Senate Spending Bill Provides Substantial Increase for IT Research

By Lisa Thompson

Once again, the Senate Appropriations Committee has come to the rescue of the National Science Foundation, adding considerable funds to the House’s budget recommendations for the agency (detailed in September CRN). The Senate version of HR 4635, the FY 2001 VA, HUD, and Independent Agency Appropriations bill, would provide NSF with $4.3 billion for the year. While this is less than the $4.6 billion the agency requested, it represents a 9 percent increase above the FY 2000 budget and a significant improvement on the measer 3 percent increase included in the bill passed by the House. Moreover, the Senate bill calls for a 140 percent increase in funding for information technology research: ITR is currently funded at $90 million and would get an additional $125 million for FY 2001. The Senate measure would also reauthorize the requested $45 million in second-year funding for Teracale Computing Systems.

The Senate committee report accompanying the bill specifies: “To further NSF’s major initiatives, the Committee recommends an additional $125,000,000 in new funding to enhance its computing and information science and engineering activities consistent with the President’s Information Technology Advisory Committee’s recommendatons in its February 1999 report. These additional funds would increase the level of support for the information technology initiative to $235,000,000. As prescribed in the PITAC report and the fiscal year 2000 conference report accompanying the VA, HUD, and Independent Agency Appropriations Act (House Report 106-379), the Committee expects NSF to provide an increased ratio of grants at higher funding levels and for longer duration than what is typically funded. Further, the Committee encourages NSF to continue its efforts under the Next Generation Internet program in providing high-speed networking access to remote and hard to reach areas, especially in rural States.”

None of this is final as of press time; the full Senate has yet to consider the bill. In fact, the President had signed only 3 of the 13 appropriations bills when the fiscal year began on October 1, 2000. While several bills are on track toward completion, a few others, including the VA-HUD bill, are stalled by partisan stalemate, particularly in the Senate. Nevertheless, on those bills in which congressional leaders have been able to cut deals with the President, significant funds had to be added to appease both sides. The Republicans, who earlier this year swore to hold fast on the budget, are clearly yielding to election-year expediency and a President who remains strong despite his lame-duck status.

While disputes over funding for housing and other programs prevent progress on the VA-HUD bill, Senate support for expanding the NSF budget has not been difficult to come by. In August, the Chairman and Ranking Democratic Member of the VA-HUD subcommittee, Christopher Bond (R-MO) and Barbara Mikulski (D-MD), respectively, issued a “Dear Colleague” letter calling for the doubling of the NSF budget over five years. A Dear Colleague letter is like a petition, circulated for signature among legislative colleagues and ultimately presented to the congressional leadership; the more signatures, the better.

The Bond-Mikulski letter attracted nearly 40 signatures, including that of the Chairman of the full appropriations Committee, Ted Stevens (R-AK). In the meantime, one of the intended recipients, Majority Leader Trent Lott (R-MS), along with three GOP colleagues, wrote a letter to Chairman Stevens urging him to ensure strong support for NSF in FY 2001 appropriations. In their letter, Senator Lott and his co-writer cite NSF’s IT research activities as a key area of interest: “Programs at the NSF address many of the longer-term research needs of the high-tech community. For example, the Information Technology Research Initiative at NSF will fund research in several critical areas: software, which is of paramount importance; building and enhancing computer and communications infrastructure; and expanding the use of high-speed networks. These initiatives are not only critical to America's global R&D arm and will attract strong leadership; the more signatures, the better.”

Mitsubishi Electric Research Laboratories

By Richard (Dick) Waters

Mitsubishi Electric Research Laboratories (MERL) is the corporate R&D arm of MELCO in North America. MELCO is a diversified manufacturer of electrical products ranging from air conditioners, auto parts, elevators, and TV to optical fiber networks, cell phones, semiconductors, and satellites. MELCO shares historical roots in 19th-century Japan with other Mitsubishi companies such as Mitsubishi Heavy Industries and Mitsubishi Motors, but has been a separate company since its founding in 1925.

MERL conducts application-oriented basic research and advanced development in computer and communications technology. We seek to contribute to the advancement of science and to meet human needs by creating new technologies that expand the productive use of computers. Our vision is both long-term and market-driven. We seek to anticipate and then meet market needs and business opportunities. This means exploring entirely new possibilities as well as improving what is now possible. Because computer and communication technology affects nearly every aspect of modern life, and because MELCO is a broadly diversified company, there are many opportunities for our research results to contribute to MELCO’s business success.

MERL focuses on three key technology sectors: human/computer interaction featuring advanced graphics and computer vision technologies; Internet computing and applications; and digital communication. Each of our labs focuses on specific segments of these technologies, while working collaboratively to achieve groundbreaking results. Our output ranges from papers and patents, through proof-of-concept hardware and software prototypes, to industry-first products.
Expanding the Pipeline

The Undergraduate Experience at the Grace Hopper Conference

By Joan Francioni

The Grace Hopper Celebration of Women in Computer Science Conference brings together women who are developing, advancing, and studying computer science and computing to celebrate the accomplishments of women in computing. At the same time, the meetings provide an important training and networking opportunity for women. Telle Whitehill, general chair of this year’s conference, pointed out that the conference “is especially committed to including the next generation of women in its programs.”

A large number of students attended the third Grace Hopper Celebration in September. Many were supported, in part, by the more than 130 student scholarships awarded by the conference. Was the conference a positive experience for the students? In particular, what kind of experience did they have? Did attending the conference increase the chances of these young women staying in computer science and possibly going on to graduate school, or not?

In this article, I report on the experiences of seven undergraduate women who attended this year’s Grace Hopper Celebration. Overall, all seven reported that the conference was a positive experience. However, not everyone was comfortable about the conference being positive for them, and some aspects of the conference affected them in ways one might not have expected.

The four sophomores and three seniors attend small, liberal arts, undergraduate institutions. It was their first professional conference. The students attended both the keynote address by Dr. Rita Colwell, president of the National Science Foundation, and the closing panel session of experts. The panel was moderated by Dr. Mora Gunn of the National Public Radio’s Tech Nation, and included Barbara Simons, past President of ACM, Fran Ailien, IBM; Ruth Davis, Santa Clara University; Mary Shaw, Carnegie Mellon University; and Suze Woolf, Microsoft. The students also attended other panels and receptions over the course of the two and a half days of the conference. Upon returning to school, they were asked to write up a report describing their experiences.

All of the students recognized tangible benefits from hearing presentations given by accomplished women in the field. For one, they were impressed with the women: “I was completely in awe of their pioneering spirit, their ability to hold their own in a male-dominated field, their enthusiasm and zeal for the subject.”

“A lot of the presenters were very optimistic and inspiring about the future of women in computer science.” A notable benefit was that the students were able to see themselves in these women:

“They used to be students too and now they have great careers.”

“It was fun even just to know that they actually have families and are not just different from other women. My previous imagination was far from that.”

The students also described how listening to the presenters and interacting with other women at the conference increased their own self-confidence. One student commented:

“Everyone I met had been in my shoes at one point or another. By seeing so many women who have already accomplished what I aspire to someday do, I gained a lot of self-confidence.”

One of the seniors, with a near 4.0 GPA, said:

“Listening to many of the speakers speak about the common problems girls face in this field, I realized that I was not alone in my fear that I know less than the boys in my class.”

A primary theme of the conference was the connection between computing and other fields. This exposure to a wide variety of fields and topics was very positive for the students. One interesting observation related to this is that the three seniors had all previously participated in summer internships—one at IBM— Rochester and two at the Mayo Hospital Clinic. A through these internships had exposed the students to “real world” jobs, they had also convinced them that there was a relatively narrow path to be followed in a computer science job. Their conference experience completely changed this opinion. For example:

“Afer attending a few of the talks, I realized there were many different options and paths that I could take in continuing my education while working in industry. I also was exposed to a wide variety of fields and topics that I found fascinating. After attending a talk, I actually had an idea of what I would like to do research in.”

“Many of the talks so piqued my interest that going to graduate school in computer science seems like a viable option.”

“But now, after being made aware of the many ways that technology can help improve people’s lives, I see a path which may be the golden mean for me—a way to play with my abilities and interests to realize my ideal.”

A more subtle benefit of the conference was the support the students felt at the conference for what they were trying to do. A senior student said:

“At the conference, it was great to be among a group of women who believed in us and expected us, as students, to do well.”

Often, the students told me, people either act surprised that they do well in computer science or treat them as “nerds”.

On the negative side, one of the sophomores said that at the conference she felt a lot of pressure to stay in computer science and that she felt “I was the only one from my major who had any such concern.” The students also shared some of the re- tremors of their experience: “I was more more studies were invited, not that attendance required an invitation.” In some cases, they attended talks that were not yet real- enough, in some cases, they felt confident enough to speak up at the meeting and convince them to consider doing so. As a result, the students learned that the conference was a positive experience for the students. They felt that the conference increased the chances of these young women staying in computer science and possibly going on to graduate school.

The students were able to see themselves in these women:

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CRA presented its 2001 service awards at the Grace Hopper Celebration of Women in Computing Conference on Cape Cod in September.

CRA presents two awards, usually annually, to individuals for outstanding service to the computing research community. The first, the Distinguished Service Award, recognizes service in the areas of government affairs, professional societies, publications, or conferences, and leadership that has a major impact on computing research.

The second award honors the late A. Nico Habermann, former head of NSF’s Computer and Information Science and Engineering Directorate. Dr. Habermann was deeply committed to increasing the participation of women and underrepresented minorities in computing research. This award is given to an individual who has played a leadership role in aiding members of underrepresented groups within the computing research community. It recognizes work in areas of government affairs, educational programs, professional societies, and public awareness.

CRA Distinguished Service Award

Marjory Blumenthal, Executive Director of the National Research Council’s Computer and Telecommunications Board (CSTB), was selected as the 2001 CRA’s Distinguished Service Award. For 2001. Mary Lou Soffa, Vice Chair of the CRA Board, presented the award.

For the past 13 years, under Marjory’s leadership, CSTB’s work has been influencing public policy in information technology. CSTB has produced about 50 reports that contribute in one way or another to the health of the computing field, and to its visibility in government circles. A few recent examples of reports that have had an impact include: The Digital Dilemma: Intellectual Property in the Information Age; Being Fluent With Information Technology: Modeling and Simulation: 0 opportunities for Collaboration Between Defense and Entertainment; Cryptography’s Role in Securing the Information Society; and Evolving the HPCC Initiative to Support the National’s Information Infrastructure.

Marjory’s vision and commitment to quality, and her track record of hard work, dedication, and determination, have earned her and CSTB the respect of the computing community.

Marjory did her undergraduate work at Brown University and her graduate work at Harvard University as an NSF fellow. She was a project director at the Congressional Office of Technology Assessment, and later worked for GE Information Services as Manager of Competitive Analysis and Planning. In 1998, Marjory spent a sabbatical as a Visiting Scientist at MIT LCS, where she developed and taught a course on public policy for computer science graduate students.

Marjory is a member of the Santa Fe Institute Science Board, the Advisory Board of the Pew Internet & American Life Project, the Carnegie Endowment for International Peace Study Group on the Information Revolution and World Politics, and the ACM, AEA, and IEEE. A digital biographical information is available on the Web at http://www.cstb.org.

CRA A. Nico Habermann Award

Anita Borg, President of the Institute for Women and Technology, received CRA’s A. Nico Habermann Award for 2001. Jan Cuny, a CRA Board member and chair of the Habermann Award Committee, presented the award.

For more than 15 years, Anita has worked tirelessly to create a community of women in computer science. She has encouraged women to make connections, give and receive advice, exchange information, develop their own strengths, and reduce their sense of isolation. Among Anita’s accomplishments is the Systems Electronic Mailing List. For 10 years, Anita was the Keeper of Systers, moderating its discussions, developing web-based information and communication technology to support it, and nurturing its community.

A major achievement is the Grace Hopper Celebration of Women in Computing, which Anita co-founded with Ted de Witkey to highlight the research of women, build community, and provide career development opportunities.

More recently, Anita founded the Institute for Women and Technology, a non-profit institution with two visionary goals: to increase the participation of women in all aspects of technology and to increase the positive impact of technology on the lives of women. IW T has assumed responsibility for Systers and the Grace Hopper Celebration and has launched a new initiative, called Virtu: 370,000 Participants, in which ideas generated in exploration and innovation events are applied in prototyping by faculty, students, and professionals.

Anita has served on a variety of boards and committees, including the recent Congressional Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology; the National Academy of Engineering Celebration of Women in Engineering Steering Committee; the National Research Council Committee on Women in Science and Engineering, the CRA Board; and CRA-W.

Anita Borg has a Ph.D. in Computer Science from the Courant Institute of Mathematical Sciences, New York University. Since 1997 she has been a member of the research staff at Xerox PARC. Prior to joining Xerox, she was a consulting engineer with Digital Equipment Corp. A digital biographical information is available on the Web at: http://www.iwt.org/borg.html.

Results of Third Salary Survey of CS Industry Research Labs

By William Gear

In October 1999, CRA conducted its third Industrial Salary Survey of CS Research Laboratories. Twelve organizations representing 3,786 researchers responded. Of these researchers, 91 percent held Ph.D.s. (Eleven of the organizations are members of CRA.) T he companies that participated received an early summary of the data in November 1999, followed by a detailed analysis in February 2000. The results are summarized in the graph below, which compares the data with those of the most recent Taulbee Survey of Academic Salaries (CRN, March 2000).

The survey covered Ph.D. CS researchers. The respondents were asked to provide minimum, average, and maximum salaries when starting and after four additional five-year periods. CRA computed the averages of these numbers, shown in the graph. The respondents provided data about base salary (the annual salary independent of items such as bonus and options) and variable salary (which includes items such as bonuses and the value of stock options that respondents were asked to estimate). Note that, in this year’s survey, the high value of options reported by few respondents had a significant effect on the average salaries and a major impact on the numbers reported for average maximum salaries. Without the variable salary data, the average base salaries ranged from $20,000 to $27,000 lower; the average minimum base salaries ranged from $3,000 to $15,000 lower, and the average maximum salaries ranged from $20,000 to $40,000 lower.

Because companies provide annual adjustments at different times of the year, respondents were also asked to indicate the month in which annual salary adjustments were made. In order to compare these results with the Taubee Survey of tenure-track academic CS salaries (which are almost always for the period in September through August), the Survey Continued on Page 23.
In spring 2000, the Computing Research Association conducted its second survey of North American Ph.D.-granting programs of computer science and engineering to collect data on the amount of external funding. Overall, the survey included 212 responding units in the United States, with 88 out of 158 programs reporting the survey. The survey was sent to 186 Ph.D.-granting programs in computer science and computer engineering. Because the response from Canadian programs and computer engineering programs was both small and unrepresentative, their data were not included in this report. The response rate for US programs was 55.7 percent, with 86 out of 158 programs responding to the survey.

The US CS programs are divided into four groups according to the most recent national Research Council ranking: departments ranked 1 to 12 (6 responses); departments ranked 13 to 24 (9 responses); departments ranked 25 to 36 (10 responses); and departments ranked 37 or higher (46 responses). In a separate analysis, we divided the US CS programs into categories according to whether the corresponding institutions are public (64 responses) or private (24 responses).

### Support Staff

Table 1 presents the mean and median ratio of the number of secretaries, computer support staff, and research programmers to the number of full-time equivalent (FTE) faculty for all categories of programs described above. Private, funded institutions have generally lower ratios of staff support per FTE than institutions that are publicly supported, and staff ratios generally increase as one moves from lower to higher ranked departments. Table 2 shows the percentage distribution of sources of support for department staff (means over all responding units in each group).

### Budget

Table 3 presents the mean and median annual expenditure per faculty member (in thousands of U.S. dollars). The variation between the categories is extremely wide. For example, the median department expenditure per FTE for a program ranked 37 or higher is more than 60 percent lower than the same measure for programs ranked 13 to 24. Some of the variation may be due to differing interpretations of the survey question.

Table 4 summaries the survey data on the amount of external funding per FTE faculty member. There is a significant difference between private and public institutions and between top-ranked department and department rank 37 and above.

Table 5 illustrates the role of various funding agencies in providing external research funding. Overall, NSF and DARPA provide about 50 percent of research funds, but the breakdown varies significantly across the groups of programs. NSF provides the highest proportion of funding in all program groups. DARPA plays a significant role in funding for programs ranked 1 to 12. In other programs, sources other than DA RA play a more important role in supporting research.

### Space

Table 6 summarizes the survey data on departmental space. There are significant differences between US private and public institutions, and between top-ranked US departments and those ranked 37 and higher. For example, the category means suggest that private institutions have nearly 35 percent more space per faculty member than public institutions. (If category medians are used, the corresponding margin is 20%.) Significant differences appear when data for department ranking are used. For example, departments ranked 1 to 25 report approximately 1300 sq. ft. per FTE faculty member (using median data), while departments ranked 37 and up report 1035 sq. ft. per FTE.

In the survey, we also asked about the use of departmental space. Since we found no clear trends as a function of type or ranking, the average space use per FTE is reported in Table 7. The survey indicates significant activity and respect to recent or forthcoming space allocated to US computer science departments. More than half (51%) of the US departments expect to gain new or newly renovated space, and 81 percent of these departments expect to have the new space by the end of 2003. The amount of the anticipated new space ranged widely (median 20,800 sq. ft., mean 31,503 sq. ft.). Department rank played a major role: the mean anticipated space was 62,713 sq. ft. for departments ranked 1 to 36, and 18,299 sq. ft. for departments ranked 37 or higher.

The survey asked respondents to indicate sources of funding for newly acquired or renovated space. The responses are summarized in Table 8. The data also show that while variation in net stipends between public and private institutions or between institutions of different rankings.

### Teaching Loads

Data submitted from departments using the quarter system were converted to semesters (1 semester course = 0.67 semester course). An official annual teaching load of between 2 and 3 semester courses was reported by 52 percent of the respondents, and an additional 35 percent of the respondents reported an official load of between 3 and 4 semester courses. The minimum reported was 1.33 and the maximum was 8.67 semester courses. In Table 9, the data indicate that both official and actual teaching loads are fairly strongly correlated with department rank. Teaching loads reported by departments at public universities are lower than those reported by departments at public institutions.

### Research Expenses

Of the departments that responded to the survey, 93 percent permit teaching-load reductions. Of these departments, 85 percent allow for reduction as part of startup packages for new faculty members. Other reasons commonly cited for load reductions are: administrative duties, course output, strong research programs and type and size of class (cited by 88%, 78%, 37%, and 28% of the departments respectively). The average reported buyout was 22 percent of annual salary; the median buyout rate reported was 20 percent.

Of the departments that responded to the survey, 72 percent permit teaching-load increase of those reporting. 78 percent reported 1.5 hour increase in primary responsibility to teaching as the reason for the increase.

### Graduate Student Support

For 84 percent of US programs, the standard work requirement for teaching assistants is 20 hours/week, with the mean being close to 20 hours/week for all categories of programs. For research assistants, 88 percent of the US programs report 20 hours/week as the standard work requirement. There were no significant differences between public and private institutions or between institutions of different rankings.

Table 10 gives the number of TAs and RAs per FTE faculty member. The TA ratio was higher for public institutions, while the RA ratio was higher for private institutions. Highly ranked programs also tended to have higher ratios for both TAs and RAs. Table 10 gives the number of students on full fellowship to the number of FTE faculty. This ratio is higher for private institutions than for public ones, and, once again, highly ranked programs tended to have higher ratios.

The survey also asked for the net value of stipends (stipend minus tuition and fees for teaching assistants, research assistants, and those with fellowships). The mean and median net stipends are shown in Table 11. Once again, there is some variation in net stipends between public and private institutions, and also among programs of different rank. The data also show that while TA stipends do not differ much from RA stipends, both are lower than fellowship stipends.

In response to a survey question on factors affecting the amount of the stipend, academic progress was given the highest percentage (57%). Other commonly reported factors are: passing/qualifying (24%), student contributions (23%), and teaching (20%). The survey provided interesting insights into recruitment incentives used to attract new graduate students. Stipend enhancements were reported by 45 percent of the US programs. The mean and median amounts were $1,954 and $2,300 respectively.
NSF Funds National Study of Gender Gap in Attrition from Undergrad CS

By Joanne McGrath Cohoon

The National Science Foundation is funding a nationwide study of the characteristics and practices of computer science departments. The goal of this research is to identify departmental features that influence the disproportionate loss of undergraduate women from IT majors. The study results will help determine effective methods for retaining female students in undergraduate computer science.

This project is based on a pilot study conducted in Virginia and funded by the Alfred P. Sloan Foundation. The Virginia study documented that some computer science (CS) departments retain their female undergraduates at rates similar to those of male undergraduates. These successful departments contrasted with the average Virginia CS department where the attrition rate was 9 percent higher for women than for men.

The study used three types of data and both quantitative and qualitative analyses. The Virginia study found that four departmental characteristics and practices affect the loss of the gender gap in departments' attrition rates: 1) the gender composition of the faculty and students; 2) faculty attitudes and behaviors; 3) institutional support for the department; and 4) the local job market.

Every Virginia department that awarded Bachelor's degrees to both men and women between 1992 and 1997 participated in the pilot study. Of the data from the State Council for Higher Education in Virginia were used to calculate attrition rates by gender for each department in the study. These rates measured the size of the gender gap as the average annual difference in male and female attrition rates over a five-year period.

The other two data sources for the Virginia pilot were interviews and a written survey. Twenty-nine personal interviews with chairpersons, faculty, and groups of students produced descriptive information about characteristics common to CS departments. These onsite interviews took place in 1998 at five of the study departments. Using the interview data as a foundation, a written survey was constructed and implemented to collect quantitative data on a range of departmental characteristics.

Participants included 130 CS faculty and chairpersons at 23 CS departments. The overall survey response rate was 65 percent, and the average departmental response rate was 68 percent. Descriptive data from the survey can be found on the Internet at http://faculty.virginia.edu/crcoohe/attrition_cs-bio/.

More complete information about the Virginia study and its results will be available in the Communications of the ACM (Cohoon, forthcoming).

The results of the Virginia pilot study were valuable. However, they are limited by the small number of departments that participated. To build on the pilot study, NSF has awarded a grant to Joanne McGrath Cohoon, sociologist and author of the Virginia study; James P. Cohoon, professor of computer science and author of a text for introductory CS courses; and Sarah Turner, professor of education and economics and author of papers on the gender gap in students' choice of a college major. Together, these researchers will develop and expand the Virginia pilot study to the national level.

The national project will include more than 200 CS departments. The departments selected will be those that produce the largest numbers of CS Bachelor's degrees in the United States. Teams of interviewers will first visit 12 of these departments; then all of the study departments will be surveyed. The project will result in a detailed profile of the average high-enrollment CS department, statistical information about the departmental characteristics and practices that promote female retention at rates com-parable to male retention; and recommendations for action based on the study findings.

Like the Virginia pilot study, participation in the national study will be kept strictly confidential. All project reports and publications will use identification codes and summary data. Institutions that participate will never be named and departments will not be described in such a way that they become identifiable. As a benefit of participation, each department will be provided with its own identification code. In this way, departments will be able to distinguish their own characteristics and compare with other study departments without jeopardizing confidentiality.

The success of this national project depends on the cooperation and support of CS faculty and chairpersons. The enrollment numbers, interview and survey data each participant provides will make it possible to accurately represent departments and undergraduate CS education as a whole. The findings that emerge from these data will show how women can be retained in the CS major.

Dr. Joanne McGrath Cohoon is a sociologist at the University of Virginia.

CRA Offers Workshop for New Faculty and Advanced Graduate Students

CRA announces a workshop on February 4-5, 2001 in the Washington, DC area for new faculty and advanced graduate students in computer science, computer engineering, computational science, and other computing-related disciplines. The workshop focuses on practical methods for having a successful and fulfilling academic career. Some of the sessions will cover topics on how to be an effective teacher, such as learning styles, designing a course, and collaborative learning. Other sessions will discuss important aspects of the academic career, such as selecting and managing a research project, preparing a tenure dossier, time management, and family issues, and writing a successful research-funding proposal.

CRA's Committee on the Status of Women in Computing Research (CRA-W) initiated these workshops in the mid-1990s, and they proved to be so successful that CRA began offering additional workshops to supplement those offered by CRA-W. Attendees have routinely evaluated the workshops as excellent, and many of the senior members of the computing research community who have made presentations in the workshops have rued the fact that there were no similar workshops when they began their academic careers.

Based on feedback from department chairs and the CRA board of directors at CRA's Conference at Snowbird in July, several changes and additions have been made that should make the upcoming workshop even more valuable:

- Two workshops (effective teaching and academic careers) will be merged into a single workshop, rather than running in parallel as they did in the past. This will allow participants to attend all sessions.
- The workshop is being co-located with the CRA board of directors' meeting and the CRA Computing Leadership Summit, the latter bringing together the presidents, executive directors, and other senior volunteers from AAAI, ACM, CRA, CSTB, IEEE Computer Society, SIAM, and USENIX. A joint social event is planned with CRA board members and Summit attendees that will provide workshop participants an opportunity to meet informally with senior leaders from the computing community.
- The workshop will include talks by senior members of the two largest funding agencies for computing research, NSF and DARPA, providing overviews of the agencies' operations and funding programs. There will also be a workshop led by NSF staff on how to write a good funding proposal.
- At Snowbird, the majority of department chairs indicated that they would like their new faculty members to attend these workshops and would be willing to pay the costs. It may be more difficult for advanced graduate students to find funding to attend, so CRA is seeking external funding for this purpose. A CRA grant to press, we do not have final word about this funding for graduate students.

For further information about the workshops, see the January issue of Computing Research News or http://www.cra.org/CRA/activities/workshops/2001. The website includes an online registration form.

CRA/SDSC Digital Fellows Program Lecture

Geoffrey M. Voelker
Assistant Professor
University of California, San Diego

"On the Scale and Performance of Cooperative Web Proxy Caching"

Thursday, November 9, 2000 at 2:15 p.m.

Awards/Plenary Session Supercomputing 2000 Conference Dallas Conference Center, Dallas, TX

The goal of the Digital Fellows Program, funded by NSF, is to build ties between the academic and industrial computing research communities and IT workers in federal, state, and local governments.
Recent Reports on the IT Workforce

In April 1999, the Computing Research Association published a major new initiative, The Supply of Information Technology Workers in the United States, authored by Peter Aspray and Dick Sargeant, Jr. This report examined the political context of the IT worker issue, presented a definition of the IT worker, reviewed existing data sources, analyzed the issue of whether there is a shortage of IT workers, the various formal and informal ways in which to obtain training and education, discussed contextual issues, described the role of women and underrepresented minorities, investigated the seed-oorn problem, and provided a set of recommendations. A limited number of copies of the report are still available from CRA at: http://www.cra.org/reports/forlegislativeuse.html. The report can be downloaded from the CRA website at: http://www.cra.org/reports/forlegislativeuse.html. The executive summary of the report is available online at: http://www.cra.org/govaffairs/legislativeuse.html.

Since the publication of CRA’s report, three executive summaries of reports have been published. This article provides brief descriptions of these reports and information on how to obtain them.


This report is based on telephone interviews with 200 IT companies and 500 non-IT companies—total for-profit companies with at least 30 employees. The report discusses: • The overall size of the IT workforce, the demand for qualified workers, and the gap between supply and demand. • The hottest, most in-demand jobs. • The skills workers need to grab one of these hot jobs. • The best way for workers to acquire these skills.

The report invokes a broad definition of IT worker and asserts that there are approximately 10 million such jobs in the United States, and that more than 800,000 are likely to go unfilled. It notes that a very significant portion of the demand is for technical support and network administration positions, followed by database development and software engineering positions. The report concludes that employers find training after the employee is hired to be more effective than pre-hire methods of training, but that only 10 percent of firms are willing to hire partially qualified workers and provide training for them to become fully qualified. Outsourcing and temporary/contract employment, such as it is, are not work to existing employees, are the strategies most commonly used by companies to alleviate worker shortages.

The executive summary of the report is available online at: www.itaa.org/workforcestudy/tbp-007es.html. The entire 67-page report is available in PDF format online at: http://www.itaa.org/pubs/briefs/tbp-007es.html.


This report is based on 13 conversations and town meetings held by the Department of Commerce during 1998, together with information gathered from other meetings, results from a task force for the Federal CIO Council exploring IT workforce issues in the federal workforce, an investigation of a wide array of data, and study of the rapidly emerging literature and expert testimony before the U.S. Congress on this subject.

Topics include: • Forces driving the demand for skilled IT workers. • Information needs of a changing environment, how it is affected by information technology, and how it affects the labor market for core IT occupations. • Trends in the composition of the IT supply and demand in core IT occupations, using government data sources.

State and regional perspectives on supply, demand, and salaries.

Information provided from the OTP town meetings and other meetings.

Federal initiatives to address the problem.

Recommendations for action by businesses, educators, the Cato Institute, the public sector, and the National Science Foundation.


This is the Department’s third annual report on information technology and its impact on the U.S. economy. This report summarizes many different topics, including electronic commerce, software and computer services, place of the IT industries in gross domestic product, usage of IT equipment, research and development investment in IT industries, contribution of information technology to productivity growth, trade in information technology and its impact on the economy, the definition of “IT-producing industries,” and the responses of firms facing IT worker shortages.

The report can be downloaded as a PDF file at: http://www.esa.doc.gov/pubs/briefs/tbp-007es.html.


The 21st Century Workforce Commission is a panel of 17 leaders from business, education, labor, and government commissioned by the U.S. Congress to report to the President and Congress “on how best to ensure that an American worker have the opportunity to prepare for and succeed in today’s economy and the jobs of today and tomorrow.” The first two chapters of this report cover the background and the role of IT in the national economy, the definition of an IT worker, core IT professions, IT skill clusters, and IT jobs in demand.

The rest of the report is devoted to discussion of nine recommendations:

• Building “21st Century Literacy” (thinking, reasoning, teamwork skills, technological proficiency).

• Exercising Leadership through Regional and Local Partnerships.

• Developing Connections to Higher Education and the Workplace.

• Identifying Pathways into IT Jobs.

• Increasing Acquisition of IT Skills through Apprenticeships.

• Expanding Continuous Learning.

• Developing a Flexible Immigration Policy for Skilled IT Workers.

• Raising Student Achievement.

• Making Technology Accessible and Internet Connectivity Universal.

A executive summary and the report are available online at: http://www.workforce21.org/finalreport.pdf. A printed copy can be ordered by email sent to:info@workforce21.org.


A substitute of the report suggests that the current level of H-1B practices “...has limited legal authority to enforce the program.” The report comments on supply, demand, and salaries in IT-producing industries and in IT occupations, factors affecting the supply of IT workers, how the number of H-1B workers is determined, laws governing H-1B practices, such as Labor, the Department of State, the Immigration and Naturalization Service, and the National Science Foundation. The report discusses the findings of the GAO’s report in appendices.

In general, suggestions from the report are: • Information about the number of H-1B non-immigrants approved 1992-99. • A summary of the visa application process; • Demographics of workers approved for H-1B visas by occupation, age, gender; and country of birth; and • The number of H-1B investigations, violations, and back wages due. The report reviews the authority vested in the Department of Labor for the program and its limitations to initiate enforcement actions. It also contains procedures at INS that could lead to potential abuse. There is a discussion of efforts that are underway to improve IT skills in the U.S. workforce, such as the National Science Foundation’s TechNical skill grant program and NSF scholarships. Recommendations are given to the Attorney General to direct the Commissioner of INS to take several steps to prevent H-1B abuse and better serve customers. The report is available online at the GAO’s website (http://www.gao.gov) or call 202-512-6000.
Adelphi University
Department of Computer Science and Mathematics
Computer Science

Adelphi University is a private, coeducational liberal arts college in Garden City, New York. The university has a strong emphasis on undergraduate teaching and research and is committed to ensuring that its graduates have the necessary background and skills to be successful in any future position. With an enrollment of approximately 7,000 students, Adelphi University is recognized for its academic excellence and is a member of the University System of New York (USNY).

The Computer Science Department at Adelphi University offers a range of degree programs, including Bachelor of Science (B.S.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) degrees. The department is committed to providing students with a strong foundation in computer science and related fields, preparing them for careers in a variety of industries. In addition to its academic offerings, the department fosters a vibrant research environment, with faculty members involved in areas such as software engineering, computer networks, and artificial intelligence.

Department Chair: Dr. John M. Owens
Department of Computer Science and Mathematics
Adelphi University
1000 Utopia Parkway
Garden City, New York 11530

We are seeking outstanding candidates for a three-year non-tenure track position as Assistant Professor of Computer Science to commence September 1, 2000. The appointment will be renewable annually, subject to satisfactory performance. The initial appointment will remain for five years with an objective of gaining national prominence in the area of Expert Systems. The duties and responsibilities of the position will involve teaching undergraduate and graduate courses in computer science and related fields, and participating in activities that support the department’s mission and goals.

QUALIFICATIONS REQUIRED:
- A Ph.D. in Computer Science or a closely related field
- Demonstrated teaching and research excellence

APPLICATION DEADLINE AND PROCEDURE:
- Deadline: November 20, 2000
- Send letter of application, curriculum vitae, and the names of three references to:
  Department Chair
  Department of Computer Science and Mathematics
  Adelphi University
  1000 Utopia Parkway
  Garden City, New York 11530

Boston University
College of Engineering

Boston University is a private research university located in Boston, Massachusetts. The university was established in 1839 and is known for its strong programs in the arts, sciences, and engineering. The College of Engineering at Boston University offers undergraduate and graduate degree programs in a variety of fields, including computer science.

The Computer Science Department at Boston University offers a range of degree programs, including Bachelor of Science (B.S.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) degrees. The department is committed to providing students with a strong foundation in computer science and related fields, preparing them for careers in a variety of industries. In addition to its academic offerings, the department fosters a vibrant research environment, with faculty members involved in areas such as software engineering, computer networks, and artificial intelligence.

Department Chair: Dr. Mark D. Hill
Boston University
College of Engineering
Boston, Massachusetts 02215

We are seeking applications for an Assistant Professor of Computer Science to begin the academic year 2001. The successful candidate will have a strong background in computer science and related fields, and will be expected to contribute to the department’s undergraduate and graduate programs. The ideal candidate will have completed a Ph.D. in computer science or a closely related field, with experience in teaching and research.

QUALIFICATIONS REQUIRED:
- A strong background in computer science and related fields
- Demonstrated teaching and research excellence

APPLICATION DEADLINE AND PROCEDURE:
- Deadline: November 20, 2000
- Send letter of application, curriculum vitae, and the names of three references to:
  Department Chair
  Department of Computer Science
  Boston University
  90 Campden Street
  Boston, Massachusetts 02215

Arizona State University
Announcement of Faculty Positions

Arizona State University is a public research university located in Tempe, Arizona. The university was established in 1885 and is known for its strong programs in the arts, sciences, and engineering. The Department of Computer Science at Arizona State University offers undergraduate and graduate degree programs in computer science.

The Department of Computer Science at Arizona State University offers a range of degree programs, including Bachelor of Science (B.S.), Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) degrees. The department is committed to providing students with a strong foundation in computer science and related fields, preparing them for careers in a variety of industries. In addition to its academic offerings, the department fosters a vibrant research environment, with faculty members involved in areas such as software engineering, computer networks, and artificial intelligence.

Department Chair: Dr. William L. Quirin
Arizona State University
Department of Computer Science
PO Box 875060
Tempe, AZ 85287-5060

We are seeking applications for a three-year non-tenure track position as Assistant Professor of Computer Science to begin the academic year 2001. The ideal candidate will have a strong background in computer science and related fields, and will be expected to contribute to the department’s undergraduate and graduate programs. The ideal candidate will have completed a Ph.D. in computer science or a closely related field, with experience in teaching and research.

QUALIFICATIONS REQUIRED:
- A strong background in computer science and related fields
- Demonstrated teaching and research excellence

APPLICATION DEADLINE AND PROCEDURE:
- Deadline: November 20, 2000
- Send letter of application, curriculum vitae, and the names of three references to:
  Department Chair
  Department of Computer Science
  Arizona State University
  PO Box 875060
  Tempe, AZ 85287-5060

Arizona State University
An Equal Opportunity/Affirmative Action Employer

A applicants should send a resume, publication list, includes vita, research vision, teaching philosophies and references to:
- To: Chair, Faculty Search Committee
- Department of Computer Science
- Arizona State University
- PO Box 875060
- Tempe, AZ 85287-5060

ARIZONA STATE UNIVERSITY
An Equal Opportunity/Affirmative Action Employer
Opportunity/Affirmative Action Employer.

29634-0974. Screening will begin August 15, 2000. Science, Clemson University, Clemson, S.C., Search Committee, Department of Computer
South Carolina and has an enrollment of

base, graphics, networking, operating systems,
level additionally requires evidence of signifi-
ence or a related field by the appointment
positions (Assistant or Associate Professor)
mitment to high quality undergraduate
ations should hold the M.S. degree in computer
ment is available at http://ece.clemson.edu.

Clemson University is an Equal
Education, and recruiting will continue until the positions
are filled. Please send your curriculum
is highly competitive. Startup money and

1000, Ithaca, NY 14853
Cornell University

The College of Charleston is an

Computing Research
School of Computer Science, and Technology, Human-Computer Interaction,

The Computer Science Department has
Candidates should have a Ph.D. in

Colorado State University

Colorado State University solicits applications

100 undergraduate majors and 80 graduate stu-

The College of Charleston Department of
Computing, reconfigurable computing, and

3 student centers. A Ph.D. degree in computer

Haggard, Chair, Department of Computer

Department of Engineering and Public

Applications are invited from several areas of computing and infor-

I-700, Suite 507, Washington, DC 20036, telephone 202 234 2111, fax 202 667 1066, email:
dneill@cra.org

30% per year. By bridging faculty

The College of Charleston Department of Computing Science, Clemson University, Clemson, S.C.

and close coordination with other professional staff is essential.

and community building. Its members are North American doctoral-granting departments of
government policy, information gathering and dissemination, developing human resources, and

The College of Charleston Department of Computing Science

Computing Research News November 2000

Computing Research Association (CRA)

DePaul University

DePaul University invites applications for one or more tenure-track or tenured faculty

Hartford, CT/Springfield, MA

DePaul has established a

Applications completed by January 15, 2001 given preference. Women and minority

departments of computing, mathematics, and statistics.

The College of Charleston Department of Computing Science

Duke University

Students are highly encouraged to apply.

Duke University

Department of Computer Science

DePaul University invites applications for multiple positions (Assistant or Associate Professor)
in computer science and information science

CORNWALL, CT/SPRINGFIELD, MA

Applications are invited for faculty positions from several areas of computing and information

Computing Research Association (CRA)

Director of Programs

Computing Research Association (CRA) is seeking a Director of Programs. This is a middle-to-senior level position with the principal duty of facilitating CRA's programs. Responsibilities include ensuring that programs have adequate volunteer, staff, and financial support; managing and reporting on the programs in a timely manner; and ensuring that programs are completed in a timely and successful manner. Responsibilities include ensuring that programs have adequate volunteer, staff, and financial support; managing and reporting on the programs in a timely manner; and ensuring that programs are completed in a timely and successful manner. Responsibilities include ensuring that programs have adequate volunteer, staff, and financial support; managing and reporting on the programs in a timely manner; and ensuring that programs are completed in a timely and successful manner.
This (or their faculty) hire will be in a position to help guide the influence and the continued expansion of our vibrant and growing Department. For more information about the faculty, facilities and other resources, please refer to http://www.cs.cornell.edu.

Applications should be submitted in hard copy and may also be submitted electronically (e-mail attachment, or as a Word file). Applications should include a curriculum vitae, a statement of professional accomplishments and vision for the future, along with curriculum vitae, a statement of professional accomplishments and vision for the future and three letters of reference sent to the following address:

Charles J. Martin, Ph.D.
Chair, Search Committee, Department of Computing and Mathematics
Co-Human Resources
Embry-Riddle Aeronautical University
400 South Clyde Morris Blvd.
Daytona Beach, FL 32114-3900
Email: FAX 904-226-6137
Embry-Riddle Aeronautical University is an Equal Opportunity Employer.

Embry-Riddle Aeronautical University
Department of Computing and Mathematics
Chair

Florida International University
Chair
Charles J. Martin, Ph.D.
Chair, Search Committee, Department of Computing and Mathematics

Florida State University
Chair

Chair, Faculty Recruiting Committee
Department of Computer Science
Cornell University
Ithaca, NY 14853-7501
Please include reference number with application.

Chair, Search Committee
Department of Computing and Mathematics
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Embry-Riddle Aeronautical University
Department of Computing and Mathematics
Chair

Florida International University
School of Computer Science
Applications are invited for multiple tenure track faculty positions at the level of Assistant and/or Associate Professor. A Ph.D. in computer science or related area is required. Applicants are invited in areas of applied logic and semantics, numerical analysis and scientific computing, computer vision, computational biology, graphics, theory, networks, operating systems, and natural language processing.

Alleviation of professional accomplishments in networks, databases, algorithms, information organization and retrieval, multimedia systems, applied logic and semantics, numerical analysis and scientific computing, computer vision, programming languages and methodology, computer graphics, human-computer interaction, computer vision, computational biology, theory, networks, operating systems, and natural language processing.

Further information about the department is available on the World Wide Web at URL: http://www.cs.cornell.edu/ Applications should submit a vita and the names of at least three references.

Chair, Faculty Recruiting Committee
Department of Computer Science
Cornell University
Ithaca, NY 14853-7501
Please include reference number with application.

Embry-Riddle Aeronautical University
Department of Computing and Mathematics
Chair

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Department of Computer Science
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Alleviation of professional accomplishments in networks, databases, algorithms, information organization and retrieval, multimedia systems, applied logic and semantics, numerical analysis and scientific computing, computer vision, computational biology, theory, networks, operating systems, and natural language processing.

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Alleviation of professional accomplishments in networks, databases, algorithms, information organization and retrieval, multimedia systems, applied logic and semantics, numerical analysis and scientific computing, computer vision, computational biology, theory, networks, operating systems, and natural language processing.

Further information about the department is available on the World Wide Web at URL: http://www.cs.cornell.edu/ Applications should submit a vita and the names of at least three references.
has strengths in one or more of the following areas: distributed systems, networking, pervasive computing, and Bio and Chemical Informatics. Cross programs in Human Computer Interaction, Distributed systems, networking, pervasive computing, and/or interest in potential joint appointments with faculty in related areas. The department has hired four tenure- track faculty positions beginning 2001-2002. At least one of the positions is a tenured full professor position. Applications are especially encouraged from women and members of minority groups.

The Computer Science Department at Harvey Mudd College is an Equal Opportunity/Affirmative Action employer.

Harvey Mudd College

Computer Science

Chair and Professor, with a proposed starting date of July 1, 2001. The successful candidate will have a Ph.D. in computer science or a closely related discipline, and a strong commitment to have a Ph.D. in computer science or a closely related discipline, and a strong commitment to diversity in undergraduate and graduate education and research. We are particularly interested in candidates who are committed to teaching in a variety of settings.

Applicants should send the following materials to the address below, describing their professional interests and their goals in both teaching and research. Each application should include a curriculum vitae, a statement regarding teaching and research philosophy, or plan, and supporting materials. Address all questions to the Department of Mathematics and Computer Science, Georgia State University, Professor Robert M. Keller, Chair, 301 E. Twelfth Street, Claremont, CA 91711, or e-mail to keller@cs.hmc.edu.

Professor Robert M. Keller, Chair

Computer Science Department

Harvey Mudd College

301 E. Twelfth Street

Claremont, CA 91711

Harvey Mudd College invites applications and Bio and Chemical Informatics. Cross programs in Human Computer Interaction, Distributed systems, networking, pervasive computing, and/or interest in potential joint appointments with faculty in related areas. The department has hired four tenure- track faculty positions beginning 2001-2002. At least one of the positions is a tenured full professor position. Applications are especially encouraged from women and members of minority groups.

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Professor Robert M. Keller, Chair

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Professor Robert M. Keller, Chair

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The Computer Science Department at Harvey Mudd College is an Equal Opportunity/Affirmative Action employer.
**Northeastern University**

**College of Computer Science**

The College of Computer Science invites applications from outstanding candidates for a full-time endowed professorship at the rank of tenured Full Professor beginning in Fall 2000. Candidates will be considered to the extent they meet the University’s historic and present commitment to diversity. Candidates must have an established record of research and teaching and a record of continuing excellence. Applications are invited from dynamic leaders in Computer Science for an extended visiting assignment. This position will enhance the role of Computing Science at Northeastern University to pursue innovations in teaching, research, and outreach and will lead the Department to strategic planning for the future that is currently in progress and to help shape our future.

Applications are invited from all areas of computer science, including but not limited to: computer graphics, computer vision and image processing, distributed and parallel computing, multimedia, artificial intelligence, expert systems, cybernetics, machine learning, human computer interaction, and networking.

A Ph.D. or equivalent in computer science or a closely related field is required. Applicants at all levels of the academic ladder are encouraged to apply. Additional information may be obtained by contacting Boston area.

**Miami University, Department of Mathematics and Computer Science**

**Adjunct Faculty Position**

Miami University, located 35 miles north of Cincinnati, is a public university with 21,000 undergraduates and 5,000 graduate students. Miami University envisions a culture of innovation and collaboration that focuses on the interaction between its historic Back Bay, the College takes advantage of the city’s rich cultural opportunities and other institutions in the greater Boston area.

**Northeastern University**

**College of Computer Science**

Miami University invites nominations and applications for an Adjunct Faculty Position in the Department of Computing Science. The Department is one of 21 departments in the College of Arts and Sciences. The College, which envisions an active research program, and departmental outreach and will lead the Department in the strategic planning for the future that is currently in progress and to help shape our future.

A Ph.D. or equivalent in computer science or a closely related field is required. Applicants at all levels of the academic ladder are encouraged to apply. Additional information may be obtained by contacting Boston area.

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**Northeastern University**

**College of Computer Science**

Miami University invites nominations and applications for an Adjunct Faculty Position in the Department of Computing Science. The Department is one of 21 departments in the College of Arts and Sciences. The College, which envisions an active research program, and departmental outreach and will lead the Department in the strategic planning for the future that is currently in progress and to help shape our future.

A Ph.D. or equivalent in computer science or a closely related field is required. Applicants at all levels of the academic ladder are encouraged to apply. Additional information may be obtained by contacting Boston area.

Miami University, located 35 miles north of Cincinnati, is a public university with 21,000 undergraduates and 5,000 graduate students. Miami University envisions a culture of innovation and collaboration that focuses on the interaction between its historic Back Bay, the College takes advantage of the city’s rich cultural opportunities and other institutions in the greater Boston area.
Northern Michigan University invites applications for two tenure-track faculty positions in Computer Science. The applicant must possess a Ph.D. in Computer Science or closely related computer science. Preference will be given to applications that present innovative research projects in computing science and operations research. The successful candidate will be expected to teach both undergraduate and graduate courses in computing science. Applicants must have a Ph.D. in computer science or related field. Northern Michigan University, an Equal Opportunity/Federal Affirmative Action Employer, is especially interested in candidates who will contribute to increasing the diversity of its faculty.

To apply, please send a curriculum vitae, a letter of application with statement of teaching and research interests, and three letters of recommendation to:

R. Raymond VanWinkle
Chair, Department of Computer Science
Northern Michigan University
1401 Presque Isle Road
Marquette, Michigan 49855-4481

Applications should include a complete curriculum vitae, a letter of application with statement of career objectives, and names and contact information of at least three references. Applications are being received until the positions are filled.

Purdue University
Department of Computer Science
Purdue University invites applications for tenure-track positions beginning August 2001. Positions are available at all ranks. Ph.D. is required. Applicants will be considered for faculty positions at all levels. Our target areas include algorithms, computer architecture, computer networks, and computer security. Applications from outstanding candidates in all areas of computer science are encouraged. A successful candidate will be expected to contribute to the quality of the program through excellence both in research and teaching. Candidates with research achievements prior to this appointment are encouraged to apply. Purdue University is an Equal Opportunity/Affirmative Action Employer.

Application materials should be submitted to:

Chair, Computer Science Search Committee
Purdue University
West Lafayette, IN 47907

Applications will be reviewed until the positions are filled. For additional information please see http://www.cs.purdue.edu.

Ohio State University
Department of Computer Science and Information Engineering
Ohio State University offers a stimulating and nurturing academic environment. The Department of Computer Science and Information Engineering has large research programs in several areas, including artificial intelligence (including speech, vision, and language recognition), human-computer interaction, artificial intelligence, bioinformatics, databases, distributed and parallel systems, computer systems, digital libraries, distributed and parallel systems, distributed computing, Internet systems, and mobile computing. Ohio State University is an Equal Opportunity/Affirmative Action Employer.

To apply, please send a curriculum vitae, a letter of application with statement of career objectives, and names and contact information for at least three references to:

Chair, Department of Computer Science and Information Engineering
Ohio State University
201 W. 18th Avenue
Columbus, Ohio 43210

Applications should include a complete curriculum vitae, a letter of application with statement of career objectives, and names and contact information of at least three references. Applications are being reviewed until the positions are filled.

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Professional Opportunities

**Southern Polytechnic State University**

Department of Computer Science and Engineering

**The Position:** The Department of Computer Science and Engineering is seeking two tenure-track positions starting August 1, 2003, in the areas of Computer Science and Computer Engineering. One position is at the Assistant Professor level and is expected to continue the department's tradition of excellence in research, teaching, and service. The other position is at the Associate Professor level. The rank is commensurate with experience and rank, with salary competitive with other comparable institutions. The successful applicant will be expected to conduct research and demonstrate a commitment to excellence in teaching and service. The position is a 9-month period with the possibility of extensive research and travel during the summer months. Applications from candidates holding a Ph.D. in Computer Science or Computer Engineering or closely related fields are encouraged. The department is located in the School of Engineering and resides within the College of Engineering. The successful candidate will have a record of excellence in teaching, research, and service and will be expected to contribute to the department's teaching and research activities. The faculty is actively involved in the University's Distributed Technologies Program, the Center for Intelligent Systems and the Center for Embedded Systems and Wireless Communications. Further information about the Computer Science Department at Southern Polytechnic State University can be found at http://www.southernpoly.edu/computer-science.

Applications should be submitted electronically to http://cmgm.stanford.edu/~dlla/research/notice.html. The review of applications will begin on January 15, 2003, and continue until the position is filled. Women and minority group members and applicants with disabilities are encouraged to apply. Please send a resume and three letters of recommendation to: JoAnn Huismann, Chair, Department of Computer Science, Southern Polytechnic State University, 775 Southern Polytechnic Pkwy, Marietta, GA 30060. Women and minorities are particularly encouraged to apply. Applications should be received by December 31, 2002. Women and minority group members and applicants with disabilities are encouraged to apply.

**Stevens Institute of Technology**

Department of Computer Science

The Department of Computer Science at Stevens Institute of Technology invites applications for a tenure-track faculty position, at the assistant professor level, in an area of interest to the department (http://www.cs.stevens-tech.edu). The successful candidate will be expected to develop a strong research program, which will be supported by several NSF grants, and to teach undergraduate and graduate courses in computer science. Excellent candidates in other areas are also encouraged to apply. Applications should be submitted electronically to: http://www.cs.stevens-tech.edu. Following the review of applications, candidates will be notified of the final employment status. SMU will not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status. SMU is committed to the principle of equal opportunity in its employment and treatment of employees. SMU is an Equal Opportunity/Affirmative Action employer and welcomes nominations of and applications from women and minority group members. Applications should be received by December 31, 2002. Women and minority group members and applicants with disabilities are encouraged to apply. Applications should be submitted electronically to http://www.cs.stevens-tech.edu. Following the review of applications, candidates will be notified of the final employment status. SMU will not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status. SMU is committed to the principle of equal opportunity in its employment and treatment of employees. SMU is an Equal Opportunity/Affirmative Action employer and welcomes nominations of and applications from women and minority group members. Applications should be received by December 31, 2002. Women and minority group members and applicants with disabilities are encouraged to apply. Applications should be received electronically to http://www.cs.stevens-tech.edu.
Faculty Search Committee, Dept of Computer Biology Search Committee, Department of Committee, Dept. of Biochemistry and a curriculum vitae, statements of research and higher academic rank. Applicants should send with a substantial component involving the expected to establish active research programs energetic and interdisciplinary community in part of a campuswide expansion in genomics applications for several different positions in Qualifying individuals from underrepresented search/d1/positions.html for more information. University, Syracuse, NY 13244-1240, USA. Please see: http://uplink.syr.edu/faculty/

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is filled. University of Illinois at Chicago is an equal opportunity/affirmative action employer. We are committed to increasing the diversity of our faculty. Women and members of ethnic groups are strongly encouraged to apply.

Tufts University

Assistant Professor - Engineering Computer Science

The School of Engineering at Tufts University invites applications for a tenure-track faculty appointment in the area of Human Factors in Engineering Psychology, offered jointly by the School of Engineering and the Department of Psychology. This is a new program that will be in the School of Engineering. A Ph.D. in Human Factors Engineering is required. Applicants should send with a statement of research and teaching interests, a resume and the names of at least three references to: Prof. Vincent P. Manno, Search Committee Chair, Department of Human Factors Engineering, Tufts University, Medford, MA 02155 or vimallovi@tufts.edu. For more information, see: http://www.ece.tufts.edu/afme. A Full Professor - Equal Opportunity Statement We are committed to increasing the diversity of our faculty. Women and members of underrepresented groups are strongly encouraged to apply.

Tuane University

Department of Electrical Engineering and Computer Science

Faculty Positions in Electrical Engineering and Computer Science

The newly formed Department of Computer Science of the University of Illinois at Chicago invites applications and nominations for the position of Department Head. The CS Department is growing out of the current Department of Electrical Engineering and Computer Science to form a Department of Electrical and Computer Engineering. At the outset, the CS Department (http://www.cs.uic.edu) is expected to have between 25 and 30 faculty members, and to offer at least 20 different undergraduate courses in Computer Science. Student enrollment is approximately 400 undergraduate and 250 graduate students. The B.S. degree program is accredited by the Computer Science Accreditation Board. The research areas at the new department include bioinformatics, distributed and parallel computing, computer engineering and operating systems, networks, databases, software engineering, computer architecture, VLSI CAD, computer vision, artificial intelligence, and machine learning.

The University of Illinois at Chicago (UIC) is located in the heart of the United States of America. The city is home to one of the major university centers on the west side of the nation. The campus is approximately 15 miles from downtown Chicago and is adjacent to the Loop and the Lakefront. The campus is accessible by public transportation, and is within walking distance of several public libraries, museums, and fine restaurants.

The University of Illinois at Chicago is one of the fastest growing metropolitan areas in the country, with a diverse population of over 28,000 students. The city offers a wide range of cultural and entertainment activities, including theatrical productions, symphonies, museums, art exhibits, and athletic events. The University offers a full range of undergraduate and graduate degree programs, including engineering, business, medical, and law programs. The University also has a variety of graduate programs in the arts and sciences, and offers a range of professional programs, including law, medicine, pharmacy, and social work.

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University of British Columbia

Department of Computer Science

Research and Teaching Faculty Positions

The Department of Computer Science at the University of British Columbia is recruiting for one or more tenure-track or tenured positions. Applicants at the rank of assistant professor, associate professor, or professor are eligible. In accordance with the University of British Columbia's commitment to diversity, applications from minority, disabled, or aboriginal applicant with equivalent experience are encouraged.

The University of British Columbia is situated on the traditional, ancestral, and unceded territory of the Musqueam and other First Nations. The university is committed to excellence in research and teaching, and in promoting a climate that is inclusive of all groups, including those who are traditionally underrepresented in the field.

The Department of Computer Science has a strong research and teaching presence in a wide range of fields, including computer systems, networking and security, and computational sciences. The department is committed to both research and teaching, and emphasizes building strengths in various research areas.

The University of British Columbia is an equal opportunity employer.

University of California, Santa Barbara

Department of Computer Science

The University of California at Santa Barbara invites applications from qualified candidates for the position of Professor, Associate Professor and Professor in Computer Science. The department emphasizes building strengths in all areas of computer science, including computer systems, networks, and security.

Applications are especially welcome from distinguished candidates at all levels. The department is committed to excellence in research and teaching, and encourages applications from those who would complement and strengthen the department's research and teaching programs. Tenure-track and tenured faculty positions, starting in Fall 2002, are available. Applications from minority, disabled, or aboriginal applicant with equivalent experience are encouraged.

The University of California, Santa Barbara is an Equal Opportunity/Affirmative Action Employer. Women, minority, disabled, or aboriginal applicants with equivalent experience are encouraged to apply.

Professorship, Associate Professor and Professor

Applications are especially welcome from distinguished candidates at all levels. The department is committed to excellence in research and teaching, and encourages applications from those who would complement and strengthen the department's research and teaching programs. Tenure-track and tenured faculty positions, starting in Fall 2002, are available. Applications from minority, disabled, or aboriginal applicant with equivalent experience are encouraged.

The University of California, Santa Barbara is an Equal Opportunity/Affirmative Action Employer. Women, minority, disabled, or aboriginal applicants with equivalent experience are encouraged to apply.

Professional Opportunities

Computer Science Department

University of California, Santa Cruz

Tenure-track and tenured faculty positions

The Computer Science Department at the University of California, Santa Cruz (UCSC) invites applications for one or more tenure-track and tenured faculty positions, starting in Fall 2002. The target areas and levels of positions are listed below. The Department and the School of Engineering are in a period of rapid growth, and are seeking highly qualified applicants from all areas of computer science.

Applications are especially welcome from distinguished candidates at all levels. The department is committed to excellence in research and teaching, and encourages applications from those who would complement and strengthen the department's research and teaching programs. Tenure-track and tenured faculty positions, starting in Fall 2002, are available. Applications from minority, disabled, or aboriginal applicant with equivalent experience are encouraged.

The University of California, Santa Cruz is an Equal Employment Opportunity/Affirmative Action Employer. Women, minority, disabled, or aboriginal applicants with equivalent experience are encouraged to apply.

Computer Science Department

University of Maryland University College

Teach Online

Working Professionals and A.C.E.

Teach online with the world leader in distance education.

UCM University College offers a full range of associate, undergraduate, and graduate programs specifically designed for working adults. Faculty especially sought for computer science and management.

UCM.UC software training available online. Terminal degree required for Graduate Programs and highly desired for Undergraduate Programs. Professional experience desired in all fields.

Teach Online

Current openings exist to teach in UCM.UC programs for personnel on U.S. military bases in Aisia and Europe. Base-based and volunteer desired. 10-month renewable contracts. Begin Fall 2000. U.S. citizenship required. Benefits include transportation, military base privileges, health insurance and TIAA-CREF

Not suitable for faculty with children.

Faculty information: http://www.ucm.uc.edu/ncst/ncstfa.html.

Send resume and cover letter to: Faculty-recruit@ucm.uc.edu.

The University at Buffalo is New York State's flagship public university, located in Buffalo, New York, with a beautiful campus facility located just 12 miles from downtown and 20 minutes from the airport. The university is committed to excellence in research and teaching, and in promoting a climate that is inclusive of all groups, including those who are traditionally underrepresented in the field.

The University at Buffalo is part of the State University of New York system and is an AA/EEO employer.

Teach Online

Current openings exist to teach in UCM.UC programs for personnel on U.S. military bases in Aisia and Europe. Base-based and volunteer desired. 10-month renewable contracts. Begin Fall 2000. U.S. citizenship required. Benefits include transportation, military base privileges, health insurance and TIAA-CREF

Not suitable for faculty with children.

Faculty information: http://www.ucm.uc.edu/ncst/ncstfa.html.

Send resume and cover letter to: Faculty-recruit@ucm.uc.edu.

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Professional Opportunities

University of California, Irvine

The Department of Information and Computer Science (ICS) has several tenure or tenure-track positions open in the following areas of research emphasis:

- A. Computer Graphics
- B. Human-Computer Interaction
- C. Computer Security
- D. Software Engineering
- E. Bioinformatics or Medical Informatics
- F. Information Infrastructure

A Ph.D. degree is required. Applicants should be an associate or assistant professor in computer graphics and associated with a recognized laboratory. Exceptional candidates from all ranks will be considered. Applications from applicants with a Ph.D. degree in Computer Science or a related field, and strong research credentials evidenced by scholarly publications, are invited for assistant professor positions. Applicants are required to send letters of evaluation to recruitment@ics.uci.edu by January 12, 2003. The University of California, Irvine is an Equal Opportunity/ Affirmative Action Employer.

University of Connecticut

The Department of Computer Science & Engineering is seeking applications for the following positions: tenured and tenure-track faculty positions in Computer Science and Engineering, Assistant/Associate/Full Professor. The Department invites nominations and applications for these open positions. Nominations and applications should be sent directly to: Co-Peggy Rekhson

Department of Computer Science & Engineering
University of Connecticut

Irvine, CA 92697-3425

Applications will begin immediately upon receipt of curriculum vitae. The minimum qualifications for each position are established by the University of Connecticut. The University of Connecticut is committed to building a culturally diverse and active faculty and encourages applications from women, minorities, and people with disabilities. The University of Connecticut offers an attractive compensation package consistent with the position. Please write a letter of interest, a CV, three sample papers and the names of at least three references to: Steven C. Hsu, Chair, Department of Computer Science and Engineering, University of Connecticut, Storrs, CT 06269. Application screening will begin as of November 30, 2003, and will continue until the positions are filled.

University of Denver

The College of Computing and Information Science is seeking applications for a tenure-track position at the Assistant Professor level. The successful candidate will be expected to design and teach courses in computer science and to conduct research. The College is seeking candidates with expertise in computer science and a commitment to interdisciplinary computer science and information science education at both the undergraduate and graduate levels. The University is an equal opportunity/affirmative action employer.

University of Florida

The Department of Computer Science and Engineering invites applications for a tenure-track faculty position at the Assistant Professor level in Computer Science and Engineering. The University of Florida is committed to excellence in teaching, research, and service. The University of Florida is an equal opportunity/affirmative action employer.

University of Massachusetts Lowell

Faculty Positions

The Department of Computer Science and Information Engineering at the University of Massachusetts Lowell seeks scholars who are active researchers and capable teachers in any area of computer science and/or information engineering to join our faculty as assistant professors, associate professors, or tenured professors.

All applicants should hold a PhD in Computer Science or a closely related discipline. Postdoctoral and visiting faculty positions are also available.

Review of applications will begin immediately and will continue until the positions are filled. U.S. citizenship or permanent residency is required. The University of Massachusetts is an equal opportunity affirmative action employer, and encourages applications from women and minorities.

University of Virginia

Engineering. It is staffed with 16 faculty members, one endowed chair, and an endowed professorship with an annual endowment of $500,000. The faculty has a strong commitment to effective undergraduate and graduate teaching, and a research program that has attracted national and international recognition. The University of Connecticut is committed to building a culturally diverse and active faculty and encourages applications from women, minorities, and people with disabilities. The University of Connecticut offers an attractive compensation package commensurate with the position.

University of Washington

The Department of Computer Science and Engineering Department is seeking applications for a faculty position in Computer Science and Engineering. The University of Washington is an equal opportunity employer.

University of Wisconsin

The Computer Science Department has several tenure or tenure-track positions open in the following areas of research emphasis:

- Computer Architecture
- Human-Computer Interaction
- Software Engineering
- Computer Networks
- etc.

Applicants should have a Ph.D. in computer science or a closely related discipline. Exceptional candidates from all ranks will be considered.

University of Wisconsin-Madison

Applications are invited for faculty positions in the following areas of research emphasis:

- Computer Science
- Electrical Engineering
- Computer Engineering
- Computer Networks
- Human-Computer Interaction
- etc.

Applicants should have a Ph.D. in computer science or a closely related discipline. Exceptional candidates from all ranks will be considered.

University of Wisconsin-Milwaukee

The Computer Science and Engineering Department at the University of Wisconsin-Milwaukee is currently accepting applications for faculty positions in several areas of research emphasis:

- Computer Science
- Electrical Engineering
- Computer Engineering
- Computer Networks
- Human-Computer Interaction
- etc.

Applicants should have a Ph.D. in computer science or a closely related discipline. Exceptional candidates from all ranks will be considered.

University of Wisconsin-Milwaukee

The Computer Science and Engineering Department at the University of Wisconsin-Milwaukee is currently accepting applications for faculty positions in several areas of research emphasis:

- Computer Science
- Electrical Engineering
- Computer Engineering
- Computer Networks
- Human-Computer Interaction
- etc.

Applicants should have a Ph.D. in computer science or a closely related discipline. Exceptional candidates from all ranks will be considered.

University of Wisconsin-Milwaukee

The Computer Science and Engineering Department at the University of Wisconsin-Milwaukee is currently accepting applications for faculty positions in several areas of research emphasis:

- Computer Science
- Electrical Engineering
- Computer Engineering
- Computer Networks
- Human-Computer Interaction
- etc.

Applicants should have a Ph.D. in computer science or a closely related discipline. Exceptional candidates from all ranks will be considered.

University of Wisconsin-Milwaukee

The Computer Science and Engineering Department at the University of Wisconsin-Milwaukee is currently accepting applications for faculty positions in several areas of research emphasis:

- Computer Science
- Electrical Engineering
- Computer Engineering
- Computer Networks
- Human-Computer Interaction
- etc.

Applicants should have a Ph.D. in computer science or a closely related discipline. Exceptional candidates from all ranks will be considered.

University of Wisconsin-Milwaukee

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- Computer Science
- Electrical Engineering
- Computer Engineering
- Computer Networks
- Human-Computer Interaction
- etc.
Univ. of Illinois at Chicago
Department of Electrical and Computer Engineering

Faculty Positions

The Department of Electrical and Computer Engineering invites applications for tenure-track and tenure faculty appointments at all levels. In particular, we are seeking candidates who can teach undergraduate and graduate courses in the areas of computational intelligence, adaptive systems, data mining and databases and distributed information systems. Outstanding candidates in all areas of computational intelligence, adaptive systems, data mining and databases and distributed information systems. Outstanding candidates in all areas of computational intelligence, adaptive systems, data mining and databases and distributed information systems. Applications are encouraged from women and minority candidates. All candidates should have outstanding research and teaching potential.

Faculty Positions

The Department of Electrical and Computer Engineering invites applications for tenure-track and tenure faculty appointments at all levels. The Department is currently experiencing rapid growth and expansion in several of its programs. The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer and encourages nominations and applications from women, minority candidates, persons with disabilities of applicants and employees. Equal Opportunity, Affirmative Action Employer and encourages nominations and applications from women, minority candidates, persons with disabilities of applicants and employees. Equal Opportunity, Affirmative Action Employer and encourages nominations and applications from women, minority candidates, persons with disabilities of applicants and employees.

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University of Maryland, College Park
Faculty Positions in Bioinformatics and Computational Biology
The University of Maryland invites applications at all levels for the newly established Center for Bioinformatics and Computational Biology.

The campus has substantial resources committed to the Center, including funds for the recruitment of new faculty. Current research interests in focused areas of computational genomics and bioinformatics include structural and functional genomics, proteomics, and systems biology. It is anticipated that the primary background of new faculty will be in computer science, mathematics and statistics, molecular biology, biochemistry, or a related area. The primary responsibility of the new faculty will be to lead a focused, nationally visible research program in computational genomics.

At the new faculty will be focused in the University of Maryland Institute for Advanced Computer Studies (UMIACS) and will have access to high-end computing infrastructure. The new faculty will also be affiliated, and will contribute to activities with nearby outstanding research groups in organizations such as A. C. Enomoto, T. G. Brown, U. Bit, and the Smithsonian.

Applications should be sent to a letter of application, curriculum vitae, a list of published papers, and a letter of reference for a position of interest.

The University of Maryland is an affirmative action/equal opportunity employer. Women and minorities are encouraged to apply. Applications will be accepted until the positions are filled.

University of Maryland, College Park
Department of Computer Science
The University of Maryland, College Park Department of Computer Science is seeking faculty members at all ranks. Outstanding candidates in all areas will be considered, but the department is especially seeking candidates in the areas of networks, mobile computing, multi-modal systems, graphics, Human Computer Interaction, databases, information security, programming languages, and software engineering.

Interested applicants of May 15 is the application deadline; initial review of applications will begin immediately. Review of applications will continue until the positions are filled.

University of North Carolina at Chapel Hill
Center for Bioinformatics and Computational Structure. The new faculty will also be affiliated, and with multiple research groups with nearby outstanding research groups in organizations such as A. C. Enomoto, T. G. Brown, U. Bit, and the Smithsonian.

Applications should be sent to a letter of application, curriculum vitae, a list of published papers, and a letter of reference for a position of interest.

The University of Maryland is an affirmative action/equal opportunity employer. Women and minorities are encouraged to apply. Applications will be accepted until the positions are filled.

University of Massachusetts, Amherst
Department of Computer Science Faculty and Research Scientist Positions
The University of Massachusetts offers an attractive environment and life style. Applicants are invited for tenure-track faculty positions at the assistant, associate or full professor level. A Ph.D. in Computer Science or related area and at least four years of professional experience are required.

Applications are due by November 15, 2000. Send application letter and curriculum vitae to: Chair, University of Massachusetts, Amherst

University of Montana
Department of Computer Science
Computer Science and Engineering.

The University of Montana invites applications at all levels for faculty positions in Computer Science and Engineering. We seek candidates who can contribute to our mission of excellence in research, teaching, and extension. Women and minorities are encouraged to apply.

Applications are due by November 15, 2000. Send letter of application and curriculum vitae to: Chair, Department of Computer Science, University of Montana, Missoula, Montana 59812-0859.

University of Pennsylvania
Department of Computer and Information Science
Applications are invited for a full time position in the area of Human-Computer Interaction in the Computer and Information Science Department. The position will be at the assistant professor level, with an emphasis on research and teaching in the area of Human-Computer Interaction.

Applications should be sent to Professor S. M. Blyth, Chair, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA 19104-6360.

University of Pittsburgh
Department of Computer Science
Applications are invited for assistant professor positions in the Department of Computer Science. The Department is a dynamic and diverse group with numerous areas of expertise. Our researches in computer science includes: artificial intelligence, algorithmic and computational complexity, computer networks, computer security, computer systems, databases, distributed computing, programming languages, software engineering, and theoretical computer science.

Applications should be sent to a letter of application, curriculum vitae, and a list of publications to: Professor L. B. Axler, Chair, Department of Computer Science, University of Pittsburgh, Pittsburgh, PA 15260.

University of Southern California
Department of Computer Science
Applications are invited for full time assistant professor positions in the Computer Science Department at the University of Southern California. Areas of interest include artificial intelligence, computer networks, computer security, computer systems, databases, distributed computing, programming languages, software engineering, and theoretical computer science.

Applications should be sent to the chair, Professor L. B. Axler, Department of Computer Science, University of Southern California, Los Angeles, CA 90089-1271.

University of Tennessee at Knoxville
Department of Computer Science
Applications are invited for a position in the area of Computer Science and Engineering. The area of research can be in any area of interest to the faculty member. Applicants are expected to have a Ph.D. in Computer Science or Engineering.

Applications should be sent to the chair, Professor L. B. Axler, Department of Computer Science, University of Southern California, Los Angeles, CA 90089-1271.

University of Texas at Austin
Department of Computer Science
Applications are invited for full time assistant professor positions in the Department of Computer Science at the University of Texas at Austin. Areas of interest include artificial intelligence, computer networks, computer security, computer systems, databases, distributed computing, programming languages, software engineering, and theoretical computer science.

Applications should be sent to the chair, Professor L. B. Axler, Department of Computer Science, University of Southern California, Los Angeles, CA 90089-1271.

University of Virginia
Department of Computer Science
Applications are invited for a position in the area of Computer Science and Engineering. The area of research can be in any area of interest to the faculty member. Applicants are expected to have a Ph.D. in Computer Science or Engineering.

Applications should be sent to the chair, Professor L. B. Axler, Department of Computer Science, University of Southern California, Los Angeles, CA 90089-1271.

University of Wisconsin-Madison
Department of Computer Science
Applications are invited for a position in the area of Computer Science and Engineering. The area of research can be in any area of interest to the faculty member. Applicants are expected to have a Ph.D. in Computer Science or Engineering.

Applications should be sent to the chair, Professor L. B. Axler, Department of Computer Science, University of Southern California, Los Angeles, CA 90089-1271.

University of Wisconsin-Milwaukee
Department of Computer Science
Applications are invited for full time assistant professor positions in the Department of Computer Science. Areas of interest include artificial intelligence, computer networks, computer security, computer systems, databases, distributed computing, programming languages, software engineering, and theoretical computer science.

Applications should be sent to the chair, Professor L. B. Axler, Department of Computer Science, University of Southern California, Los Angeles, CA 90089-1271.
Professional Opportunities

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

The Penn CFI Faculty is sensitive to "Two body problems" and would be pleased to assist with opportunities in the Philadelphia region.

The University of Pennsylvania invites applicants for the position of Lecturer in Computer Science. The position is for one year and is renewable annually up to five years. Applicants must hold a PhD in Computer Science or related field and have teaching experience at the university level. Applicants should send a curriculum vitae, a statement of teaching interests, and three letters of recommendation to: Professor Rami Melhem, Chair, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA 19104-6389. Applications should be received by March 1, 2001, to be assured full consideration.

The Department of Computer and Information Science at the University of Pennsylvania invites applications for two full-time, tenure-track positions in the area of algorithms and computational biology. The department is strongly committed to expanding its strong research and training programs in this area. Applicants should have a PhD in Computer Science or a related field and should have a demonstrated commitment to research in computational biology. Applicants should send a curriculum vitae, a research summary, and the names of three references to: Professor Rami Melhem, Chair, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA 19104-6389. Applications should be received by March 1, 2001, to be assured full consideration.

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University of Virginia

The University of Virginia's Department of Computer Science has non-tenure track faculty positions available for computer science or a closely related discipline. We require quality teaching. Tenure track positions are at least an MS in Computer Science or a closely related discipline. Available positions are open until filled. Applications will be accepted until available. Send a resume and the names of three references to: Dr. Jack Stanford, Chair, Department of Computer Science, University of Virginia, P.O. Box 40070, University of Virginia, Charlottesville, VA 22904-4007. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.
Professional Opportunities

The role of the Associate Director is to help build a strong research culture in the department. Candidates should have a strong interest in undergraduate teaching as well as research. They should be able to work effectively with students, colleagues, and others from different disciplines. The successful candidate will be responsible for both teaching and research.

The successful candidate will have a strong commitment to teaching undergraduate and graduate courses in Computer Science and Computer Engineering. They should have a Ph.D. in Computer Science or a closely related field. Preference will be given to candidates with a strong interest in undergraduate teaching. The successful candidate will be expected to teach a variety of courses in Computer Science, including courses for the first two years of the undergraduate program.

Candidates should send a letter of interest, a curriculum vitae, and the names and e-mail addresses of three references to: Assistant Professor Search Committee, Computer Science, Virginia Military Institute, 190 North Moseley Street, Lexington, VA 24450. A full description of the position and instructions for completing the application can be found at: http://www.cs.vmi.edu/dept/jobs/1796.html.

University of Washington

The University of Western Ontario, a top research university in Canada, is actively expanding its computing and information systems programs. Applicants are invited for tenure-track positions at the level of Assistant or Associate Professor.

The department currently comprises 30 faculty members, including researchers working in all areas of computer science and computer engineering. The department has a strong commitment to teaching undergraduate and graduate students in a variety of courses. The successful candidate will be expected to participate in the development of the curriculum and to work effectively with students.

The University of Western Ontario invites applications from qualified candidates for tenure-track positions at the level of Assistant or Associate Professor. Preference will be given to candidates who have demonstrated excellence in teaching and research. The successful candidate will be expected to teach a variety of courses in Computer Science, including courses for the first two years of the undergraduate program.

The successful candidate will be expected to participate in the development of the curriculum and to work effectively with students. The successful candidate will be expected to develop and maintain an active research program in the area of Computer Science. The successful candidate will be expected to teach a variety of courses in Computer Science, including courses for the first two years of the undergraduate program.

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Professional Opportunities

Yale University

Computer Science Department

The Yale Computer Science Department is looking for highly qualified candidates for faculty positions beginning in the 2002-2003 academic year. The Department is committed to excellence in teaching and research in all areas of artificial intelligence, computational science and applied mathematics, computer systems, computer-aided design, computer graphics, machine learning, programming languages and systems, theory, visualization, and robotics.

Selected areas in all will be considered: high-impact areas include artificial intelligence, computer systems, computer science education, computer vision, databases and other closely-related areas; artificial intelligence, databases, electronic commerce and market-based computation; graphics and the delivery of multimedia; and networking. A preference is given to candidates with a Ph.D. or strong M.S. in Computer Science or a closely related field and with a strong research background. Yale is an affirmative action/equal opportunity employer.

York University

Department of Computer Science

Faculty Positions in Computer Science

The Department of Computer Science in the Faculty of Pure and Applied Science invites applications for a number of tenure-track and/or contractually limited term positions in Computer Engineering. The computer engineering program is housed within the Department of Computer Science at York University which includes over 100 faculty members, and is the third largest university in Canada. For further information concerning the department see http://www.cse.yorku.ca.

A Ph.D. or equivalent curriculum and the names of four references should be sent to: Faculty Recruiting Committee, Department of Computer Science, Faculty of Pure and Applied Science, York University, 4700 Keele Street, 336 CB, Toronto, ON, Canada M3J 1P3. Applications should be received by January 15, 2001 for appointments to be made for July 1, 2001. Successful candidates will be expected to contribute to the research and teaching in both the department and the Computer Engineering program. Experience in computer engineering or closely-related areas is desirable. The Department of Computer Engineering, with diverse research specializations, is an active research environment, maintaining close links with industry and with the Canadian Institute for Advanced Research in Theoretical Computer Science (CIFAR).

Congress Passes H-1B Legislation; Universities Exempted from Caps

On October 3 the House and Senate both passed a bill to expand the H-1B visa program for skilled nonimmigrant workers. The legislation would raise the cap on H-1B visas to 120,000 in 2003, the current limit is 65,000. The legislation would also exempt from the caps workers who are employed by institutions of higher education and governmental research organizations. The bill includes provisions covering the distribution of petitioner fees to federal education programs, including those of the National Science Foundation. The NSF has received about $500 million in such fees in recent years to support its research programs, where the bill would expand the NSF’s authorized activities to include K-12 educational programs. The Senate bill passed the H-1B visas by voice vote. The House did not vote on the measure. The bill represents the first significant expansion of the current H-1B visa program. The bill seeks to address the need for professionals in the U.S. economy more than $10 billion a year.
Senate Acts on IT Bill

In late September, the Senate passed S 2046, the Federal Research Investment Act, sponsored by Senator Bill Frist. It includes: a) authorizations for all major science agencies leading to a doubling of the aggregate federal research budget over 10 years, and b) authorizations for information technology R&D along the lines of HR 2086, the Networking and Information Technology R&D Act, sponsored by House Science Committee Chairman James Sensenbrenner. (See May CRN for an account of the House passage of HR 2086).

In its original incarnation, S 2046 was known as the Next Generation Internet Act and would have reauthorized the NGI program. As a result of discussions between Sensenbrenner and Frist, the bill’s IT provisions were changed to reflect more closely those of the NIT R&D bill before it went to the Senate floor. Frist declined Sensenbrenner’s other request to refrain from adding to S 2046 the provisions of the doubling bill, a measure Sensenbrenner adamantly opposes. As such, the bill is unlikely to be completed prior to congressional adjournment and the 2000 elections.

Survey from Page 3

Industrial data were adjusted to approximate the pay scale for the period September 1999 though August 2000. This was done by assuming that the average company will adjust its scale for CS by 8 percent from 1999 to 2000 (this is not the same as assuming an average salary increase of 8 percent because the actual salary increase people receive also factor in an additional year of experience). The graph shows the base plus variable salary for the average minimum, average, and average maximum salaries plotted by years since receiving the Ph.D.

The Taulbee data for the nine-month tenure-track academic salaries are those for the average over all 132 responses from 135 U.S. computer science departments polled (table 24 in the Taulbee Survey, CRN, March 2000). Starting salaries are for all U.S. CS and CE departments responding (table 39, row 1). The experience levels assumed for assistant, associate, and full professors are 3, 9, and 18 years, respectively. This is based on the assumption that the typical experience range in CS is 1 to 5 years for assistant professors, 5 to 12 for associate, and 13 and up for full professors, with demographics still favoring younger full professors. A dmittingly, these ranges are somewhat arbitrary. Readers can adjust them to draw whatever conclusions they wish!

Note that the minimum salaries reported usually correspond to those with less experience in an experience range, while the maximums tend to correspond to those with more experience (although there are many counter examples). However, no adjustment was made for this observation in either the industrial or academic graphs. The industrial experience ranges surveyed were 1 to 5, 6 to 10, 11 to 15, and 16 to 20 years. The data are plotted at the midpoints, 3, 8, 13, and 18 years, respectively. This month CRA will again conduct its survey for 2000-01 industry lab salaries. Companies that complete the survey will receive summary results in December, followed by a detailed analysis in February 2001.

Dr. Gear retired as President of the NEC Research Institute in 1999. He was a CRA board member for many years. As the chair of CRA’s Industry Committee, Dr. Gear was instrumental in initiating the industrial labs salary survey in 1997.

Georgia State University Announces Ph.D. Program in Computer Science

Beginning in fall 2000, the Computer Science Department at Georgia State U niversity offers a Ph.D. program in Computer Science. A ppllications are sought for the spring, summer, and fall 2001 semesters. Financial aid is available for full-time Ph.D. students. The department encourages applications from high-tech and teaching professionals and those with non-computer science, but closely related, degrees.

Fields of Study


Research Infrastructure

Departmental computing facilities for research include more than 130 networked computers, a 24-processor Origin 2000 high-performance computer, and six laboratories, including one with ATM switches for network and distributed computing research and another for hypermedia and visualization research.

Location

The university is located in the heart of Atlanta’s central business district. A tanta is a major center for research and education with more than 13 universities and colleges and four major research libraries.

Contact

Director of Graduate Studies, Department of Computer Science, Georgia State University, Atlana, GA 30303-3083. http://www.cs.gsu.edu/cs/index.html
multi-year support was reported by 51 percent of programs; 20 percent of these programs offered support for 2 years, 14 percent offered support for 3 years, and 59 percent offered support for more than 3 years. Paid visits to campus by programs was the incentive for 51 percent of programs, with a median amount per visit of $500 and a maximum of $5,000. Finally, guaranteed summer support was reported by 30 percent of the programs; the mean and median amounts reported were approximately $4,000.

Conclusions

We have not attempted to provide any comparison of the results of this survey with those of the 1998 survey, since we are still working to develop a body of questions that can consistently generate useful and reliable results. For example, we have had difficulty in phrasing questions that deal effectively and reliably with faculty teaching loads. We have asked for data on "official" and "actual" teaching loads. The ways in which departments treat graduate seminars and advising are extremely variable, and it is hard to find words that can pin this down in a uniform manner. Departmental budgets and operating expenditures raise similarly complex issues that are difficult to resolve in the brief text of a question.

The results of the survey were presented at a workshop at the CRA Conference at Snowbird in July. The initial feedback from the workshop suggests that the survey data are of great interest to computer science and computer engineering departments.

The CRA Board is considering the future of the Profiles Survey. One possibility would be to incorporate some of the Profiles questions into the annual Tauhouey Survey.

Acknowledgments

We would like to thank Stu Zweben and Jeff Ullman for their assistance in developing the survey. We would also like to acknowledge the support of the CRA staff, and particularly the help of Bill A spray and Jay Wilcox. Finally, we would like to thank Lena Truszczynski for her help in analyzing the results of the survey.

Stephen Seidman and Mirek Truszczynski, who also oversaw the 1998 Profiles Survey, chair the computing science departments in Colorado State University and the University of Colorado in Kentucky, respectively.