on which its strategic advantage depends. This withdrawal has created a vacuum where no part of the U.S. government is

able to exert leadership, especially with respect to the revolutionary component of the research portfolio.”

The combination of PITAC efforts, federal studies, and media coverage helped to convince Congress to examine the issue. On May 12, 2005, the full membership of the House Science Committee convened a hearing on “The Future of Computer Science Research in the U.S.” The committee called as witnesses John Marburger, the Director of OSTP, Tony Tether, William Wulf, President of the National Academy of Engineering, and Tom Leighton, co-Founder and Chief Scientist of Akamai Industries and a member of PITAC.

The computing community³ also provided written testimony for the hearing,⁴ examining how the United States came to assume its dominant position in IT and the benefits that role conveys to the nation; why the changing landscape for federal support of computing research imperils U.S. leadership in IT and, in turn, U.S. economic performance in the coming decades; and lastly, what the community believes should be done to shore up that leadership.

The focus of the hearing was less a broad look at the overall federal IT R&D portfolio and more a review of DARPA’s declining support for university IT R&D. After hearing Science Committee Chairman Sherwood Boehlert (R-NY) and ranking Democrat Lincoln Davis (D-TN) open the hearing with strong words of support for the computing research community’s position and expressing serious concerns about DARPA’s direction, Tether defended his agency, noting that if DARPA was withdrawing from support of university IT research, it was because they were favoring a “multidisciplinary approach” to funding now—a slightly different answer than he provided to the same question posed by SASC.

In the end, he said, he saw a lot of “hand-wringing from the computing community,” but not much input about what his agency should be doing. Coming at the very end of the hearing, this comment inspired Boehlert to turn to Wulf and Leighton and ask whether they were up to the challenge of identifying areas of research currently undersupported at DARPA, and could they respond to both the committee and Tether in writing? Both Wulf and Leighton said they would be happy to provide answers.⁵

The hearing raised enough concerns in the minds of the Science Committee membership that Chairman Boehlert pledged to “remain engaged” in the issue, hoping to use his committee—which lacks jurisdiction over DARPA—as “an honest broker” between the agency and the computing community.

The Science Committee staff has already followed through on a part of that engagement pledge, meeting separately with the House Armed Services Committee—the committee with jurisdiction over DARPA and one that has proven unsympathetic to the community’s concerns in the recent past—and securing a commitment from them to meet with representatives of the computing community to discuss these concerns.

In the Senate, the attention has led to the introduction in late July of two amendments to the pending FY 2006 Defense Authorization bill—one that would increase the authorization for fundamental computer science research at DARPA, and another that would task DSB with looking at what DARPA must do to attract better talent, build a strong base with the best university minds, and build an R&D portfolio of “the first technical importance.” The amendments should be before the Senate after Labor Day.

As all of these efforts move forward, and IT research continues to receive consideration at the highest levels, check the Computing Research Policy Blog (<http://www.cra.org/govaffairs/blog>) for the latest news.

End Notes:

¹Story on web at: <http://www.nytimes.com/2005/04/02/technology/02darpa.html?ex=1270098000&en=e081c19247a119ed&ei=5090&partner=rssuserland>

²Links to all of the pieces noted are listed at <http://cra.org/research>.

³Represented by CRA, the U.S. Public Policy Committee of ACM, the Society of Industrial and Applied Mathematics, the Coalition for Academic Scientific Computation, the Electrical and Computer Engineering Department Heads Association, and the American Society for Information Science and Technology

⁴Available online at http://www.cra.org/govaffairs/jointstatement_final.pdf.

⁵Wulf and Leighton’s answers can be found at: <http://cra.org/research>. ■

Musings from Page 1

benefits. Arguably, we are today renegotiating that compact yet again, albeit implicitly. State funding is a declining fraction of most U.S. public universities, necessitating new approaches to mission definition and budgeting. Moreover, the episodic model of higher education, where young adults matriculate and acquire the knowledge needed for productive careers, is being challenged by globalization and the rapid pace of technical change.

In computing, we have long known that an enduring commitment to continuously updating our technical skills is a prerequisite to first-class research and education. This requirement now touches a much broader spectrum of society, as jobs, professions and companies now appear, migrate or disappear in a few years. In turn, this raises a plethora of questions about how we, as computing researchers and educators, help revise the university compact in a 21st century knowledge economy. We are, after all, in the knowledge business!

In this milieu, the policy, social and technical issues abound:

- What tools and technologies can best sustain lifelong education?
- As the volume of “born digital” data continues to explode, how do we manage these data to put the right information into the right hands at the right time? In other words, how can we make Vannevar Bush’s Memex real?
- How do we continue to broaden the base of participation, in computing in particular and in technical disciplines in general?
- How can we help build virtual organizations rapidly that combine the skills of the best people, regardless of location?
- How can we foster interdisciplinary and multidisciplinary education that trains individuals to work in collaborative groups?

As Jim Foley noted in a previous CRN column, “Computing: We Have a Problem ...” (May 2005, p. 4), issues related to computing research funding and enrollments, within this global context, affect our innovation, economic growth, international competitiveness, national security, and quality of life. In addition to the two task forces CRA has recently formed, which Jim also described in his column, I invite your comments and ideas on additional roles CRA can and should play in these areas.

Dan Reed (Dan_Reed@unc.edu) began a two-year term as CRA’s Board Chair on July 1. He is the Chancellor’s Eminent Professor at the University of North Carolina at Chapel Hill and Director of the interdisciplinary Renaissance Computing Institute (RENCI). ■

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*Indicates new members in 2004-05

2006 CRA Outstanding Undergraduate Awards Deadline October 17

The Computing Research Association is pleased to announce the 12th annual CRA Outstanding Undergraduate Awards Program, recognizing undergraduate students who show outstanding research potential in an area of computing research.

To be eligible, nominees must attend a university or college located in the United States or Canada, and must be nominated by the department chair or a faculty member. Each department may nominate a total of two male and two female candidates. Preference is given to students in their senior year (or the equivalent). In addition to evidence of significant research contributions, the committee also considers the student's academic record and service to the community.

A cash prize of \$1,000 will be awarded to each of two undergraduate student winners, one female and one male, who are majoring in computer science, computer engineering, or an equivalent program. A number of other outstanding candidates will be recognized with Honorable Mention. The awards will be presented at one of the major computing research conferences sponsored by CRA, ACM, the IEEE Computer Society, SIAM, AAAI, or USENIX. The two first-prize winners will receive financial assistance toward their travel to the conference. CRA encourages home departments to provide similar assistance to other students who are recognized.

CRA gratefully acknowledges the support of Microsoft Research and Mitsubishi Electric Research Labs (MERL) who sponsor the Outstanding Undergraduate Awards Program in alternate years. MERL is this year's sponsor.

Additional information about the nomination procedure and criteria for selection are available on the CRA website: <http://www.cra.org>. All nominations must reach CRA by **October 17, 2005**. ■

CRA to Release Cyberinfrastructure Report

The CRA report *Cyberinfrastructure for Education and Learning for the Future (CELf): A Vision and Research Agenda* is expected to be available in early September. This report is the result of a series of four workshops organized by CRA and the International Society of the Learning Sciences between September 2004 and March 2005, with support from the National Science Foundation. The purpose of the workshop series was to explore where we are in the application of pervasive computing power to education, and where we need to be. In particular, the intent was to develop a map of where NSF can strategically place its resources in creating the learning environments of the future.

The four workshops were: 1) Modeling, Simulation and Gaming Technologies Applied to Education; 2) Cognitive Implications of Virtual or Web-enabled Environments; 3) How Emerging Technology and Cyberinfrastructure Might Revolutionize the Role of Assessment in Learning; and 4) the Interplay Between Communities of Learning or Practice and Cyberinfrastructure.

Details of the release will be posted on CRA's website (<http://www.cra.org>).

Students Receive Awards



Pictured above are students who received CRA Outstanding Undergraduate awards 2005 at ACM's STOC Symposium in Baltimore on May 22, presented by Executive Director Andy Bernat. Left to right, Mihai Patrascu (MIT), Dmitriy Besspalov (Drexel), Dr. Bernat, Suporn Pongnumkul (Carnegie Mellon), Bogdan Caprita (Columbia), Amy Sliva (Georgetown), Li Yan (York University), and Jane Lin (Maryland, College Park).

Outstanding Undergraduate Award Presented



The winner of CRA's male Outstanding Undergraduate Award 2005 was Mihai Patrascu, Massachusetts Institute of Technology. Executive Director Andy Bernat made the presentation at the ACM Symposium on Theory of Computing (STOC) in Baltimore on May 22.

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Clemson University

Departments of Mathematical Sciences and Computer Science

Tenure-Track Positions

Clemson University invites applications for two tenure-track bioinformatics faculty positions starting with the Spring 2006 semester. These positions (one in the Department of Mathematical Sciences and one in the Department of Computer Science) are part of the University's commitment to build a high-quality research and education program in genomics where three new faculty members (bioinformatics, population genetics and functional genomics) will be added to 10 which have been hired in the past three years.

The Mathematical Sciences Department is a comprehensive department which includes the areas of statistics, probability, computational mathematics, mathematics education, operations research, analysis, algebra and discrete mathematics. Ph.D., M.S., B.S., and B.A. degrees are awarded in Mathematical Sciences with a possible concentration in Statistics, and there presently are 80 graduate and 100 undergraduate students in these programs.

The Department of Computer Science includes the areas of graphics and visualization, networking, programming languages, software engineering, and algorithms; the department, housed in a new building, has 20 faculty members, about 400 undergraduate majors, and over 100 graduate students. B.A., B.S., M.S., and Ph.D. degrees in Computer Science, B.S. degree in Computer and Information Science, interdisciplinary programs in E-Commerce and Digital Production Arts are offered.

The Departments are strongly committed to interdisciplinary research within the University with several active research teams, and the successful candidates should have strong interests and commitments to interdisciplinary research (with the genomics group), teaching both graduate and undergraduate courses, and supervising M.S. and Ph.D. students in their respective departments.

Targeted recruiting is for the assistant professor rank but applicants for all ranks will be considered. An earned doctorate or equivalent is required for the tenure track positions. Applicants should indicate their research specialties and interests in bioinformatics in their cover letter. Application should be sent (preferably electronically) to either:

mathsci@clemson.edu or
biocs@cs.clemson.edu

or by postal mail to either:

Faculty Search Committee
Department of Mathematical Sciences
Clemson University
Clemson, SC 29634

OR

Faculty Search Committee
Department of Computer Science
Clemson University
Clemson, SC 29634

Applications will be received until both positions are filled. All applications received prior to September 15, 2005 will receive full consideration.

Clemson University is an AA/EO employer and encourages applications from women and minorities.

Grinnell College

Department of Mathematics and Computer Science

Tenure-Track Faculty Position

Tenure-track position as Assistant or Associate Professor of Computer Science in the Department of Mathematics and Computer Science starting August, 2006. Ph.D. in computer science expected, with academic rank depending on experience (ABD considered as Instructor). Department seeks outstanding teacher-scholar, with no preference regarding specialty. Grinnell College, a highly selective liberal arts college, is committed to student-faculty research and is generous in its support of scholarship.

To apply, send a curriculum vitae, transcripts (copies acceptable), three letters of recommendation, and a statement describing your interest in developing as a teacher and scholar in an undergraduate liberal arts environment that emphasizes close faculty-student interaction and values diversity. The successful candidate will demonstrate an interest in participation in the College's general education offerings. Address applications to:

Henry Walker
Computer Science Search Committee
Department of Mathematics and Computer Science
Grinnell College
Grinnell, IA 50112-1690
Fax 641-269-4984; Phone: 641-269-4208

For more information, see <http://www.cs.grinnell.edu/2006-tenure-track-cs.html>, or send e-mail to cs-search@cs.grinnell.edu. Review of applications will begin November 15, 2005 and continue until the position is filled.

Grinnell College is an equal opportunity/affirmative action employer committed to attracting and retaining highly qualified individuals who collectively reflect the diversity of the nation. No applicant shall be discriminated against on the basis of race, national or ethnic origin, age, gender, sexual orientation, marital status, religion, creed or disability.

Harvard University

Radcliffe Institute for Advanced Study
Fellowships

The Radcliffe Institute for Advanced Study at Harvard University awards fully funded fellowships each year. Radcliffe Institute fellowships are designed to support scientists of exceptional promise and demonstrated accomplishment. Scientists, in any field, with a doctorate in the area of the proposed project by December 2004 are eligible to apply. Only scientists who have at least one published article or monograph are eligible to apply.

The stipend amount of \$55,000 is meant to compliment sabbatical leave salaries of faculty members. Fellows receive office space, computers and high speed links, and access to libraries and other resources of Harvard University during the fellowship year, which extends from early September 2006 through June 30, 2007. Residence in the Boston area is required as is participation in the Institute community. Fellows are expected to present their work-in-progress and to attend other fellows' events.

For more information, including lists of present and past fellows, visit our Web site at www.radcliffe.edu. Apply on-line or write, call, or e-mail for an application:

Radcliffe Application Office

34 Concord Avenue
Cambridge, MA 02138
617-496-3048
science@radcliffe.edu
www.radcliffe.edu

Applications from scientists must be postmarked by December 1, 2005.

North Carolina State University

Department of Computer Science

Department Head

The College of Engineering at North Carolina State University (NCSU) invites nominations and applications for the position of Department Head of Computer Science. The successful candidate will maintain the strong research and educational programs currently existing in the department, and will provide the leadership and vision to elevate its stature. The new Head should possess a demonstrated ability for leadership, management, administration, and effective communication with all stakeholders. The successful candidate will have a distinguished record and commitment to quality research, teaching, professional activities and overall excellence in academic scholarship. The new Head is expected to guide the department in directions that will enhance the success of its students, faculty, and staff as well as meet state and global needs.

The Department has 41 faculty members and a student body composed of about 800 undergraduate and 360 graduate students. Degrees offered include the BS, MS, Master of Computer Science, Master of Science in Computer Networking, and PhD degrees. The department's total annual research expenditures average between \$5-6 million. Of the 22 new faculty hired in the past 10 years, 14 have received NSF CAREER awards. Within a year, the Department will be relocating to a new engineering building, which will also house the Department of Electrical and Computer Engineering. The new building is located on NCSU's Centennial Campus, which also provides offices and laboratories for corporate and public organizations.

Areas of research strength within the Department include artificial intelligence, computer networking, operating systems, software engineering, and theory. In addition, the department's applied and multidisciplinary research strengths include bioinformatics, scientific computation, e-commerce and data mining. Organized multidisciplinary research activities supporting these areas of research include the Center for Academic Excellence in Information Assurance Education (with the Departments of Technology Management, Mathematics, and Electrical Engineering), the Center for Advanced Computing and Communication (with Duke University), the Center for Digital Entertainment (with the College of Art & Design), the Center for Embedded Systems Research, the Intellimedia Initiative (with the Department of Design and Technology), the Networking Technology Institute, the Scientific Data Management Center and The Privacy Place. Our faculty and students have access to outstanding infrastructure and research facilities, including the College of Engineering's Eos academic computing environment and the University's high performance and Grid computing facilities, as well as to a network infrastructure that is among the most extensive and advanced ones available for broad-based use

today, consisting of University-wide research and production networks, a campus-wide wireless infrastructure, and connections to the NCNI GigaPoP, Abilene, and National Lambda Rail.

North Carolina State University is located in Raleigh within the Research Triangle, which has a high concentration of corporate and public organizations that employ computer science graduates and provide partnering opportunities for the faculty. The area offers outstanding opportunities for professional growth and an exceptional quality of life. Qualifications for the position include an earned doctorate degree in Computer Science or a relevant discipline; an excellent record of scholarly and educational accomplishments; a demonstrated ability to attract and manage external research funding; and strong leadership skills.

The successful candidate is expected to be appointed to the rank of Professor, and to assume the departmental Head position on July 1, 2006. Nominations and applications should include a professional resume and at least four appropriate references. To ensure full consideration, applications must be received by August 1, 2005; however, applications will continue to be accepted until the position is filled. Please send nominations or applications to:

Chairperson, Computer Science Head Search Committee
Box 7904
NC State University
Raleigh, NC 27695-7904

Electronic applications with necessary attachments are also welcome. Applications, nominations, or additional inquiries may be sent to jsharpe@ncsu.edu. Summary information about the department can be found at www.cs.ncsu.edu.

North Carolina State University is an equal opportunity/affirmative action employer (OEO, AA) and welcomes all persons without regard to sexual orientation. Individuals with disabilities desiring accommodations in the application process should contact the committee [919-515-9952, jsharpe@ncsu.edu].

Rochester Institute of Technology

Computer Science Department

Chair

The B. Thomas Golisano College of Computing and Information Sciences (GCCIS) at RIT is pleased to invite applications for the position of Chair of its Computer Science department. The successful candidate will demonstrate:

- Academic and administrative leadership potential.
- Broad knowledge of computing and the central role of computer science.
- Comprehensive record of scholarly achievement.
- Strong commitment to both undergraduate and graduate education.
- Ability to contribute in meaningful ways to the Institute's commitment to cultural diversity and pluralism.

Candidates must have the credentials, experience, and achievements appropriate for appointment as Full Professor, including an earned Ph.D. in computer science or closely related area. The start date for this position is not later than July 1, 2006. Interviews will be scheduled beginning in September, 2005.

GCCIS is RIT's newest college at the 1,300-acre suburban university located south of Rochester, New York and just north of the beautiful Finger Lakes region. In addition to CS, the college is home to the Information Technology and Software Engineering departments and the Center for Advancing the Study of Cyberinfrastructure, the research arm of the college. All departments are housed

Professional Opportunities

in a new 126,500 square foot state-of-the-art facility. The college has proposed a new PhD program with close collaboration from its departments and the other colleges within RIT.

The CS department has 29 full-time faculty, 800 undergraduate students and 150 Master's level graduate students. The faculty is engaged in scholarly activities in data mining and discovery informatics, intelligent systems, complexity theory and cryptography, graphics, and distributed systems, among others. Detailed information can be found at <http://www.cs.rit.edu>.

Candidates are strongly encouraged to submit their applications electronically. Applications must include a summary of education and professional background, a list of publications, a summary of administrative, teaching and research experience, the names of three references, and a brief statement on the future strategic vision of computer science within computing alongside the disciplines of software engineering, computer engineering, and information technology.

Guy Johnson, Chair
CS Chair Search Committee
B. Thomas Golisano College of Computing and Information Sciences
Rochester Institute of Technology
102 Lomb Memorial Drive
Rochester, NY 14623
<http://www.rit.edu/~gccis>
Email: cssearch2006@gccis.rit.edu
Telephone: 585-475-2161
RIT is an Affirmative Action/Equal Employment Opportunity Employer.

Southern Illinois University, Carbondale

Computer Science Department
Faculty Position

Applications are invited for one tenure-track faculty position at the Assistant Professor level. The position will begin on January 1, 2006. Basic requirements include a Ph.D. in computer science or related field by date of hire, evidence of ongoing and future research, and teaching competency in a reasonable number of computer science subjects at both the undergraduate and graduate levels. Applicants with a research specialty in any area of computer science will be considered, however, priority will be given to an applicant with a research interest in computational sciences. Review of completed applications will begin on September 5, 2005 and continue until the position is filled. Applicants should send a letter of interest, curriculum vitae, and have at least three of your references send their recommendation letters directly to:

Faculty Search Committee
Department of Computer Science
Faner 2125 Mailcode 4511
Southern Illinois University
1000 Faner Drive
Carbondale, IL 62901

For more information about the Department of Computer Science, visit our web site at <http://www.cs.siu.edu>. Questions may be directed to the Faculty Search Committee, via: georgia@cs.siu.edu.

SIUC is an affirmative action/equal opportunity employer that strives to enhance its ability to develop a diverse faculty and staff and to increase its potential to serve a diverse student population. All applications are welcome and encouraged and will receive consideration.

Stanford University

Joint Electrical Engineering and Statistics Departments
Tenure-Track Faculty Position

Stanford University's Department of Electrical Engineering (<http://ee.stanford.edu/>) and Department of Statistics (<http://www-stat.stanford.edu>) are seeking applicants for a tenure-track faculty position in a research

area that explores novel interfaces between EE and Statistics. An emphasis of the search is in large-scale interacting stochastic systems such as random networks, graphs, and matrices. Application areas include: coding, array signal processing, high-dimensional statistical inference, machine learning, and genomic signal processing. Higher priority will be given to the overall innovation, originality, and promise of the candidate's work than to any specific sub-area of research. An earned Ph.D., evidence of the ability to pursue a research program, and a strong commitment to both graduate and undergraduate teaching are required.

A successful candidate will be expected to teach courses at the graduate and undergraduate levels and to build and lead a team of graduate students in Ph.D. research. The search is open at the junior tenure-track level (Assistant Professor or untenured Associate Professor). Applications should include a detailed resume (including academic transcripts for recent graduates), a brief research and teaching plan, and at least four reference letters. Applications arriving before January 10, 2006 will be given full consideration. All material should be mailed to:

Joint EE-Statistics Search Committee
c/o Corinne Barkow
Stanford University
350 Serra Mall, #167
Stanford, CA 94305-9510
or via electronic mail to: search@ee.stanford.edu.

Stanford University is an equal opportunity, affirmative action employer.

Stanford University
Department of Computer Science
Faculty Opening

The Department of Computer Science at Stanford University invites applications for a tenure-track faculty positions at the junior level (Assistant or untenured Associate Professor). We are seeking applicants from all areas of Computer Science, including Foundations, Artificial Intelligence, Graphics, Databases, Systems, Human Computer Interaction, and Networking. We are also interested in applicants doing research at the frontiers of computer science, for instance biological computing, bio-informatics, computation and arts, or computational economics. Higher priority will be given to the overall originality and promise of the candidate's work rather than the candidate's sub-area of specialization within Computer Science.

An earned Ph.D., evidence of the ability to pursue a program of research, and a strong commitment to graduate and undergraduate teaching are required. A successful candidate will be expected to teach courses at the graduate and undergraduate levels and to build and lead a team of graduate students in Ph.D. research. Further information about the Computer Science Department can be found at <http://cs.stanford.edu/>. The School of Engineering website may be found at <http://soe.stanford.edu/>.

Applications should include a curriculum vitae, brief statements of research and teaching interests, and the names of at least four references. Candidates are requested to ask references to send their letters directly to the search committee. Applications and letters should be sent to:

Search Committee Chair
c/o Laura Kenny-Carlson
Stanford University
Gates Hall 278
Stanford, CA 94305-9025
or via electronic mail to: search@cs.stanford.edu

The review of applications will begin on January 3, 2006, and applicants are strongly

encouraged to submit applications by that date; however, applications will continue to be accepted until February 1, 2006.

Stanford University is an equal opportunity, affirmative action employer.

Texas A&M University
Department of Computer Science
Tenure-Track Faculty Positions

Applications* are invited for tenure-track faculty positions, starting fall 2006, in the Department of Computer Science of the Dwight Look College of Engineering at Texas A&M University. As part of a long-term plan to increase the size and improve quality, the department is expanding in the following areas: Software Information Storage & Retrieval Systems Biology – Full Professor.

Candidates seeking an assistant or associate professor position are welcome to apply for the software and information storage & retrieval areas. Top candidates in other areas will also be considered. Candidates must have a Ph.D. degree and will be expected to teach, perform research, and supervise graduate students.

The Department of Computer Science has 36 tenure-track faculty and 5 senior lecturers. Texas A&M University CS faculty members are well recognized for contributions to their fields. The department currently has one National Academy of Engineering member, five IEEE Fellows, one ACM Fellow and ten PVI/NYI/CAREER awardees. In 2000, four faculty members received the IEEE Third Millennium Medal. Additional information about the department can be found at www.cs.tamu.edu.

Texas A&M University CS faculty applicants should apply online at: apply.cs.tamu.edu/tenuretrack
For questions about the positions, contact: bio_search@cs.tamu.edu, info_search@cs.tamu.edu, or software_search@cs.tamu.edu.

* Applications are welcome from dual career couples.

Texas A&M University is an equal opportunity/affirmative action employer and actively seeks candidacy of women and minorities.

University of California, San Diego

California Institute of Telecommunications & Information Technology
Asst/Assoc/Full Research and/or Project Scientist

The California Institute for Telecommunications & Information Technology [Calit2] (www.calit2.net), an Organized Research Unit at the University of California, San Diego, invites applications for an Academic position at the Assistant, Associate or Full Professional Research Scientist and Project Scientist level. Fields of interest include, are not limited to Electrical Engineering and computer Science. Applicants engaged in research and having a specialization in Wireless Communications & Applications and interdisciplinary studies will be given strongest consideration. Exceptional candidates in all other areas will be given serious consideration.

Applicants must hold Ph.D. degree and will be expected to conduct an extramurally funded research program and participate in administrative functions of the unit and the University. Assistant-level candidates will be expected to show evidence of their potential through letters of recommendation and a publication record appropriate for their experience. Associate and Full-level candidates must show evidence of a strong research record in the specialization.

The level of appointment will be commensurate with qualifications and experience. Salary will be based on published UC pay scales. Review of applications will begin September 30, 2005 and will continue until filled. To apply, send a detailed resume,

personal statement summarizing research experience and interests, copies of selected recent publications and names and addresses of at least three references to:

Megan Laver
Academic Research Coordinator
Calit2, UCSD Division
9500 Gilman Drive 0436
La Jolla, CA 92093-0436
melaver@ucsd.edu

Email is preferred but hard copies may also be sent to the address above.

UCSD is an Equal Opportunity/Affirmative Action Employer with a strong institutional commitment to excellence through diversity.

University of California, Santa Barbara

Computer Engineering Program / ECE Department

Tenure-Track Faculty Position

The Electrical & Computer Engineering Department at the University of California, Santa Barbara invites applications for a tenure-track opening in the field of Computer Engineering. The CE Program places a strong emphasis on teaching, applied and basic research, and interdisciplinary research programs.

Applicants with a wide range of interests in Computer Engineering are encouraged to apply. The department is especially interested in candidates who can contribute to the diversity and excellence of the academic community through research, teaching and service. For more information regarding the position and areas of interest go to:

www.ce.ucsb.edu/facultypositions.

Please submit your application materials including CV and four professional references to:

employment@ce.ucsb.edu.

UCSB is an equal opportunity, affirmative action employer.

University of the District of Columbia

School of Engineering and Applied Sciences

Multiple Positions

The University of the District of Columbia is the only urban land-grant university in the country and is classified as a Historically Black College and University. The University is located in the NW area of the Nation's Capital and is surrounded by Embassies and a prime residential and business district. The School of Engineering and Applied Sciences offers ABET-accredited BS programs in Civil, Electrical, and Mechanical Engineering, as well as AAS programs in Architectural and Electronics Engineering Technology. These are in addition to programs in Aerospace Technology, Architecture, Computer Science, Information Technology, and Fire Science Administration. The School invites nominations and applications for two positions:

Chair, Department of Computer Science and Information Technology

Candidates must have an earned doctorate in Computer Science or closely related field and a strong record of teaching, research, and scholarly activities commensurate with appointment at the rank of associate professor or professor. This is a tenure-track position. A thorough knowledge of the accreditation criteria of the Computing Accreditation Commission of ABET is required. Candidates should have a strong commitment to undergraduate and graduate teaching. The successful candidate must have exceptional interpersonal communication and management skills necessary to promote programs and to sustain strong student enrollment as well as to implement a graduate program.

(cont'd)

Professional Opportunities

Assistant/Associate Professor of Information Technology

Rank will be based on qualifications and experience. Duties include teaching and supervision of laboratories at the undergraduate and graduate levels in the CSIT Department. Additional duties include developing proposals for funding in support of the instructional mission and research as well as involvement in student advising and retention. Qualifications preferred are a Ph.D. in Computer Science/Information Technology or a closely related field and related certification. The candidate should be current and active in the discipline, with competence in core information technologies including programming, computer networking and hardware, information security, databases, and web technologies. Experience with CAC/ABET accreditation, student recruitment and retention, and demonstrated efficiency in curriculum development will be a plus.

Candidates should send curriculum vitae and arrange for three letters of reference to be sent directly to:

Ms. Evelyn Whigham, Office of the Dean
School of Engineering and Applied
Sciences
4200 Connecticut Avenue, NW
Washington, DC 20008
or e-mail to ewhigham@udc.edu.

The positions will remain open until filled.

The University of the District of Columbia is an equal opportunity employer. Minority and female candidates are especially encouraged to apply. Additional information on the university is available at www.udc.edu.

The University of Edinburgh School of Informatics

ITI Chair in Informatics and e-Health

The School of Informatics is one of the top five centres in the world for research and teaching in computation, information and cognition. As a result, we attract top-level staff and students from across the globe, and our work promotes interdisciplinary research across the University.

The University of Edinburgh has launched a far-reaching initiative in e-Health, founded on the strengths of its School of Informatics, and College of Medicine and Veterinary Medicine.

We seek an outstanding individual, recognised for research contributions to a relevant area of Informatics, who will, in collaboration with the ITI Techmedia, co-ordinate and promote an integrated programme of activities—research, training, and dissemination—in Health Informatics. You will work closely with colleagues in the College of Medicine and Veterinary Medicine to deepen the already rich collaboration with Informatics.

The first three years of this appointment are sponsored by ITI Techmedia. During the sponsorship period you will not, without further agreement, be engaged in teaching or

related departmental administrative duties. The salary will be in the professorial range.

Apply online, view further particulars or browse more jobs via the 'ITI Chair in Informatics' link on our website:
(<http://www.inf.ed.ac.uk>).

Alternatively, telephone the recruitment line on +44 (0)131 650 2511. Ref: 3004666

Informal enquiries can be made by contacting the:

Head of the School of Informatics
Professor Michael Fourman
Tel.: +44 (0)131 650 2691
Fax: +44 (0)131 651 1426
Email: hod@inf.ed.ac.uk
Closing date: 15 September 2005.

University of Maryland University College

Computer Science Department Faculty - Multiple Positions

University of Maryland University College (UMUC) is a visionary institution on the forefront of education for the 21st-century workforce. We are an entrepreneurial and creative institution, committed to the exploration of knowledge, the construction of partnerships, and innovative academic delivery. We are a large and diverse institution, serving over 100,000 students around the world. Due to the rapid growth in student enrollments, we have opportunities for innovative adjunct faculty who value excellence in teaching and lifelong learning.

Why UMUC?

UMUC is one of 11 degree granting institutions in the University System of Maryland. The institution is well established with more than 50 years of experience fostering the highest academic standards. UMUC is a global leader in online education. We are student focused and academic driven. UMUC's faculty is unique in that most are working professionals who bring current expertise in their fields, as well as an impressive academic background, to the classroom. Our faculty receives an extraordinary amount of support in training and resources to help them address the specific needs of both the online classroom and the adult learner. This means ongoing support and collegial sharing. Additionally, UMUC faculty enjoy the benefits of a teaching schedule that fits into their professional life, competitive pay that rewards their expertise, and interaction with highly motivated, employed adult students.

Successful candidates will have a terminal degree (in Math or Computer Science field), or two or more graduate degrees with at least 3 years' Information Systems and professional experience in the information assurance arena for security-related courses. The position requires a minimum of two years teaching experience, ideally involving teaching working adults in a classroom or online environment. To qualify you must have authorization to work in the U.S. on an unrestricted basis.

Please visit our website to apply online. Include cover letter and contact information for three references. Use Job Code CSC004. www.umuc.edu/faculty. Review of applications is ongoing until positions are filled.

www.umuc.edu/faculty
Faculty Recruitment
University of Maryland University College
3501 University Blvd. East
Adelphi, MD 20783
EOE/MC/V. Women and minority applicants are strongly encouraged to apply.

University of Nevada, Reno Department of Computer Science and Engineering

Tenure-Track Position

Applications are invited for a tenure-track Assistant Professor position beginning in August 2006. A Ph.D. in Computer Science or Computer Engineering is required by the date of appointment. Candidates should possess a demonstrated potential and strong commitment to quality research and teaching at the undergraduate and graduate levels. Candidates having primary interest in computer engineering and those with expertise and strength in one or more of the areas of embedded systems, integrated circuit design, operating system and networking may be given preference.

The department is dynamic and growing and offers the BS, MS, and Ph.D. degrees. For complete position announcement and requirements, see <http://jobs.unr.edu>, visit www.cse.unr.edu or email sharon@cse.unr.edu for further information.

The Reno area has four mild seasons and is a scenic half-hour drive to Lake Tahoe, one of the largest and most beautiful alpine lakes on the planet. The Pacific Crest Trail is nearby for hiking and fantastic ski areas abound. San Francisco and the Silicon Valley are within a short half-day's drive.

To apply, send a letter and vitae, and have 3 letters of reference sent to:

Search Committee Chair
Computer Science and Engineering/171
University of Nevada, Reno
Reno, NV 89557
Review of applications will begin February 15, 2006.

EEO/AA

University of Pennsylvania Department of Computer and Information Science

Faculty Positions

The University of Pennsylvania invites applicants for tenure-track appointments in both experimental and theoretical computer science to start July 1, 2006. Tenured appointments will also be considered. Faculty duties include teaching undergraduate and graduate students and conducting high-quality research.

Successful applicants will find Penn to be a stimulating environment conducive

to professional growth. The Department of Computer and Information Science is undergoing a major expansion, including new faculty positions and a new building, Levine Hall, which was opened in April 2003. Over the last few years, we have successfully recruited faculty in artificial intelligence, computer architecture, databases, machine vision, programming languages, and security. We are now especially interested in candidates in graphics and animation, systems and networking, bioinformatics and computational biology, and computational linguistics, although outstanding candidates in other areas might also be considered.

The University of Pennsylvania is an Ivy League University located near the center of Philadelphia, the 5th largest city in the US. Within walking distance of each other are its Schools of Arts and Sciences, Engineering, Medicine, the Wharton School, the Annenberg School of Communication, Nursing, Law, and Fine Arts. The University campus and the Philadelphia area support a rich diversity of scientific, educational, and cultural opportunities, major technology-driven industries such as pharmaceuticals, finance, and aerospace, as well as attractive urban and suburban residential neighborhoods. Princeton and New York City are within commuting distance.

To apply, please complete the form located on the Faculty Recruitment Web Site at:

http://www.cis.upenn.edu/positions/faculty_application.html

Electronic applications are strongly preferred, but hard-copy applications (including the names of at least four references) may alternatively be sent to:

Chair, Faculty Search Committee
Department of Computer and Information Science
School of Engineering and Applied Science
University of Pennsylvania
Philadelphia, PA 19104-6389

Applications should be received by January 15, 2006 to be assured full consideration. Applications will be accepted until positions are filled. Questions can be addressed to:

faculty-search@central.cis.upenn.edu.

The University of Pennsylvania values diversity and seeks talented students, faculty and staff from diverse backgrounds.

The University of Pennsylvania does not discriminate on the basis of race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, or status as a Vietnam Era Veteran or disabled veteran in the administration of educational policies, programs or activities; admissions policies; scholarship and loan awards; athletic, or other University administered programs or employment. The Penn CIS Faculty is sensitive to "two-body problems" and would be pleased to assist with opportunities in the Philadelphia region.

Where is Your Office Anyhow? from Page 2

why can't faculty run their research group meetings the same way? Not all meetings with students have to happen in person; college faculty could conduct some "one-on-ones" remotely (it would be a good industry learning experience for the students). Just as Sun's program expects employees to be available at times worked out with their managers, academia could have similar expectations for remote faculty. If industry can run successful

team projects with participants in India, China, the U.S., and the U.K., surely academia can learn to work with professors who are remote three days a week. (Note the two days in the office shouldn't be fully scheduled, e.g., some meetings can happen remotely. Time for informal interactions—for the random conversation over tea and the chance encounter in the hallway—should be nurtured.)

The problem of the lack of women in science and engineering research has myriad causes.³ In order to make work from home

effective, Sun built the necessary social and support infrastructure into its program. Similarly, our colleges and universities should be using creativity and energy to increase the participation of women in science and engineering. Enabling geographic flexibility for faculty and students is one more tool that academia can use to fuel that increase.

End Notes

¹S. Landau, "Universities and the Two-Body Problem," *Computing Research News*, March 1994, p. 4.

²Ann Gibbons, "Key Issue: Two-Career Science Marriage," *Science*, March 13, 1992, pp. 1380-1381.

³See, for example, the recent report of the Harvard Task Force on Women in Science and Engineering, <http://www.news.harvard.edu/gazette/2005/05.19/01-taskforce.html>, which gives recommendations for all steps of women's careers: undergraduates, graduate students, postdocs, and junior and senior faculty.

Susan Landau (susan.landau@sun.com) is a Distinguished Engineer at Sun Microsystems Laboratories, and a member of CRA-W. ■