

COMPUTING RESEARCH NEWS

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Administration Releases “Austere” FY05 Budget Computing R&D Declines Under President’s Plan

By Peter Harsha

Federal government support for computing research would decline by 1 percent overall next year under the President’s budget request for 2005, released February 2, 2004. Computing research at the National Science Foundation (NSF), National Institutes of Health (NIH), and Department of Energy (DOE) would grow slightly under the President’s plan—at a rate close to or below the rate of inflation—while funding at the National Aeronautics and Space Administration (NASA) and Department of Defense (DOD) would see significant cuts.

Overall, federal research and development would see an increase to \$131 billion in FY 2005, up from \$125 billion appropriated in FY 2004, an increase of 5 percent. Federal support for basic research would see a modest 0.6 percent increase, to \$26.8 billion in FY 2005 from \$26.7 billion in FY 2004.

Presidential budget advisors, however, said the funding levels were indicative of the high priority the

administration places on federal research and development activities. In a press briefing coinciding with the budget release, Marcus Peacock, Associate Director, White House Office of Management and Budget, noted that the 5 percent overall growth in federal research and development spending should be judged in comparison to the less than 1 percent increase in non-defense-related discretionary spending throughout the rest of the budget.

Speaking at the National Academy of Sciences with White House Office of Science and Technology Policy director John Marburger, Peacock said the 2.3 percent increase in non-defense-related R&D in an otherwise “very austere” budget demonstrated the administration’s continued commitment to a healthy federal R&D enterprise.

Under the President’s plan, the federal government’s Networking and Information Technology Research and Development program (NITRD)—the program comprising

Networking and Information Technology R&D President’s Request (dollar amounts in millions)					
Agency	2003 Actual	2004 Estimate	2005 Proposed	Dollar Change 2004 to 2005	Percent Change 2004 to 2005
National Science Foundation	743	754	761	7	1%
Health and Human Services	376	368	371	3	1%
Energy	308	344	354	10	3%
NASA	213	275	259	-16	-6%
Defense	296	252	226	-26	-10%
Commerce	26	26	33	7	27%
EPA	2	4	4	0	0%
Total	1964	2023	2008	-15	-1%

all federal IT R&D activities—would decrease slightly to just over \$2.00 billion for FY 2005, down from \$2.02 billion in FY 2004. Funding at NSF, the lead agency in the NITRD program, would increase by \$7 million to \$761 million for FY 2005, an increase of 1 percent. Funding at DOE would also grow to \$354 million, up \$10 million from FY 2004.

Marburger described the NITRD initiative as “highly successful” and “mature,” justifying limited reprioritization within some agencies and allowing for program cuts. Under the

administration’s blueprint, NASA’s spending on IT R&D would fall to \$259 million in FY 2005, down \$16 million from FY 2004. Funding would also be reduced at DOD to \$226 million for FY 2005, down 26 percent from FY 2004 levels.

Rounding out the program, the Department of Commerce—which includes the National Institute of Standards and Technology (NIST) and the National Oceanic and Atmospheric Administration (NOAA)—would receive a \$7 million increase to \$33 million for FY 2005; and the Department of

FY05 Budget
Continued on Page 6

Inside CRN

Expanding the Pipeline	2	Trends in Doctorates Awarded.....	4
NSF/CISE Plans for 2005.....	3	Professional Opportunities.....	7
Transitions/Awards.....	3	Snowbird 2004	12

**Preliminary Snowbird
Program—
See Back Page.**

Lawrence Berkeley National Lab

By Horst Simon

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

BACKGROUND

Lawrence Berkeley National Laboratory has been a leader in scientific research in the United States for more than 70 years, winning nine Nobel Prizes and drawing leading scientists and technical staff from around the world. Today, the Lab’s Computing Sciences organization is one of the premier groups of its kind in the country, with state-of-the-art infrastructure and expertise available for unclassified research projects that advance scientific discovery in all disciplines.

Situated in the hills above the University of California, Berkeley campus, with far-reaching views of the Bay area, the Lab is an inspiring setting for leading-edge scientific research. Ernest Orlando Lawrence, winner of the 1939 Nobel Prize in Physics for his invention of the

cyclotron, founded the Lab in 1931 and promptly advanced the idea of doing research with multidisciplinary teams of scientists and engineers, treating all members as equal and valuable partners. This “big science” approach to solving problems is still alive and well at the Lab, and aptly describes its mission across all types of research. Likewise, Berkeley Lab has been a partner in many technological innovations in computing and networking.

The Lab’s Computing Sciences organization is a key contributor to scientific research funded primarily by DOE’s Office of Science and conducted at national labs and universities across the country, providing the computing and networking infrastructure essential to collaborative science. Comprising three divisions, Computing Sciences supports fundamental research in networking and computer science and in applied mathematics, and provides high-performance computational and networking tools to researchers in environmental and atmospheric research, fusion energy, structural biology, genomics, chemical and



Horst Simon

materials sciences, and high energy, nuclear, and plasma physics. In all of these fields, high performance computing (HPC) allows researchers to organize and analyze massive amounts of data in short periods of time, and design complex experiments to test theories that advance scientific understanding.

COMPUTING SCIENCES AT BERKELEY LAB

In order to accommodate the demands of advanced scientific research, the Berkeley Lab’s Computing Sciences organization has specialized divisions to manage and allocate the

Lawrence Berkeley National Lab
Continued on Page 5

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Expanding the Pipeline

Plans to Expand the Distributed Mentor Project

By Nancy Amato, Lori A. Clarke, and Jessica Hodgins

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Affiliate Societies



The Computing Research Association's (CRA) Committee on the Status of Women in Computing Research (CRA-W) initiated and oversees the Distributed Mentor Project (DMP). The goal of the DMP is to increase the number of women entering graduate studies in the fields of computer science and computer engineering. It brings together CS&CE undergraduates and faculty for a summer of research at the mentor's research institution. Students become directly involved in research, meet and interact with graduate students and faculty, and work with successful researchers. This experience has proved to be invaluable to those students who are considering applying to graduate school.

Since its inception in 1994, more than 250 students have participated in the program. The most recent evaluation of the DMP, conducted by the LEAD (Learning through Evaluation, Adaptation and Dissemination) Center at the University of Wisconsin, Madison, found that 51.3% of the participants who had graduated had either already obtained a graduate degree or were enrolled in graduate school. This is in contrast to the Baccalaureate and Beyond survey, conducted by the National Center for Educational Statistics in 1994, which found that only 2.53% of women who graduated with a 3.5 or above in CS&CE went on to graduate school, while the rate was 29.19% for the comparable set of male graduates.

As the program has become more widely known, the number of undergraduate and faculty mentor applicants has increased. During the past three years, student applications have increased by about 50% each year. With increased support from the National Science Foundation, the number of selected students has also increased each year, but not nearly as dramatically. Thus, with this increasing interest but limited funding, many qualified undergraduate applicants have not been selected.

To increase the number of qualified students who can participate in the DMP, the program is being expanded in two ways:

1. The DMP is encouraging institutional cost sharing. Recognizing that academic institutions or individual faculty sometimes have access to funds (sometimes earmarked for diversity or outreach efforts), faculty participants will be encouraged to help fund the student's summer research experience when possible. These funds can be used to fully or partially support undergraduate participants. We intend to maintain the same high standards in se-

lecting undergraduate students and faculty mentors. Our goal, however, is to increase the number of qualified undergraduates that can participate. This is especially important as the popularity of the program continues to grow.

2. An Affiliated Distributed Mentor Program (DMP-A) is being initiated that will provide more opportunities for male faculty to participate as mentors. DMP-A mentors provide full funding for their students' stipends. Mentors are selected based on their active research program, appropriateness of undergraduate participation in that program, an active graduate environment, and past mentoring experience, especially with women students. Although the DMP program has always accepted applications from all faculty, qualified women faculty have been given priority since research shows that women faculty are particularly effective role models for encouraging undergraduate women to pursue graduate studies. Hence, it is anticipated that the DMP-A program will enable more qualified students to participate in the DMP, while also providing a good mechanism for male faculty to mentor DMP students.

Students typically work with a faculty member during a ten-week period over the summer. Undergraduates are selected who have demonstrated, through grades and letters of recommendation, that they have the potential to succeed in a graduate program. Undergraduates are usually in their junior year, and have completed a significant number of computer science and related courses so that they have the background to contribute to a research project.

Participating students usually work alongside graduate students on a project and thus are provided an opportunity to experience some aspects of graduate school first-hand. DMP students also interact closely with a faculty member who can explain the goals, directions, and approaches being pursued within the research project, as well as provide career guidance. For many women computer science students, this is their first opportunity to interact with a woman faculty member. Male mentors are encouraged to provide opportunities for DMP students to interact with female faculty and graduate students.

Although many CS&CE faculty engage undergraduates in their research projects, the DMP tries to provide a sense of "community" to the DMP students in order to help

lessen the isolation that is sometimes associated with being a member of an underrepresented group. These activities include such things as receiving material from the DMP program, contributing to the DMP project web pages, and attending conferences where DMP students are gathering. All selected students are considered part of the DMP community, whether a student is teamed with a DMP or DMP-A mentor. DMP students are eligible for financial support to help cover travel expenses to their mentor's institution, attendance at conferences to promote their research, or participation in DMP activities.

The DMP has a rigorous selection process. To apply to be a student participant, students must fill out the web-based application form and provide a current transcript along with two letters of recommendation from faculty members. To apply to be a mentor, faculty must fill out a web-based application form and describe the DMP student projects that they would like to direct. Either a faculty applicant or a student applicant, or both, can request to be paired as a team, but the selection committee may not select a requested team for various reasons. Even if a faculty member is willing to fully fund a DMP student, both the faculty member and student must meet the high selection requirements of the program. This year, application materials for students and mentors were due March 1, 2004.

Student applicants should be attending a U.S. or Canadian college or university, studying computer science or computing engineering, and seriously considering going to graduate school in one of these areas. Priority is given to juniors, but seniors and sophomores with a strong background may also apply. Funding consists of \$600 per week for ten weeks over the summer, plus travel assistance when appropriate. DMP-A mentors are expected to provide \$6,000 or \$12,000 to fund one or two students for the summer.

Many faculty already have undergraduates participating in their research laboratories, so why should they apply to be DMP or DMP-A mentors? There are several possible benefits. The DMP students benefit by participating in DMP community activities. With declining undergraduate enrollments and a declining number of women undergraduates in CS&CE, this provides an opportunity to increase the diversity of those participating in the discipline. Finally, some funding programs, such as the NSF REUs, encourage faculty to increase participation by underrepresented groups. The DMP, in effect, is providing a service where outstanding undergraduates are

Distributed Mentor Project
Continued on Page 6

NSF/CISE Plans for FY2005

By Kamal Abdali, Gregory Andrews, Mari Maeda, Michael Pazzani

At the National Science Foundation, the Directorate for Computer & Information Science & Engineering (CISE) began operating with a new organizational structure in November 2003. This has resulted in numerous changes to date. Several more will occur over the next year. This column describes our plans for the coming year in order to give the community advance notice.

Background

The CISE Directorate was created in 1985, and a relatively minor reorganization took place in 1997. Needless to say, a lot has happened in the past 19 years—or even the past seven. The 2003 reorganization was driven by changes to the field and by four additional objectives: 1) enhance the research portfolio by strengthening the core and addressing important new challenges; 2) increase the synergy between research and education; 3) broaden participation in the CISE workforce; and 4) improve organizational effectiveness. To meet these objectives, we have realigned divisions to mirror the structure of the field, grouped related research topics into clusters, and begun to develop themes for important, crosscutting initiatives.

The CISE home page, www.cise.nsf.gov, reflects the current status of the organization. The remainder of this article summarizes our plans for the divisions and clusters, and hence what the organization will look like for FY 2005, which begins October 1, 2004. The four crosscutting emphases for FY04—Cyber Trust, Education and Workforce, Information Integration, and Science of Design—are described in previous or forthcoming issues of *CRN* and on the CISE web site.

Computing and Communication Foundations (CCF)

CCF supports research and education activities that explore the foundations of computing and communication devices and their usage. CCF inherited many of its activities from the former Division of Computer-Communications Research (CCR), including numeric, symbolic, and geometric computation; software engineering; programming languages and compilers; computer architecture; design automation; signal processing; and communication. CCF has added advanced computational techniques from the former Division of Advanced Computational Infrastructure and Research (ACIR), and quantum and bio-inspired computing from the former Division of Experimental and Integrative Activities (EIA). CCR's systems-oriented programs have moved to the Computer and Network Systems (CNS) division. These additions and subtractions have made CCF a more cohesive division devoted to the foundational issues in computing and communication.

CCF is organized into three clusters:

1. **Formal and Mathematical Foundations.** This cluster seeks to determine inherent limits of computation and communication, and to obtain optimal solutions within those limits. Topics include theory of computing; fundamental algorithms; application-specific theory; and theory, algorithms, and applications for communications research and signal processing.

2. **Computing Processes and Artifacts:** This cluster seeks to advance methodologies pertaining to the artifacts and processes for building computing and communication systems. Topics include software engineering; design and implementation of programming languages; high performance computing; computer architecture; design automation; and computer graphics and visualization.

3. **Emerging Models and Technologies for Computation:** This cluster seeks to explore computational models, techniques, and systems based on emerging and future technologies. Topics include nanotechnology, quantum computing and communication, and computational devices and architectures inspired by the processing of information in living matter.

We were able to transition completely from programs into clusters this year, and to issue one program announcement per cluster, but this took time. While CCR's proposal submission deadlines used to be in November and December, the FY04 deadlines for CCF's clusters are in March. In FY05, we plan to go back to fall deadlines after revising the solicitations in early summer.

Computer and Network Systems (CNS)

CNS supports research and education activities that strive to create innovative computing and networking technologies and systems, to make better use of existing technologies, and to create better abstractions and tools for designing, building, and measuring future systems. The division also supports the computing infrastructure that is required for experimental computer science. CNS has three clusters (and also hosts the CISE Education and Workforce programs and program officers):

1. The **Computer Systems** cluster contains programs and program officers that came from ACIR and CCR: next generation software, distributed systems and operating systems, and embedded and hybrid systems. (The trusted computing program has been subsumed by the Cyber Trust theme.) These programs all had fall deadlines, so this year they are being run as separate programs as in the past. We will create a single program solicitation this spring; the target date for proposals

will be the first week in November.

2. The **Network Systems** cluster was formed from several programs that were in Advanced Networking Infrastructure and Research (ANIR). These programs all had mid- to late-spring deadlines, so we developed a single program solicitation—Research in Networking Technology and Systems (NeTS)—that has an April 14 deadline. We will update that solicitation later this spring and release the new one in late summer. The target deadline for FY05 will be the first week in December.
3. The **Computing Research Infrastructure** cluster contains three programs that were in EIA: minority institutional infrastructure, research infrastructure, and research resources. This year, all three are being run as in the past. We are developing a single program solicitation that will subsume and expand all three programs. The anticipated deadline date is mid-August, so we will be releasing the solicitation by mid-May. The reason for the new date is to be out of phase with the mid-January deadline of the NSF-wide Major Research Instrumentation (MRI) program.

Information and Intelligent Systems (IIS)

The Division of Information & Intelligent Systems contains the programs that were in the prior IIS division, and it added activities from EIA. IIS is organized into three clusters:

1. The **Science and Engineering Informatics** cluster supports research and education focused on advances in information technology that address problems in specific sciences and

engineering domains (e.g., biology, geology, chemistry). In FY04 this cluster has a solicitation for Science and Engineering Information Integration and Informatics that supports research in areas such as bioinformatics, geoinformatics, and others, and a Joint NSF/NIH Initiative to Support Collaborative Research in Computational Neuroscience.

2. The **Data Inference and Understanding** cluster supports basic computer science research and education with the goal of creating general-purpose systems for representing, storing, and accessing data, information, and knowledge. It also supports research and education in automated methods of drawing conclusions from data and knowledge. Topical areas in this cluster include: artificial intelligence and cognitive science; information and data management; digital libraries; computer vision; and human language and communication.
3. The **Systems in Context** cluster supports research and education on the interaction between information, computation and communication systems and users, organizations, government agencies, the scientific community, and the external environment. Topical areas include: human-computer interaction; digital society and technologies; data and applications security; digital government; and robotics.

In FY2004, each program had a separate solicitation with a single deadline in the late fall through the winter. All programs in IIS will make the vast majority of funding decisions in time to allow PIs to make commitments to initiate research projects by the summer. In FY05, we anticipate a

NSF/CISE Plans
Continued on Page 6

Transitions and Awards

Charles N. Brownstein has been appointed director of the Computer Science and Telecommunications Board of the National Academies. Since 1994, Dr. Brownstein has been with the Corporation for National Research Initiatives (CNRI) where he directed the Cross Industry Working Team and did independent research. Prior to that, he served at NSF as Program Director for Telecommunications Policy and Applications, Division Director for Information Science and Technology, and Deputy Assistant Director and Assistant Director of NSF for Computer and Information Science and Engineering.

Congratulations to CRA board member, **Lori Clarke** (University of Massachusetts, Amherst) who recently received the Distinguished Engineering Alumni Award for 2004 from the University of Colorado at Boulder.

The IEEE Computer Society Board of Governors has awarded CRA board member **Eugene Spafford** the 2003 Taylor L. Booth Award. The award is presented for an outstanding record in computer science and engineering education.

The NSF Directorate for Computer and Information Science and Engineering has named **Dr. Sangtae Kim** as the new Director for the Division of Shared Cyberinfrastructure, effective February 17, 2004. ■

Recent Trends in Doctorates Awarded in the Computer Sciences

By Jay Vegso

Figures released by the National Science Foundationⁱ for doctorates received in 2002 show a continued general decline in recent years in the number of degrees granted in the computer sciences (CS). The number of CS doctorates awarded peaked at 997 in 1995. In the following seven years, that number declined nearly 19 percent, to 811 in 2002.

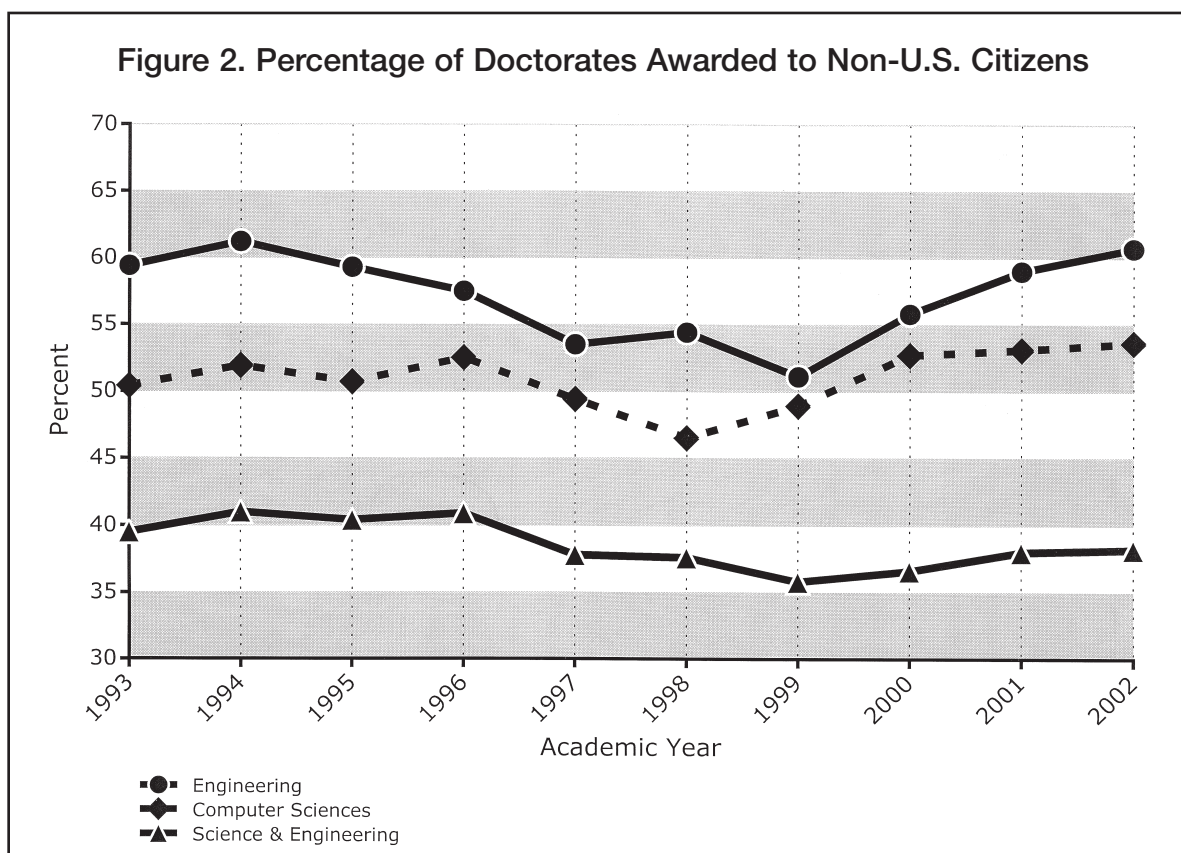
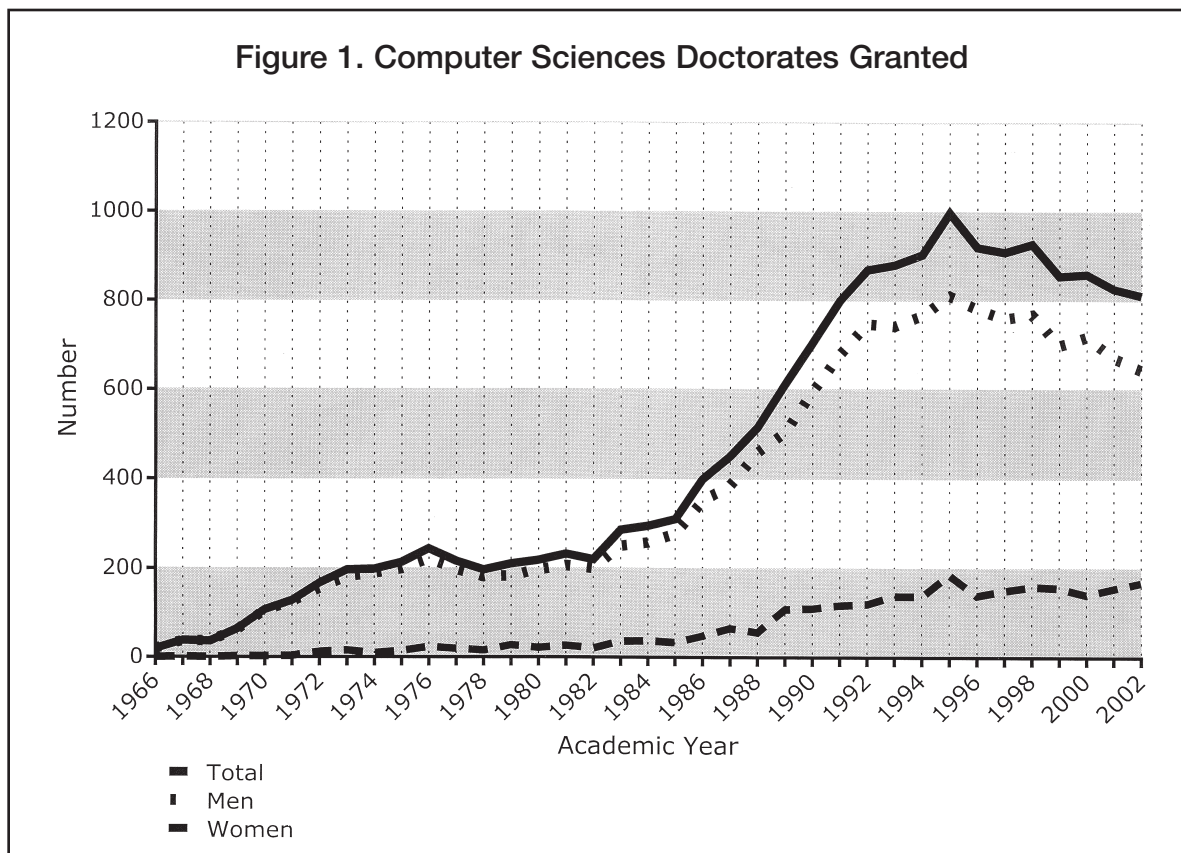
On a more positive note, the portion of CS doctorates awarded to women has slowly increased in the past few decades (Figure 1). In 2002, the 168 doctorates received by women represented nearly 21 percent of those granted. This was the first time that women had received more than 20 percent of CS doctorates. In comparison, women received 18 percent of Engineering doctorates in 2002, and 37 percent of all Science and Engineering doctorates. Data from another NSF reportⁱⁱ show that women received between 25 percent and 30 percent of CS Master's degrees for much of the 1980s and 1990s, with a jump up to 34 percent in 2000 (the most recent year covered by the report). On the undergraduate level, however, women have done less well in recent years. Between 1980 and 1990, women received between 30 percent and 37 percent of Bachelor's degrees in CS. Since then, however, this figure has hovered below 30 percent.

In 2002, non-U.S. citizens received 54 percent of CS doctorates in cases where the citizenship of the recipients was known (Figure 2). This conforms to a recent trend: non-U.S. citizens were awarded more than one-half of CS doctorates in seven of the ten years leading up to 2002. In comparison, 38 percent of all Science and Engineering doctorates and 61 percent of Engineering doctorates were awarded to non-U.S. citizens in 2002.

More trends from the NSF's data on computer science degrees have been posted on the CRA website at <http://www.cra.org/info/education/us/>. The results of CRA's own Taulbee Survey of Ph.D.-granting computer science and computer engineering departments in the United States and Canada were provided to departments that participated and to CRA members in February, and will be published in the May issue of *Computing Research News*.

ⁱ National Science Foundation, Division of Science Resources Statistics, Science and Engineering Doctorate Awards: 2002, NSF 04-303, Project Officer, Susan T. Hill (Arlington, VA 2003).

ⁱⁱ National Science Foundation, Division of Science Resources Statistics, Science and Engineering Degrees: 1966-2000, NSF 02-327, Author, Susan T. Hill (Arlington, VA 2002). ■



NAE Announces New Members and Foreign Associates

Congratulations to all members of the CSE community who were recently elected members and foreign associates of the National Academy of Engineering.

CRA board member, Alfred Z. Spector (IBM Corp.) was elected a member. Others from CSE included Rodney A. Brooks (MIT), Zvi Galil (Columbia University), Van Jacobson (Packet Design LLP), Biing-Hwang (Fred) Juang (Georgia Institute of Technology), Frank T. Leighton (MIT), Joan L. Mitchell (IBM Corp.), A. Richard Newton (University of California, Berkeley), Raymond E. Ozzie (Groove Networks Inc.), Lawrence Page (Google), Linda R. Petzold (University of California, Santa Barbara), Gary K. Starkweather (Microsoft Corp.), G.W. (Pete) Stewart (University of Maryland, College Park), Bjarne Stroustrup (Texas A&M University), and Victor W. Zue (MIT). James Allen Gosling (Sun Microsystems, Inc.) was elected a foreign associate of NAE.

According to the NAE press release dated February 13, 2004, election to the National Academy of Engineering is among the highest professional distinctions accorded to an engineer. Academy membership honors those who have made "important contributions to engineering theory and practice, including significant contributions to the literature of engineering theory and practice," and those who have demonstrated accomplishment in "the pioneering of new fields of engineering, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education."

The Academy elected a total of 76 new members and 11 foreign associates. A list is provided on the NAE website (<http://www.nae.edu>).

**Lawrence Berkeley National Lab
from Page 1**

computing tools and technologies to the DOE research community.

The National Energy Research Scientific Computing Center (NERSC) provides high performance computing, networking resources and expertise to DOE researchers nationwide. As the DOE's flagship facility for unclassified computing, NERSC provides leading-edge platforms and services, including the 6,656-processor IBM supercomputer "Seaborg" with a peak performance of 10 teraflop/s. NERSC also operates a High Performance Storage System with a total data archiving capacity of 8 petabytes. Beyond sheer computing power, NERSC's staff provides a full range of services, including scientific user support, 24x7 operation and visualization techniques to help users get the best performance and results from their applications. NERSC is currently used by some 2,300 researchers at national labs and universities scattered around the country.

The Computational Research Division (CRD) conducts applied research and development in computer science, computational science, and applied mathematics to create computational tools and techniques that support scientific research. Developments in all of these areas help improve the performance and efficiency of high-performance computing systems and the applications that run on them. The CRD staff collaborates directly with scientists—in fields ranging from materials sciences to climate modeling to astrophysics—to solve computational and data management problems. They also create visualizations to help scientists gain new physical insights and make the data more comprehensible. The DOE Science Grid is another fundamental part of CRD, and provides an advanced distributed computing infrastructure based on Grid middleware, and tools to enable the degree of scalability in scientific computing necessary for DOE to accomplish its missions in science.

The Information Technologies and Services Division (ITSD) supports computational science by managing the Lab's computing infrastructure, supplying networking and telecommunication services, and providing technical assistance to Lab scientists. ITSD also handles cyber security for the Lab, and has developed some of the most sophisticated monitoring and detection tools available and shares its expertise with other DOE labs and networks. ITSD also manages DOE's Energy Sciences Network (ESnet)—a high-speed, general-purpose IP-based production network that connects national laboratories, universities, and other institutions around the world—to support DOE research missions. ESnet services allow scientists to make effective use of unique DOE research facilities and computing resources, independent of time and geographic location.

LAB STAFF

In order to achieve these goals, the Computing Sciences organization brings together specialists from a variety of fields to collaborate in building customized applications and the expertise to make them run quickly and efficiently on leading-edge systems. Many of the Lab's researchers have a background in math, physics, chemistry and other traditional sciences, in addition to computer science, and the combination of these skills helps them design applications and tools to solve even the most complicated scientific puzzles.

The staff also brings together industry, academic, and lab experience, which makes for a valuable resource in designing and executing research projects. There are approximately 500 joint staff appointments with the University of California, Berkeley, ensuring that the Lab benefits from a steady flow of information between the two institutions. Given the dynamic nature of the work at the Lab, researchers and scientists find new areas to apply their skills and new projects where their expertise is needed. It is not unusual to find staff members who have been around for more than a decade, or two or three, and others who return to work not long after their retirement parties.

The Lab, in total, employs about 4,300 people, including nearly 1,000 staff scientists, 1,000 undergraduate students, graduate students, and post-doctoral fellows, and more than 1,500 technical and support personnel. In addition, each year the Lab hosts more than 2,000 participating guests.

ACHIEVEMENTS

From the earliest days of scientific computing, Berkeley Lab has taken a leadership role in deploying and applying systems for research. In the 1950s, Luis W. Alvarez opened a new era in high-energy physics research with his proposal to build a pressurized chamber filled with liquid hydrogen. Known as a "bubble chamber," this device would allow scientists to discover and study new particles. In his 1955 prospectus for such a facility, Alvarez became one of the first scientists to propose using computing devices for analyzing experimental data, even before such computers were actually available.

By the 1960s, Alvarez's vision was reality as LBNL researchers used computers to track some 1.5 million particle physics events annually and developed scientific computing techniques that were adopted by researchers around the world. This effort led to Alvarez receiving the Nobel Prize for Physics in 1968.

Here are some of the Lab's other computing and networking achievements:

- In 1974, LBNL connects its CDC 6600 computer to ARPANET, making it the first online supercomputer.
- In 1985, ARPANET (the forerunner of the Internet), was collapsing due to congestion of data transmission. The TCP congestion control algorithms

from Van Jacobson's 1988 paper on congestion avoidance and control become Internet standards in 1989. In 1986, the network was plagued with routing instability between the many connecting systems, resulting in many transmissions being lost. Lab experts developed a tool to trace data packets along the way, allowing routing problems to be pinpointed and corrected.

- Van Jacobson and Steven McCanne of LBNL win one of *R&D Magazine's* 1995 R&D 100 Awards for development of a software toolpack that enables multiparty audio and visual conferencing via the MBone (Multicast Backbone).
- In 1998 Vern Paxson of LBNL is honored at a security conference for his paper "Bro: A System for Detecting Network Intruders in Real-Time." Two years later, logs generated by Bro help the FBI convict a hacker for breaking into DOE and DoD computers.
- In 1999, the first IPv6 address is assigned to ESnet, which plans to demonstrate the viability of using IPv6 to run scientific applications on the Internet.
- When DOE launches its Scientific Discovery through Advanced Computing (SciDAC) program in 2001, LBNL is selected as the lead lab for six projects. These include the Scientific Data Management Integrated Software Infrastructure Center, which will provide a coordinated framework for the unification,

development, deployment, and reuse of scientific data management software; High-End Computer System Performance, which focuses on how specific scientific applications can best be run on high-performance computers; and a multi-laboratory collaborative project to develop, evaluate and deploy the needed services to support the DOE Science Grid.

- LBNL and UC Berkeley launch the Berkeley UPC compiler project in 2002 to develop a portable, high performance implementation of UPC for large-scale multiprocessors, PC clusters, and clusters of shared memory multiprocessors.
- In December 2003, NetworkWeekFusion names LBNL's Michael Bennett as one of the 50 most influential people in networking on a list dominated by leaders of network and computer companies.

GUIDANCE

Berkeley Lab is managed by the University of California for DOE. The Lab's funding is primarily from DOE and supports research in the Office of Science's six major programs: Advanced Scientific Computing Research; Basic Energy Sciences; Biological and Environmental Research; Fusion Energy Sciences; High Energy Physics; and Nuclear Energy Physics.

Horst D. Simon is Director, NERSC Center and Computational Research Divisions, Lawrence Berkeley National Laboratory. ■

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Postmaster: Send address changes to: CRA, 1100 Seventeenth Street, NW, Suite 507, Washington, DC 20036-4632. Postage paid at Washington, DC.

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**FY05 Budget
from Page 1**

Health and Human Services—which includes NIH— would receive \$371 million in FY 2005, an increase of \$3 million. The Environmental Protection Agency (EPA) would remain unchanged from FY 2004 at \$4 million.

The President's plan would increase NSF's overall budget by 3 percent in FY 2005, to \$5.745 billion. Included in the plan is a 2.2 percent increase to NSF's Computer and Information Science and Engineering directorate to \$615 million in FY 2005. Five areas would receive priority funding in FY 2005:

1) Nanoscale Science and Engineering; 2) Biocomplexity in the Environment; 3) Mathematical Sciences; 4) Human and Social Dynamics; and 5) Workforce for the 21st Century. NSF's Information Technology Research (ITR) priority, one of four NSF programs rated "effective" (the highest designation) by OMB reviewers, is scheduled to end in 2004, and program funds will revert to "NSF's fundamental science and engineering core in 2005," according to the administration plan.

While overall Research and Related Activities funding would rise

to \$4.45 billion in FY 2005 (an increase of 4.7 percent), NSF's Education and Human Resources directorate would see a significant reduction to \$772 million in FY 2005, down from \$939 million in FY 2004—an 18-percent decline. The bulk of this decline appears to be the administration's request to move the directorate's Math and Science Partnerships program out of NSF and to the Department of Education. This proposed change has already generated swift criticism from House Science Chairman, Sherwood Boehlert (R-NY), who noted his committee would fight the move "tooth and nail."

The President's budget also includes \$204 million "to advance U.S. leadership" in high-end computing research at the Department of Energy in FY 2005. The request includes \$38 million for the Next Generation Computer Architecture, as well as a second funding account for super-computing work at the National Nuclear Security Agency (NNSA).

Other agency highlights include a \$3.7 billion increase requested for the Department of Homeland Security, a move that would bring the agency's budget to \$40.2 billion for FY 2005. Included in that funding is \$1.039

billion for FY 2005 for the department's Science and Technology directorate, up from \$913 billion in FY 2004. DHS Assistant Secretary for Science and Technology, Penrose Albright, indicated that "30 to 40 percent" of that \$1 billion would be directed toward the department's DARPA-esque research agency, the Homeland Security Advanced Research Projects Agency (HSARPA).

The administration had warned for several months that this budget was going to be particularly tight. Several areas received priority: winning the war on terror, protecting the homeland, strengthening the economy, and "supporting key priorities like education, health care, and helping Americans most in need." In addition, the President required that the budget put the government on course to halve the \$521 billion budget deficit in five years, and that it keep spending growth to less than 1 percent in areas not related to defense and homeland security.

Marburger and Peacock also emphasized the administration's growing concern over the proliferation of "congressionally directed" programs—programs not competitively funded or peer-reviewed—throughout the research and development

budget. These congressional earmarks, they said, now total more than \$2.0 billion and account for nearly 8 percent of all university funding. Asked whether the administration, in addition to "zeroing out" the earmarks in future budgets, would withhold funding for earmarked projects in the current year, Marburger and Peacock both cited the political difficulties surrounding such a move and said it was unlikely.

The President's budget request marks the start of the annual federal budget and appropriations cycle. In the coming weeks, Congress will begin work on its own budget, culminating ultimately in the passage—likely later this fall—of the 13 annual appropriations bills that fund all federal government activities. Congress is not obligated to accede to the President's budget request; however, the President's budget serves as a useful baseline as the process moves forward.

For more detail on plans and priorities for computing research in specific agencies (unavailable at press time), check the CRA Government Affairs website at <http://www.cra.org/govaffairs/>. ■

**NSF/CISE Plans
from Page 3**

solicitation per cluster with deadlines in late summer to mid fall. The digital library research within IIS will focus on core research issues that will enable the next generation of digital libraries. Artificial Intelligence funding will encourage projects that integrate several modes of intelligence (e.g., reasoning, learning, planning, and representation).

Shared Cyberinfrastructure (SCI)

The Division of Shared Cyberinfrastructure supports design, development, and deployment of a broad spectrum of information technology systems that facilitate and accelerate scientific discovery and engineering research. The SCI portfolio builds on projects funded initially by programs in the ACIR and ANIR divisions, but is also expected to expand and grow in scope and size. While the division is not organized into clusters, key areas of activity supported include:

- **High-End Computational Infrastructure:** SCI supports acquisition, operation, and upgrading of national infrastructure in support of high-end computation for the academic research and education community.

- **Advanced Networking Technologies and Infrastructure:** SCI supports networks of various reach and granularity, from international and domestic high-speed networks to regional or local wireless

networks. Some of the key areas of interest include end-to-end networking protocols; performance monitoring tools and measurement infrastructure; wireless networks; strategic international links; and testbeds to support trial deployments.

- **Advanced Services and Software:** There is a growing need for development of robust software that increases the application capabilities, offers abstractions that hide the underlying complexities, and enhances the usability of the overall system. Included in this category are middleware software, data services, and visualization tools, to name a few.

In FY04, solicitations are being issued to expand the middleware and other software portfolio; to support international networking links between US research and education networks with international counterparts; and to seek new projects that emphasize education, outreach, and training. Due to the complexity of many of the programs, we are currently making a careful assessment of the application community needs as well as the state-of-the-art in the near- to mid-term technology base, and the FY05 plans are currently still under development.

The authors are the Directors of the four NSF-CISE divisions: Kamal Abdali (Computing & Communication Foundations), Gregory Andrews (Computer & Network Systems), Mari Maeda (Shared Cyberinfrastructure), and Michael Pazzani (Intelligent Information Systems). ■

Making History

**Grace Hopper Celebration of Women in Computing
2004 Conference**

October 6-9, 2004—Chicago, Illinois
Details: <http://www.gracehopper.org/cfp.html>

**Distributed Mentor Project
from Page 2**

matched with faculty doing research in an area that interests them. We encourage faculty members to support the DMP programs by applying to be mentors and by helping to fund students when possible.

Industry can help too! Funding for the DMP and other CRA-W outreach programs is an ongoing concern. The National Science Foundation has been providing the majority of the funds for this program. The DMP has also been supported by the Education, Outreach, and Training program of NSF's Partnerships for Advanced Computational Infrastructure (NPACI) (1998-2002), USENIX (2001, 2003), AAI (2002), and the Henry Luce Foundation (2004-2006). The NSF, however, cannot continue to fund ongoing projects. The CRA-W must find new funding sources if this program is to continue as well as grow. Companies and foundations can help by donating funds to the Computing Research Association that are earmarked to support the DMP and other diversity programs, such as Collaborative Research Experiences for Women (CREW). For more information about the CRA-W donors' program, contact Lori Clarke at clarke@cs.umass.edu.

This year, the DMP program is being co-chaired by Nancy Amato, Texas A&M University, and Jessica Hodgins, Carnegie Mellon University. For more information about the DMP, consult the DMP webpages, <http://cra.org/craw/dmp/>, or send your questions to dmp@cs.tamu.edu.

Nancy Amato (Texas A&M University) and Jessica Hodgins (Carnegie Mellon University) co-chair CRA-W's Distributed Mentor Program. Lori A. Clarke (University of Massachusetts, Amherst) is a member of both CRA-W and the CRA Board of Directors. ■

Professional Opportunities

Augustana College (Illinois) Department of Mathematics and Computer Science *Tenure-Track Position in Computer Science*

The Department of Mathematics and Computer Science at Augustana College, Rock Island, Illinois, invites applications for a tenure track position in Computer Science starting September 1, 2004.

The Department has nine faculty positions. Major and minor are offered in mathematics and in computer science/mathematics. The departmental curriculum evidences (1) commitment to computer science and mathematics as complementary areas of study as well as disciplines in their own right, and (2) the role of computer science and mathematics as tools in a liberal arts college community. Courses offered in the department include Database Management Systems, Computer Architecture, Operating Systems, Computer Networks, Data Structures and Algorithms, and Programming Language Principles. The standard teaching load is seven 3-credit courses per year (trimester calendar). It is expected that the person in this position will take an active part in departmental matters, will be active in advising students and supervising independent studies, and will contribute to the faculty role in institutional governance. Candidates are expected to have a commitment to excellence in teaching and professional growth. Ph.D. is required for tenure.

Augustana is a private liberal arts college affiliated with the Evangelical Lutheran Church in America. Augustana is an E.O. employer and encourages applications from women and minorities. Send letter of application, curriculum vitae, statement of teaching philosophy, graduate school transcript, and three letters of recommendation to:

Dr. Ellen Hay
Dean of the College
Augustana College
639 - 38th Street
Rock Island, IL 61201-2296
Visit us at www.augustana.edu

Bryn Mawr College Computer Science Department *Assistant Professor of Computer Science*

Applications are invited for a position in Computer Science within the rank of Assistant Professor. Prior experience is preferable. We are seeking an individual to participate in a novel computer science program at Bryn Mawr College, a leading liberal arts college for women. The program offers a minor in Computer Science, an interdisciplinary minor in Computational Methods, and independent majors in Computer Science and other related areas. Candidates from all areas of Computer Science will be considered although interdisciplinary research areas are most desirable. Research areas already represented in the department include Artificial Intelligence, Cognitive Science, Compiler Design, Complexity Theory, and Robotics. The successful candidate will be expected to teach a wide range of courses and to involve undergraduates in her/his research.

Candidates should include a letter of application, a curriculum vitae, a statement of teaching philosophy, a description of research plans, a writing sample or reprints, and at least three current letters of reference. Review of applications will begin immediately and will continue until the position is filled. Please send materials to:

Computer Science Search
Computer Science Program
247 Park Science Building
Bryn Mawr College
101 North Merion Ave.
Bryn Mawr, PA 19010

Bryn Mawr College is an equal-opportunity, affirmative action employer.

Caltech *Information Science and Technology*

Caltech's Information Science and Technology initiative seeks candidates for two faculty positions.

Details: <http://www.ist.caltech.edu/positions.html>

Drexel University College of Engineering *Head, Department of Computer Science*

The Department of Computer Science seeks nominations and applications for the position of Department Head. The Department offers an ABET accredited undergraduate program in computer science, as well as a new program in software engineering. It is one of six departments within the College of Engineering, which is well known for its commitment to graduate research and cooperative education and for its leadership in developing innovative approaches to computer science education. Drexel's Computer Science Department has rapidly expanding graduate research and education programs in Software Engineering, Graphics, AI, Networks, Information Assurance and Security, HCI, and Scientific Computing.

We are seeking a dynamic individual with outstanding leadership and administrative skills, proven abilities in research and teaching, and a doctorate in computer science or a closely related field. The candidate should have a strong interest in leading development activities, and in interacting with government, industry, and professional societies. Further, the candidate should be able to work with a diverse group of faculty, staff, students and administrators to achieve common goals and to maintain rapport with alumni and industrial representatives.

Consideration and review of applications begins immediately and is expected to continue until the position is filled. To be considered, please send cover letter, CV along with names and contact information for at least six references to:

Department Chair Search Committee
College of Engineering
Drexel University
Philadelphia, PA 19104
Email: search_chair@coe.drexel.edu
Electronic submissions to search_chair@coe.drexel.edu in PS/PDF format are preferred.

Drexel University provides affirmative action and equal opportunity in employment for all qualified persons regardless of race, color, religion, national origin, age, sex, disability or veteran status. Each student, faculty or staff, interacting with any part of the University will be treated equally, and will be given the same opportunities as provided to any other person in similar circumstances.

Drexel University is an Equal Opportunity/Affirmative Action Employer.

For more information:
Department of Computer Science
<http://www.cs.drexel.edu>
College of Engineering
<http://www.coe.drexel.edu>
Drexel University
<http://www.drexel.edu>

Indiana University Computer Science Department *Faculty Position*

The Indiana University Computer Science Department anticipates filling a tenure track, assistant professor position beginning in the fall of 2004. Though applications from all areas of computer science are welcome, we are strongly interested in candidates with research interests in embedded systems, algorithms and programming languages.

The CS department, which is part of the College of Arts and Sciences, is working closely with our new School of Informatics which is also seeking to fill CS related positions.

A Ph.D. in Computer Science is required for all CS faculty positions. Applicants must have demonstrated potential for excellence and productivity in research. In addition, a strong contribution to the educational mission of the department is expected.

The department occupies a spacious limestone building with extensive state-of-the-art computing facilities. The attractive wooded campus of Indiana University is located in Bloomington, chosen as one of the most cultural and livable small cities in the US, and only one hour from the Indianapolis airport. To learn more about the department please visit our web site at www.cs.indiana.edu.

Please send a detailed CV and a list of references to:

Faculty Search
Computer Science Department
Indiana University
Lindley Hall 215
Bloomington, IN 47405-7104
email: search@cs.indiana.edu

Indiana University is an Equal Opportunity/Affirmative Action Employer. The Computer Science Department strongly encourages applications from women and minorities.

Indiana University Bloomington School of Informatics *Tenure-Track faculty positions starting Fall 2004*

The School of Informatics is the most important academic initiative at Indiana University in the past 30 years. Informatics is the study of information and information technology in its applied and social contexts.

The State of Indiana has committed new base funding that will allow the School to hire as many as 60 additional faculty over the next few years, 35 on the Bloomington campus.

Our current faculty are strong researchers committed to teaching and mentoring, holding prestigious recognitions such as ACLS, Fulbright and NSF Career Awards, and memberships such as the CRA Board and the NSF CISE Directorate Advisory Committee. Their specialties include bio- and chemical informatics, human-computer interaction design, Web, text, and data mining, social and organizational informatics, and logical and mathematical foundations of informatics. Tenure-track positions at all ranks are available in these areas as well as in cybersecurity, music informatics, informatics of other scientific disciplines, new media, complex systems, modeling and simulation, and ethics and professionalization.

The School has strong ties to Computer Science, natural science departments, and other units at IU; joint appointments are possible. We have excellent work conditions including low teaching loads, attractive salaries, and world-class computing and library facilities. Located on the rolling wooded hills of southern Indiana, Bloomington is a culturally thriving college town with moderate cost of living. IU is committed to employing quality faculty who will enhance the rich diversity of our academic community.

We especially encourage applications from small research teams who wish to collaborate with one another at IU in the School of Informatics. Each candidate should apply separately, and include in their statement the rationale for hiring the entire group. Applicants should submit a curriculum vitae, a statement of research and teaching, and the names of three references (six for associate and full professors) online at <http://www.informatics.indiana.edu/positions/faculty/>. Review of applications will begin immediately; the search will remain open until the positions are filled.

Lamar University Computer Science *Assistant Professor*

Applications are invited for at least one tenure-track position beginning in the Fall of 2004. Requirements include a Ph.D. in computer science, strong commitment to teaching, and demonstrated research ability. The normal teaching load is 9 hours per semester. Candidates with expertise in computer architecture, graphics, simulation, and network security are particularly encouraged to apply, but applicants in all areas of computer science will be seriously considered.

Applications, including curriculum vitae, at least three letters of recommendation, one of which should address teaching

(continued)



**HARVARD
UNIVERSITY**

*Faculty of Arts
& Sciences*

**DIVISION OF ENGINEERING
AND APPLIED SCIENCES**

Assistant Dean for Undergraduate Studies

Harvard University's Division of Engineering and Applied Sciences (DEAS) invites applications for a newly created position of Assistant Dean for Undergraduate Studies. DEAS is currently undergoing significant renewal and growth. The Assistant Dean will work closely with the Dean, the Associate Dean for Academic Programs and faculty in overseeing the Division's three undergraduate programs in Applied Mathematics, Computer Science and Engineering Sciences. The candidates should be passionate and creative about energizing and expanding undergraduate education. Responsibilities include coordinating student outreach efforts, working with faculty to advise students on curriculum requirements and course selection, providing support to encourage student research and career development; overseeing and modernizing teaching laboratories. The position will carry an opportunity to teach. Applicants should have a Ph.D. in applied science, computer science or engineering. Prior teaching and/or laboratory administrative experience highly desirable. **Req. #18657**

Applicants should submit a CV, publication list and 3 references.

Applications and nominations should be sent to: Office of the Dean, DEAS, Harvard University, 29 Oxford Street, Cambridge, MA 02138. Apply online at [www.atwork.harvard.edu/employment_requisition #18657](http://www.atwork.harvard.edu/employment_requisition_18657).

Harvard University is an equal opportunity, affirmative action employer.

Professional Opportunities

qualifications and a cover letter should be sent to:

Chair, Search Committee
Department of Computer Science
P.O. Box 10056
Lamar University
Beaumont, TX 77710
Contact Person: Lawrence J. Osborne
E-mail: osborne@cs.lamar.edu

Applications may be submitted electronically to cs_search@cs.lamar.edu. Review of applications will begin immediately and will continue until the position is filled.

Lamar is a comprehensive public university of 10,000 students in the Texas State University System. It is located in Beaumont, approximately 90 miles east of Houston and 30 miles from the Gulf of Mexico. More information can be found at <http://www.lamar.edu>.

Lamar University is an affirmative action/equal opportunity employer.

Northwestern University
Department of Computer Science
Faculty Openings: AI, Systems, and Theory at All Ranks <http://www.cs.northwestern.edu>

The Computer Science Department at Northwestern University invites applications for three or more faculty positions at all professorial ranks in all areas with emphasis on AI, Systems, and Theory. Northwestern has built an excellent core faculty with expertise in artificial intelligence, bioinformatics, design, distributed and parallel systems, e-commerce, educational technology, graphics, information systems, multimedia systems, robotics, and theoretical computer science. Building on these core areas and broadening to other strategic areas of computer science, we have now embarked on a campaign to attain national leadership at the forefront of computer science. We seek ambitious, energetic, and innovative candidates to join this young, dynamic, and rapidly growing department and encourage applications from

qualified underrepresented minorities and women.

Successful candidates must have demonstrated commitment to teaching as well as strong abilities to pursue research. Typical teaching load is three quarter courses per year. The department will move to a new \$35 million building in 2005. Compensation and start-up packages will be highly attractive.

Northwestern is a top-ranked and well-endowed private university. It attracts the brightest students from all fifty states and from around the world. The main campus is located on the Lake Michigan shore in Chicago's upscale north suburb of Evanston. With its combination of natural beauty, rich culture and the nation's finest school districts, this area has long been recognized as one of the most desirable places to live in the U.S. Applicants should send a curriculum vitae, statement of research and career objectives, and at least three references for junior positions and five for senior positions, by email to: faculty-search@cs.northwestern.edu or by postal mail to:

Faculty Search Committee
Department of Computer Science
Northwestern University
1890 Maple Avenue
Evanston, IL 60201

To ensure full consideration, applications should be received by January 12, 2004. Preference will be given to early applications, and interviews may start in late fall, 2003. Further information about the Department and the University can be found at <http://www.cs.northwestern.edu> and <http://www.northwestern.edu>.

Northwestern University is an Equal Opportunity, Affirmative Action employer.

Oakland University
Department of Computer Science and Engineering
Tenure-Track Faculty Positions

The Department of Computer Science and Engineering invites applications for two tenure-track positions at the assistant professor level. Applicants must have completed a Ph.D. in Computer Science, Computer Engineering, or a closely related field by the appointment date. Candidates must show exceptional promise in both research and teaching. Desired areas of interest include databases, software engineering, operating systems, and networking. Exceptional candidates from others may be considered.

Applications should be submitted by February 20, 2004 but will be accepted until the positions are filled. Applicants should send a letter of intent, resume and the names of three references to:

Professor Ishwar K. Sethi, Chair
Department of Computer Science and Engineering
Oakland University
Rochester, MI 48309-4478
Email: isethi@oakland.edu
URL: www.cse.secs.oakland.edu

Oakland University is an affirmative action/equal opportunity employer and encourages applications from women and minorities.

Purdue University
School of Electrical and Computer Engineering
Faculty Positions

The School of Electrical and Computer Engineering at Purdue University invites applications for faculty positions across the breadth of computer science and computer engineering at all levels.

The Computer Engineering Area of the school (engineering.purdue.edu/ECE/Research/Areas/CompEngr) has eighteen faculty members who have active research programs in areas including the following: artificial intelligence, cluster computing, compilers, computational linguistics, computer architecture, computer graphics, dependable computing, design automation, distributed systems, energy efficient systems, haptics, high performance computing, human computer interaction, information security, intrusion tolerance, IT for education, machine learning, machine vision, micro architecture, multimedia systems, multimodal user interfaces, network computing, networking, operating systems, pedagogical agent learning systems, performance evaluation, sensor networks, software engineering, spoken language processing, systems architecture, and visualization. We will consider outstanding applicants in these and other areas.

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

Applications should consist of a cover letter, a cv, a research statement, names and email addresses of five references, and URLs of three to five papers. Applications, in the form of a single attached PDF file, and inquiries can be sent to: compengr@ecn.purdue.edu or contact Connie Boss at 765-494-3649.

Candidates should also arrange for five reference letters to be sent directly to the above email address. Applications will be considered as they are received.

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

Southern Illinois University Carbondale
Computer Science
Department Chair

Southern Illinois University Carbondale invites applications for the position of Chair of the Department of Computer Science. The position will begin on August 16, 2004. The Chair is the chief academic, administrative, and fiscal officer of the Department. The Chair's duties consist of administrative, teaching and research activities. Southern Illinois University Carbondale is located approxi-

mately 110 miles southeast of downtown St. Louis. It is a comprehensive university with more than 21,000 students. The Department of Computer Science offers B.S., B.A., and M.S. degrees.

Candidates must have a doctorate degree in computer science or computer engineering and qualify for tenure at the rank of associate or full professor. Candidates should have a strong record of research as evidenced by publications and external funding in any field of computer science. Additionally, we are seeking an individual with administrative experience who can head the Department's effort to implement a successful Ph.D. program and increase the unit's research productivity and external funding. Candidates must also possess a strong commitment to quality teaching at both undergraduate and graduate levels.

Review of completed applications will begin on March 12, 2004 and continue until the position is filled. Applicants should send a letter of interest summarizing qualifications, curriculum vitae, and have at least three of their references send recommendation letters directly to:

Chair Search Committee
Department of Computer Science
Faner 2125 Mailcode 4511
Southern Illinois University
Carbondale, IL 62901-4511

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

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

Texas A&M University-Corpus Christi
Department of Computing Mathematical Sciences
Associate Professor or Professor of Computer Science

Texas A&M University-Corpus Christi, the Island University, located on the sunny South Texas coast, is seeking applicants for a tenure-track faculty position in computer science at the Associate/Professor level. TAMU-CC is the fastest growing university in Texas, and has been ranked the top public regional university in Texas two years in a row by U.S. News & World Report. The Department of Computing and Mathematical Sciences currently offers academic programs in computer science (BS, MS) that strongly emphasize the application of computing.

We are planning to offer a Ph.D. in Applied Computing with an emphasis in environmental applications. We are seeking an individual with research interests in modeling, simulation, and visualization who has experience in advising Ph.D. students. The successful candidate will have the opportunity to play a major role in planning and developing our new Ph.D. program. A Ph.D. in computer science or closely related area is required.

Applicants should send a letter of application, a curriculum vitae, unofficial copies of graduate transcripts, and arrange to have three letters of recommendation sent to:

College of Science & Technology
Attn: Ken Brown
Texas A&M University-Corpus Christi
6300 Ocean Drive (FC-179)
Corpus Christi, TX 78412

The position is available Fall 2004. Primary consideration will be given to applications received by June 1, 2004.

TAMU-CC is an Equal Opportunity Employer committed to diversity.
<http://www.tamucc.edu>

KENT STATE UNIVERSITY

Tenure-Track Position in Computer Science (No. 212730 CRA)

Kent State University invites applications for five tenure track faculty positions in Bioinformatics, Biotechnology, Cell/Molecular Biology, Microbiology and Science Education beginning in Fall 2004, to support a strong multidisciplinary effort focused on understanding cell systems. To support this effort, Kent State University is investing in academic programs that will provide a strong research focus on the regulation of cell function. Outstanding core facilities for genomics, proteomics, bioimaging, computation and data visualization are available to support a wide range of research interests and approaches to questions addressed at the cell and molecular levels. Successful candidates will be expected to develop a high quality and externally funded research program and exhibit a commitment to excellence in graduate and undergraduate education. We seek individuals for one of the positions: The Department of Computer Science seeks individuals for a tenure-track faculty position at the assistant or associate professor level in bioinformatics or a related area. Applicants must have a Ph.D. degree in Computer Science or a related field. Areas of interest include, but are not limited to, bioinformatics, computational biology, computational chemistry, database systems, data mining, graphics, information retrieval and visualization. The position will include appropriate startup funds for the establishment of a laboratory. More information about this position can be found at: www.cs.kent.edu/facsearch/.

The Department offers B.S., M.A., M.S. and Ph.D. degrees in computer science, and has 18 faculty, over 150 graduate students and over 450 undergraduate students, and is experiencing growth in student numbers. The Department has well-equipped research and teaching laboratories, and access to cell systems group resources including computational and visualization clusters, Access Grid nodes and stereo visualization facilities, and to resources at the Ohio Supercomputer Center via the new high bandwidth state academic network.

The application should include: (i) a cover letter clearly indicating the position(s) applied for; (ii) a curriculum vitae; (iii) a summary of research experience and plans for future research; and (iv) a statement of teaching experience, philosophy and interests. Applicants should arrange for at least three letters of recommendation to be sent. Names and addresses of references should be included in the cover letter. Applicants may send application materials and arrange for letters of recommendation to be sent electronically, preferably in pdf or Word format, to: asdeans@kent.edu, or by mail to Office of the Dean, College of Arts and Science, Kent State University, P.O. Box 5190, Kent, Ohio 44242-0001. Review of applications will begin on January 26, 2004 and continue until positions are filled.

All documents submitted to Kent State University for employment opportunities are public records and subject to disclosure under the Ohio Public Records Law.

Kent State University is an Equal Opportunity, Affirmative Action Employer

Professional Opportunities

Toyota Technological Institute at Chicago (<http://tti-c.org>) Computer Science at TTI-Chicago Faculty Positions at All Levels

Toyota Technological Institute (TTI-Japan) is founding a new Department of Computer Science (TTI-Chicago) adjacent to the University of Chicago campus. Applications are invited for tenure-track and tenured faculty positions at all ranks. In addition to traditional faculty positions, TTI-Chicago has a larger number of limited term positions.

TTI-Chicago will have exclusive use of the interest on a fund of \$100 Million being set aside by TTI-Japan for this purpose. TTI-Chicago will be dedicated to basic research, education of doctoral students, and a small masters program. Faculty members will receive continuing research grants and will have a teaching load of at most one course per year in a quarter system.

TTI-Chicago will have close ties with the Computer Science Department of the University of Chicago. The Department is projected to grow to a steady-state of thirty faculty (including limited term faculty) by 2007.

Faculty is particularly sought with research programs in:

- Computational geometry
- Databases and data mining
- Human-computer interaction
- Large-scale scientific simulation
- Machine learning
- Networking and distributed computing
- Software and programming systems
- Theoretical computer science

Applications should be submitted electronically at:

<http://tti-c.org/apps/faculty.htm>

Toyota Technological Institute at Chicago is an Equal Opportunity Employer.

Trinity College

Computer Science Department Visiting Assistant Professor

Applications are invited for a one-year visiting position beginning September 2004. Review of applications will begin February 15, 2004, and continue until the position is filled.

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

Tulane University

Department of Electrical Engineering and Computer Science Faculty Positions

The invites applications for a tenure-track faculty position in Computer Science starting in Fall 2004. Candidates should have a Ph.D. in Computer Engineering or Computer Science, a strong commitment to both research and teaching, a publication record in their area, and demonstrate potential for obtaining external research funding. Outstanding candidates at all levels and from all areas of expertise will be considered.

Applicants should send a letter of intent, a statement of research and teaching interests, a resume, and the names of at least three references including the references address, e-mail, telephone, and fax number to:

Dr. Boumediene Belkhouche
Search Committee Chair
Department of Electrical Engineering and Computer Science
Tulane University
New Orleans, LA 70118

Applications will be accepted until the position is filled.

Tulane University is an equal opportunity/affirmative action employer.

University of British Columbia Department of Computer Science Tier 1 Canada Research Chair

The Department of Computer Science at the University of British Columbia is seeking candidates to nominate for a Senior (Tier I) Canada Research Chair (CRC). The CRC Program is aimed at outstanding researchers who are world leaders or who have the potential for world leadership in their fields. Successful nominees would hold a tenured

position in the Department of Computer Science, or a joint appointment with another department. Further information about the CRC program may be found at <http://www.chairs.gc.ca>, while specifics about the department's CRC position and other positions are at <http://www.cs.ubc.ca/career/>. The start date is negotiable.

Candidates for nomination should submit a CV, a teaching statement and a research statement, and the names of at least three references to:

Anne Condon (recruit@cs.ubc.ca)
Chair, Recruiting Committee
Department of Computer Science
University of British Columbia
Vancouver, BC V6T 1Z4

Applications can be submitted on-line at <https://secweb.cs.ubc.ca/jsp.10/external/recruit/apply.jsp>. The submission deadline is March 1, 2004.

Computer Science at UBC is world renowned for its high quality and depth of research. One of the University's academic priorities is to continue to grow as a world class centre for Computer Science, and outstanding candidates are invited to participate in this effort. Applicants must demonstrate exceptional research track record and excellent teaching ability. Successful candidates are expected to pursue an active research program, perform both graduate and undergraduate teaching, and supervise graduate students.

All positions are subject to review and final approval by the CRC Secretariat. UBC hires on the basis of merit and is committed to employment equity. We encourage all qualified persons to apply. Canada Research Chairs are open to individuals of any nationality: offers will be made in accordance with Canadian immigration requirements associated with the Canada Research Chairs program.

University of Central Florida

Director of the School of Computer Science (<http://www.cs.ucf.edu/>)

The University of Central Florida (UCF) invites applications and nominations for the Director of the School of Computer Science. The University is strongly committed to computer science, designating it a key discipline and allotting the School \$2.5 million per year in special recurring funds. In 2004, UCF will break ground on a new state-of-the-art 75,000 sq. foot building to maintain and expand the excellence of the School of Computer Science. The Director has a unique opportunity to continue the School's rapid growth in ranking and reputation through recruitment of faculty members at all levels, and by helping to develop and execute the School's growth plan.

The University of Central Florida has over 42,000 students and is among the nation's fastest growing universities. We are located in Orlando, Florida at the center of the Florida High Tech Corridor with a thriving industrial base in telecommunications, computer systems, semiconductors, defense and space, lasers, simulation and software, and the world renowned entertainment industry. The University offers \$2 million per year in matching funds for joint research projects with regional high-tech industry and government organizations. In addition, there is a University-sponsored incubator to foster high-tech entrepreneurship. The Orlando metropolitan area enjoys an exceptional climate with rapid access to the Atlantic seashore and the Gulf of Mexico and benefits from a major airport with numerous direct international and national connections.

The School of Computer Science has 39 faculty members covering all traditional areas in computer science as well as newer areas such as digital media and bioinformatics. We have over 270 graduate students (approximately 130 Ph.D. students) and 860 undergraduate CS majors. In addition, we offer a B.S. degree in Information Technology (IT), with over 400 undergraduate majors. We have a rapidly growing research program with over \$2.8 million in annual expenditures from grants and contracts. Our Federal research sponsors include NSF, ARO, ONR, NASA,

PROFESSOR AND CHAIR
Department of Electrical and Computer Engineering

The Department of Electrical and Computer Engineering at the University of Central Florida solicits applications and nominations for a visionary, dynamic, and motivated Chair.

The University of Central Florida is located on a beautiful, modern campus in a suburban setting outside Orlando, one of the fastest growing areas in the country. Opportunities abound for research and partnerships with local high-tech industries, with governmental agencies, and the military. Enrollment is approximately 43,000 and growing steadily. The Department is home to 37 full-time faculty in two programs (Electrical Engineering and Computer Engineering), 1100 undergraduate students, and over 330 graduate students. The Department has active partnerships with organizations such as NASA/Kennedy Space Center, Harris, Lockheed Martin, and Emerson. Last year's research contracts totaled over \$2.8 million.

For more information please refer to the Department's web site at <http://www.ece.ucf.edu/>.

The successful candidate should have a keen appreciation for excellence in both undergraduate and graduate teaching, a proven record of scholarly research and external funding, and should be able to interact effectively with administration, faculty, students, the academic community, and the external community. We are seeking a leader who will have an understanding and appreciation for both electrical and computer engineering disciplines. The candidate must have an earned Doctoral Degree in Electrical or Computer Engineering or a closely related field and must qualify for tenure at a rank of Full Professor.

Applications should include a Curriculum Vita, a statement of vision for the Department, and the names and addresses of at least four references. Screening of applicants will begin March 15, 2004 and will continue until a suitable candidate is found. The desired start date is August 2004.

Please send nominations and applications to:

Dr. Debra Reinhart, ECE Chair Search Committee Chair,
College of Engineering and Computer Science
University of Central Florida
P.O. Box 162993, Orlando, Florida 32816-2993
Or electronically to: gmclaugh@mail.ucf.edu

UCF is an equal opportunity/affirmative action employer. Women and minorities are strongly urged to apply. As an agency of the State of Florida, UCF makes all application materials, including transcripts used in final screening, available to the public upon request.

PEOSTRI, RDECOM, the Department of Transportation, and other agencies of the Department of Defense. We also enjoy the support of numerous industrial sponsors including established companies as well as local hi-tech start-ups. Please see our web page at <http://www.cs.ucf.edu/> for more information.

A Director candidate must have (1) an earned doctorate in computer science or related discipline; (2) a record of scholarly activity, including refereed publications and external funding, commensurate with the rank of tenured full professor.

Preference will be given to candidates who meet these qualifications and further demonstrate: (1) leadership and vision in their field; (2) experience partnering with industry and other external constituencies; (3) strong administrative, planning, and decision-making capabilities; and (4) an ability to foster an environment of collegiality while motivating the School toward continued excellence. Candidates should be accomplished scholars in their field with a firm commitment to academic excellence. We seek outstanding applicants from academia, industry, and government. Salary will be highly competitive.

Applications should include a cover letter addressing the required and preferred criteria, a detailed CV including publications, research grants, patents, and students supervised, and names and addresses of at least three references. Screening begins upon receipt of application. Applications will be accepted until the position is filled. All materials should be sent to:

Dr. M.J. Soileau, Chair
Director of School of Computer Science's Search Committee
UCF Office of Research
12443 Research Parkway, Suite 302
Orlando, FL 32826
Phone: 407-823-5538
E-mail: director-search@mail.ucf.edu.

The University of Central Florida is an Equal Opportunity/Affirmative Action employer. Women and minorities are particularly encouraged to apply. As an agency of the State of Florida, UCF makes all application materials and selection procedures available for public review.

University of Houston Department of Computer Science Faculty Position in Computer Science

The Department of Computer Science at the University of Houston (UH) seeks applicants for one tenure-track faculty position at any rank, with preference for that of Assistant Professor. The successful candidate is expected to participate in teaching at all levels and to develop a vigorous research program. The Department is particularly interested in candidates in systems, but will consider strong candidates in all areas. The Department is experiencing a period of strong growth and

expects this trend to continue. In the last three years, the department hired six new faculty. UH has embarked on an ambitious multidisciplinary bioinformatics and bio-engineering program.

Applicants should have a Ph.D. in computer science or a related field and have a strong interest in both teaching and leading-edge research. Successful candidates may affiliate with several centers and institutes on campus, including the Texas Learning and Computation Center (TLC2). The department and the centers have a substantial infrastructure to support both teaching and research activities. UH, together with Rice University, Baylor College of Medicine, and Texas A&M University, operates a regional OC-12 network connected to the vBNS. UH is also a charter Internet2 member. The department is affiliated with the Center for Research in Parallel Computation (Rice) and both NSF Partnerships for Advanced Computing Infrastructure. Significant opportunities for collaborative research exist within the university and with the Texas Medical Center, the NASA/Johnson Space Center, and the region's oil/gas industry.

UH is an Equal Opportunity/Affirmative Action employer. Minorities, women, veterans, and persons with disabilities are encouraged to apply.

Screening of applications will begin immediately. Applications, including a resume, a list of publications and funding, and the names of at least three references (five for a senior position) should be sent to:

Faculty Search Committee
501 PGH, Department of Computer Science
University of Houston
Mail Stop CSC-3010
Houston, TX 77204-3010 USA
713-743-3374 (voice)
713-743-3335 (fax)
search04@cs.uh.edu (email)

University of Miami Department of Computer Science New Faculty Positions

The Department of Computer Science at the University of Miami invites applications for anticipated tenure-track/tenured faculty positions. Senior candidates with outstanding research accomplishments who can provide leadership in emerging frontiers of Computer Science are particularly encouraged to apply.

Applicants should send a letter of application, curriculum vitae, and the names of three references to:

Victor Milenkovic
Faculty Search Committee, Chair
Department of Computer Science
University of Miami
P.O. Box 248154
Coral Gables, FL 33124-4245
or via email to cssearch@cs.miami.edu.

(continued)

Professional Opportunities

URLs to online publications would be helpful.

For more information on the department and the university, please visit our web site at www.cs.miami.edu.

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

University of Oregon Computer and Information Science Faculty Position

The Department of Computer and Information Science invites application for one tenure track faculty position open for fall 2004. The department's primary recruiting emphases are in the areas of programming languages and distributed informatics. Programming languages is broadly construed to include compiler construction, domain-specific languages, program analysis, etc. Distributed informatics may include distributed database systems, web engineering, distributed document architecture, and other aspects of future distributed information systems. Outstanding applicants in other areas may also be considered. Applicants must have a Ph.D. in computer science or a closely related field, a demonstrated record of excellence in research, and a strong commitment to teaching.

The CIS department has nineteen research faculty and two instructors and offers B.S., M.S., and Ph.D. degrees. We offer a stimulating and friendly environment for collaborative research both within the department and with other departments on campus. The CIS Department is associated with the Computational Intelligence Research Laboratory, the Cognitive and Decision Sciences Institute, the Computational Science Institute, and the Neuro-Informatics Center. More information about the department, its programs and faculty can be found at <http://www.cs.uoregon.edu>, or mail your request to: University of Oregon, Dept. of Computer and Information Science, Eugene, OR 97403-1202. The University of Oregon is an AAU research university located in Eugene and within one hour drive of both the Pacific Ocean and the snow-capped Cascade Mountains.

Applicants should send their curriculum vitae, names of at least four references, a statement of research and teaching interests, and selected publications to:

Faculty Search Committee
Dept. of Computer and Information Science
University of Oregon
Eugene, OR 97403-1202
email: faculty.search@cs.uoregon.edu
Review of applications will begin in December 2003 and continue until the positions are filled.

The University of Oregon is an Equal Opportunity/Affirmative Action institution committed to cultural diversity and compliance with the Americans with Disabilities Act.

University of Puerto Rico at Mayagüez College of Engineering Electrical and Computer Engineering Department Tenure-Track Position

The Department of Electrical and Computer Engineering of the University of Puerto Rico at Mayagüez, (UPRM) invites applications for a tenure-track position in Computer Science or Computer Engineering. The Department plans to increase its overall strength in Computing, and has particular interest in attracting faculty in the areas of computer networks, databases, computer architecture, and distributed systems. Applicants must possess a PhD degree in Computer Science, Computer Engineering or closely related field, and demonstrate strong potential for excellence in research. Appointments will be made by July 1st, 2004.

The department offers a bachelor and Masters in Computer Engineering, and a PhD in Computing and Information Sciences and Engineering (CISE), jointly with the department of Mathematics of the UPRM. For further information concerning the ECE

department, and the PhD in CISE program, please visit www.ece.uprm.edu, and www.phd.ece.uprm.edu.

Applications, with curriculum vitae, three reference letters and MS and PhD transcripts should be sent to:

CISE Search Committee
University of Puerto Rico-Mayagüez
P.O. Box 5028
Mayagüez, Puerto Rico 00681

UPRM is an equal opportunity affirmative action employer.

University of Tennessee & Oak Ridge National Laboratory Joint Institute for Computational Sciences Tenure-Track Position

Assistant/Associate Professor in Mathematics or Computer Science. The Joint Institute of Computational Sciences at the University of Tennessee and the Oak Ridge National Laboratory seeks to fill a tenure-track position in the area of mathematics or computer science to begin August 2004. Applications from individuals whose research focuses on the use of high-end computers to advance the frontiers of science and engineering will be considered.

Required qualifications for the position include a Ph.D. and relevant postdoctoral experience, evidence of significant scientific productivity, and a commitment to an integrated program of teaching and research. The successful candidate will be qualified for appointment in the Department of Computer Science or Mathematics. Interested candidates should submit a resume and a description of proposed research program. Applicants should also arrange for at least three letters of reference to be submitted. Review of applications will begin upon receipt and will continue until the position is filled.

All application materials should be sent to the address below or to:

mathcompscisearch@jics.utk.edu
Mathematics/Computer Science Search Committee
Joint Institute for Computational Sciences
University of Tennessee-Oak Ridge
National Laboratory
P. O. Box 2008
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6008

The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services.

The University of Texas at Dallas Erik Jonsson School of Engineering and Computer Science Faculty Positions

The Erik Jonsson School of Engineering and Computer Science at the University of Texas at Dallas invites applications for senior faculty with an outstanding record of research, teaching and external funding in the areas of engineering and computer science that are considered interdisciplinary and/or emerging in nature and scope. The overall goal is to initiate new programs in areas including, but not limited to, biomedical engineering, bioinformatics, material science, chemical engineering and mechanical engineering. A startup package in seven figures has been budgeted to these positions.

The position will be at the full professor level with tenure in the Erik Jonsson School of Engineering and Computer Science; starting spring, summer or fall 2004. Candidates must have a Ph.D. degree in Engineering, Computer Science or equivalent.

The Erik Jonsson School of Engineering and Computer Science currently offers B.S., M.S. and Ph.D. degrees in electrical engineering, computer science, software engineering and telecommunications engineering. The school also offers M.S. and Ph.D. degrees in computer engineering. There are 75 full-time tenure/tenure-track faculty in the Erik Jonsson School of Engineering and Computer Science. In fall 2002, a new 152,000 sq. ft. building opened for Computer Science and Engineering to supplement the existing 1994, 150,000 sq. ft. engineering and computer

science building. The Engineering & Computer Science buildings provide extensive laboratory facilities for research in computer engineering, electrical engineering, telecommunications engineering, software engineering and computer science.

The University is located in the most attractive suburbs of the Dallas metropolitan area. There are over 900 high-tech companies within 5 miles of the campus, including Texas Instruments, Nortel Networks, Alcatel, Ericsson, Hewlett-Packard, Nokia, Fujitsu, MCI, EDS, and Perot Systems. Almost all the country's leading telecommunication's companies have major research and development facilities in our neighborhood. Opportunities for joint university-industry research projects are excellent. The Jonsson School has experienced very rapid growth in recent years and will become a top-ranked engineering school in the next five years. The Jonsson School is strengthening and expanding its programs by recruiting outstanding faculty and Ph.D. students, increasing funded research, and establishing new programs. The Jonsson School will benefit from a \$300 million program of funding from public and private sources over the next five years (see www.utdallas.edu/utd-general/news/).

For more information, view the Internet webpage at www.utdallas.edu/dept/eecs or contact Dr. Duncan MacFarlane, Search Chair, at dml@utdallas.edu or 972-883-4658. The search committee will begin evaluating applications as soon as possible and will continue until the positions are filled.

Applicants should mail their resume with a list of at least five academic or professional references as soon as possible to:

Academic Search #754
The University of Texas at Dallas
P.O. Box 830688, M/S AD 23
Richardson, TX 75083-0688

The University of Texas at Dallas is an Equal Opportunity Affirmative Action employer and strongly encourages applications from candidates who would enhance the diversity of the University's faculty and administration.

The University of Texas at Dallas Erik Jonsson School of Engineering and Computer Science Computer Engineering Faculty Positions – System-Level Design, Computer/Processor Architecture, Real Time Systems and Electronic Design Automation

The Erik Jonsson School of Engineering and Computer Science at the University of Texas at Dallas invites applications for computer engineering tenure/tenure-track faculty positions in:

- System-level design, synthesis and optimization; co-design, embedded systems
- Computer/processor architecture; high performance, power-aware superscalar and embedded processors; operating systems and compiler interactions with computer architecture; special purpose and DSP architectures
- Real time systems
- Electronic design automation; VLSI verification; synthesis and related areas.

Positions are at the assistant, associate or full professor levels, starting spring, summer or fall 2004. The successful candidate would be appointed a faculty position in either the Department of Electrical Engineering or the Department of Computer Science; a joint appointment is possible. Candidates must have a Ph.D. degree in Computer Science, Electrical Engineering, Software Engineering, Computer Engineering or equivalent. Candidates should have a strong record of research, teaching, and external funding. A significant start-up package has been budgeted for these positions.

The Erik Jonsson School of Engineering and Computer Science offers an interdisciplinary Ph.D. degree in Computer Engineering; M.S. Degree in Computer Engineering. Faculty for the computer engineering program consists of members from Computer Science and Electrical Engineering. Currently there are 18 CE affiliated faculty. In fall 2002, a new 152,000 sq. ft. building opened for Computer Science and Engineering to supplement the

existing 1994, 150,000 sq. ft. engineering and computer science building. The engineering & computer science buildings provide extensive laboratory facilities for research in computer engineering, electrical engineering, telecommunications engineering, software engineering and computer science.

The University is located in the most attractive suburbs of the Dallas metropolitan area. There are over 900 high-tech companies within 5 miles of the campus, including Texas Instruments, Nortel Networks, Alcatel, Ericsson, Hewlett-Packard, Nokia, Fujitsu, MCI, EDS, and Perot Systems. Almost all the country's leading telecommunication's companies have major research and development facilities in our neighborhood. Opportunities for joint university-industry research projects are excellent. The Jonsson School has experienced very rapid growth in recent years and will become a top-ranked engineering school in the next five years. The Jonsson School is strengthening and expanding its programs by recruiting outstanding faculty and Ph.D. students, increasing funded research, and establishing new programs. The Jonsson School will benefit from a \$300 million program of funding from public and private sources over the next five years (see www.utdallas.edu/utd-general/news/).

For more information, view the Internet webpage at www.ce.utdallas.edu or contact Dr. Duncan MacFarlane, Search Chair, at dml@utdallas.edu or 972-883-4658. The search committee will begin evaluating applications as soon as possible and will continue until the positions are filled.

Applicants should mail their resume with a list of at least five academic or professional references as soon as possible to:

Academic Search #755
The University of Texas at Dallas
P.O. Box 830688, M/S AD 23
Richardson, TX 75083-0688

The University of Texas at Dallas is an Equal Opportunity Affirmative Action employer and strongly encourages applications from candidates who would enhance the diversity of the University's faculty and administration.

University of Virginia Department of Computer Science General Faculty Search

The Department of Computer Science at the University of Virginia invites applications for general teaching faculty positions. Appointments at the ranks of Lecturer through Associate Professor are available. These renewable, non-tenured positions are intended for committed individuals whose academic careers and national stature are centered on the development and delivery of excellent undergraduate Computer Science education for all students.

UVA is ranked consistently as one of the top public universities in the country. Its Department of Computer Science has a diverse population with more than 300 undergraduate students, 110 graduate students, and 27 faculty members. The department is undergoing significant growth and programmatic evolution and aspires to become one of the top departments in experimental systems research and the leading institution in undergraduate Computer Science education. Its novel undergraduate curriculum stresses both the fundamentals of computing and software development, and the integration of advanced and emerging topics. Its general faculty members regularly publish in Computer Science education conferences, obtain educational research and development grants, and win University-wide teaching awards.

Candidates must have an earned doctorate in an appropriate discipline and a genuine desire to contribute to the Department's educational mission. Applications will be reviewed as they are received and until the position is filled. Applicants are encouraged to visit the departmental website for more information at: www.cs.virginia.edu.

Please submit a letter of application, contact information for three references,

Professional Opportunities

curriculum vitae, and statement of teaching philosophy to:

James P. Cohoon,
Search Committee Chair School of
Engineering and Applied Science
University of Virginia
151 Engineer's Way
P. O. Box 400740
Charlottesville, VA 22904-4740
Email: cohooon@virginia.edu
Phone: 434-982-2210

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

The University of Western Ontario

Department of Computer Science SHARCNet Chair in Bioinformatics

The Position: The University of Western Ontario, a top-tier research University in Canada, has received funding from SHARCNet (www.sharcnet.ca) for a probationary (tenure-track) position at the Assistant Professor level in Bioinformatics with a particular emphasis on computational techniques. Candidates should have a PhD in Computer Science or in a Bioinformatics related area, with a strong Computer Science background, and must show evidence of a strong research program and commitment to teaching. Successful candidates will teach in both the graduate and undergraduate programs of the department and pursue a strong, individually-defined research program.

The Department: There are currently 32 faculty members in teaching and research positions. Degrees at the BSc, MSc and PhD levels are offered in Computer Science, as well as a degree with specialization in Bioinformatics. The Department has a strong group in Bioinformatics, and Bio-computing including one Canada Research Chair. The group works closely with other researchers across campus, as part of a University-wide initiative in Bioinformatics. For details see www.bioinformatics.uwo.ca and www.csd.uwo.ca.

The University and City: With a full-time enrollment of about 32,000, The University of Western Ontario graduates students from a full range of academic and professional programs. The university campus is located in London, a city of 340,000, located midway between Toronto and Detroit. London offers a recently expanded international airport, galleries, theatre, music and various sporting events, as would be expected of a larger center (see www.city.london.on.ca).

To Apply: The closing dates for applications are the second Friday of each month until June 11, 2004. Please send a CV, a statement of your teaching philosophy and three representative publications to:

Prof. Michael A. Bauer, Chair
Department of Computer Science
MC355

The University of Western Ontario
London Ontario, CANADA N6A 5B7
E-mail: positions@csd.uwo.ca

Position is subject to budget approval.

Applicants should have fluent written and oral communication skills in English. All qualified candidates are encouraged to apply; however Canadian Citizens and Permanent Residents will be given priority. The University of Western Ontario is committed to employment equity and welcomes applications from all qualified women and men, including visible minorities, aboriginal people and persons with disabilities.

University of Wisconsin-Madison Faculty Positions in Interdisciplinary Program in Systems Biology

The University of Wisconsin invites computationally oriented applications for tenure-track positions as part of a campus-wide initiative in Systems Biology. Positions will be filled at both senior and entry levels, and successful candidates will be recruited to an appropriate academic department, such as the Department of Biostatistics and Medical Informatics (<http://www/biostat.wisc.edu>). Selection will be based on excellence of qualifications and relevance to Systems Biology, i.e., the use of computational biology, bioinformatics, genomics, and/or proteomics to

understand the elements and interactions that give rise to biological processes. The University of Wisconsin offers exceptional opportunities for interdisciplinary research and graduate training. Information about this initiative and available positions is available at <http://www.ms-biotech.wisc.edu/sysbio/>.

Interested individuals should submit a curriculum vitae and statement of research interests and also have at least three letters of reference sent to:

Dr. Richard L. Moss
Chair of Systems Biology Search
c/o Rebecca Welch
UW Medical School – Dept. of Physiology
1300 University Avenue
Madison, WI 53706

or electronically to: welch@physiology.wisc.edu. The search committee will consider applications until all positions are filled.

Unless confidentiality is requested in writing, information regarding applicants and nominees must be released upon request. Finalists cannot be guaranteed confidentiality.

UW-Madison is an equal opportunity/affirmative action employer.

University of Wisconsin-Milwaukee

Department of Electrical Engineering & Computer Science Faculty Recruitment in Computer Science

The Computer Science Program in the Department of Electrical Engineering & Computer Science is continuing its development and growth. Our Program has established a very good record in recruiting outstanding junior faculty and in providing them with a nurturing, as well as stimulating environment for their career development. Several of our faculty have been the recipients of the NSF EARLY CAREER Awards. The Computer Science faculty is engaged in research in many areas including Artificial Intelligence, Theory, Cryptography and Data Security, Distributed Systems, Networks, Programming Languages, Software Engineering, and Medical Informatics. The Program is also engaged in collaborative efforts with several academic units at our University as well as other institutions including the Medical College of Wisconsin.

We invite applications for a tenure track faculty position from strong candidates in the following areas of Computer Science: Artificial Intelligence, Computer and Data Security, Data Bases, Computer Networks, and Medical Informatics. We are particularly interested in recruiting in the areas of Computer and Data Security, and Medical Informatics. Recently our university received a major NSF collaborative grant in Cyber Security that involves several university of Wisconsin campuses. We are the lead institution in this project. All candidates should have a demonstrated promise for excellence in research and in teaching. Candidates for senior positions should have excellent research credentials.

Our University is located in a pleasant residential neighborhood of Milwaukee close to the shores of Lake Michigan. Our metropolitan location facilitates each interactions with many industries and affords numerous cultural and recreational activities.

Applicants should send a hard copy of a vitae by post or Fax, along with a statement of plans for research and teaching. We also request that at least three references be asked to send letters to:

Faculty Recruitment Coordinator for
Computer Science
Department of Electrical Engineering & Computer Science
University of Wisconsin-Milwaukee
PO Box 784
Milwaukee, WI 53201-0784
E-mail: recruit@cs.uwm.edu (for inquiries only)
Fax: 414-229-6958

Evaluation of all candidates will begin in Spring 2004 and will continue until the position is filled. Women and minority candidates are strongly encouraged to apply. Additional information about our Program may be obtained by visiting our website at <http://www.cs.uwm.edu>.

UWM is an equal opportunity institution committed to diversity.

Virginia Tech Department of Computer Science Bioinformatics Faculty Positions

The Department of Computer Science at Virginia Tech seeks applications for several tenure-track positions in the Department of Computer Science from individuals desiring to make fundamental contributions to both computer science and the life sciences in bioinformatics, as broadly defined. Special funding from the Commonwealth of Virginia provides competitive salaries and startup funding for tenure-track faculty positions at all ranks. CS faculty in bioinformatics have access to the 2200-processor Terascale Computing Facility recently established by the university, as well as other multiprocessor clusters within the Department. Excellent opportunities for collaborative research exist with researchers in life science departments and at the Virginia Bioinformatics Institute, which is located on campus.

Applicants for a senior position must have a significant track record of grant funding. All applicants must have a PhD in Computer Science or an allied area, a demonstrated record of publications in computer science or computational science, and a commitment to addressing significant life science problems. Ability to collaborate with researchers within the Department and in the life sciences is required. A demonstrated record of accomplishments in bioinformatics is preferred. Additional information is available at <http://www.cs.vt.edu/FacultySearch>.

Applicants should send a curriculum vitae, a 1-2 page statement of research goals in both computer science and life science, and at least three letters of reference, as separate PDF files, by email to facultysearch@cs.vt.edu.

Review of candidates will begin January 5, 2004 and continue until the positions are filled.

Virginia Tech is an equal opportunity employer.

Virginia Tech Department of Computer Science Bioinformatics Postdoctoral Associate

The Department of Computer Science seeks applications for a postdoctoral associate to contribute to existing bioinformatics projects. Applicants for the postdoctoral position must have a PhD in Computer Science or allied field and must demonstrate a genuine interest in participating in bioinformatics research. Full information about the position can be accessed through <http://www.cs.vt.edu>. Address inquiries to Professor Lenwood S. Heath, heath@vt.edu.

Applicants should send a curriculum vitae, a 1-2 page statement of research goals in both computer science and life science, and at least three letters of reference to:

Bioinformatics Postdoc Search
Dept. of Computer Science
660 McBryde Hall (0106)
Virginia Tech
Blacksburg, VA 24061

Review of candidates is ongoing and will continue until the position is filled.

Virginia Tech is an equal opportunity employer.

Wake Forest University Department of Computer Science Visiting Assistant Professor

Applications are invited for a Visiting Assistant Professor to fill a one year appointment beginning Fall 2004, the position contingent on funding. Applicants should have completed a PhD in Computer Science by the time of appointment. The ideal candidate will have an interest in and aptitude for teaching undergraduate students and the potential to collaborate on research with colleagues at Wake Forest.

The department currently has eleven faculty and offers B.S. and M.S. degrees in Computer Science. (See www.cs.wfu.edu.) The campus offers a beautiful setting and supportive environment for excellent teaching and research. To apply, send a CV, statement

of teaching philosophy, and names of four references to:

Search Committee
Department of Computer Science
P.O. Box 7311
Wake Forest University
Winston-Salem, NC 27109
AA/EO Employer.

Washington State University Computer Science Faculty Position

Looking for a career in a research university with a very high quality of living? Washington State University in Pullman offers a great opportunity to live in a small town with a strong sense of community, excellent schools, and abundant outdoor recreation nearby, while working with a team of excellent researchers.

The School of Electrical Engineering and Computer Science (EECS) at Washington State University is inviting applications and nominations for a faculty position to be filled in Software Engineering. Candidates at all ranks will be considered. Senior applicants must have a strong record of achievement in academia and/or industry. Junior applicants must have earned a PhD in Computer Science by August 16, 2004. All candidates must have both a strong interest in conducting publishable research and a strong commitment to teaching. A record of publication in peer-reviewed journals and conference proceedings is required. The School offers junior faculty a reduced teaching load for the first three years of their appointment. The successful candidate will be expected to teach, effectively communicate and interact with students and colleagues, conduct funded research, publish, and direct MS and PhD student research programs.

For appropriately qualified senior candidates in software engineering, the School of Electrical Engineering and Computer Science (EECS) at Washington State University is soliciting applications and nominations for the position of Boeing Endowed Professorship in Software Engineering. The Boeing Professorship has an endowment of \$600,000, and the annual proceeds are available to support the research and teaching program of the Chair holder. Candidates must 1) possess a PhD degree in computer science or a related discipline, 2) have a demonstrated record of outstanding accomplishments, and 3) be committed to building an active research program.

The School of EECS is the largest of six academic departments in the College of Engineering and Architecture at Washington State University. The School presently has forty faculty, and awards B.S., B.A., M.S., and Ph.D. degrees in computer science, B.S., M.S., and Ph.D. degrees in electrical engineering, and the B.S. degree in computer engineering. Major areas of research emphasis include software engineering, embedded systems, algorithms, distributed systems, databases, and computer networks. The School has six endowed chairs and distinguished professorships in computer science, computer engineering, and electrical engineering. Two NSF IUCRC centers are in EECS. To learn more about WSU, the School, and faculty research interests, please see <http://www.eecs.wsu.edu/>.

Screening of applications will begin immediately upon receipt of curriculum vitae. Maximum consideration will be given to applications received by January 31, 2004. Applicants should send a cover letter that includes a summary of their research and teaching interests, a curriculum vitae, and the names and addresses of three references qualified to comment on the applicant's research and teaching qualifications to:

Chair
Computer Science Search Committee
School of Electrical Engineering and Computer Science
Washington State University
PO Box 642752
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CRA CONFERENCE AT SNOWBIRD 2004 ♦ JULY 11-13, 2004 ♦ SNOWBIRD, UTAH

The flagship conference for chairs of Ph.D.-granting departments of CS and CE and leaders from U.S. industrial and government computing research laboratories and centers interested in computing research issues.

Preliminary Program

Sunday, July 11

CRA Board of Directors meeting 8:00AM - 2:45PM
(begins Saturday 6PM)

Conference Registration 2:00PM - 7:30PM

Workshop for New Department Chairs 3:00PM - 6:00PM

Chairs:

Randy Bryant (Carnegie Mellon University)

Marc Snir (University of Illinois, Urbana-Champaign)

Speakers:

Cynthia Brown (Portland State)

Remi Melham (University of Pittsburgh)

J Strother-Moore (University of Texas at Austin)

Margaret Wright (New York University)

Welcome Reception 6:00PM - 7:00PM

Dinner 7:00PM - 9:00PM

Keynote Speaker:

Vinton G. Cerf, Senior Vice President

Technology Strategy, MCI

Topic: TBD

Monday, July 12

Breakfast Buffet 7:00AM - 8:30AM

Registration 7:30AM - 6:00PM

Welcome 8:30AM - 8:40AM

Speakers:

Moshe Vardi, Rice University (Academic Snowbird Chair)

Dick Waters, MERL (Labs/Centers Snowbird Chair)

PLENARY SESSION I 8:40AM - 10:00AM

Academic CS Education Après Le Crash

Chair: Moshe Vardi (Rice University)

Speakers:

Maria Klawe (Princeton University)

Richard Newton (UC Berkeley)

Jeffrey Vitter (Purdue)

Break 10:00AM - 10:30AM

Workshop I (parallel sessions) 10:30AM - Noon

Computing-Related Policy Issues

Chair: Eugene Spafford (Purdue University)

Speakers:

Jeff Grove (ACM)

Peter Harsha (CRA)

Others TBD

New Models for Programs in CE

Chair: James Ayler (University of Virginia)

Speakers:

Srinivas Devadas (MIT)

Milos Ercegovac (UCLA)

Complexity vs. Robustness in the Information Infrastructure

Chair: Alfred Spector (IBM)

Speakers: TBD

Trends in Research Funding 1

Chair: Moshe Vardi (Rice University)

Speakers:

Ron Brachman (DARPA IPTO)

Greg Andrews (NSF CISE)

Luncheon Noon - 1:30PM

PLENARY SESSION II 1:30PM - 3:00PM

Stop the Female Brain Drain

Chair: Lori Clark (UMass, Amherst)

Speaker: Joanne McGrath Cohoon (University of Virginia)

Break 3:00PM - 3:30PM

Workshop II (parallel sessions) 3:30PM - 5:00PM

Politically Incorrect, Fast-Pitch, Hardball Questions About Diversity in Computing

Chair: Bryant York (Portland State University)

Speaker:

Richard Tapia (Rice University)

Implementing the Fluency Report: Models and Experience

Chair: Larry Snyder (University of Washington)

Speakers: TBD

Computer Science and the Humanities

Chair: Nancy Ide (Vassar)

Speakers:

Peter Allen (Columbia)

Sayed Choudhury (Johns Hopkins)

Marc Levoy (Stanford)

Trends in Research Funding II

Chair: Moshe Vardi

Speakers:

Eric Jakobsson (NIH)

Joseph Kielman (DHS)

Dinner and State of the CRA Address 6:30PM - 9:30PM

Speakers:

James Foley (Georgia Institute of Technology)

Andrew Bernat (CRA)

The CRA Distinguished Service and A. Nico Habermann Awards will be presented.

Tuesday, July 13

Breakfast Buffet 7:00AM - 8:30AM

PLENARY SESSION III 8:30AM - 10:00AM

The Impact of IT on the US Economy

Chair: John King (University of Michigan)

Speaker: Vijay Gurbaxani (UC Irvine)

Break 10:00AM - 10:30AM

Workshop III (parallel sessions) 10:30AM - Noon

Diversity: What Works?

Chair: Lori Clarke (UMass)

Speakers: TBD

The Role of Research Faculty in an Academic Department

Chairs:

Gerard Medioni (UC Irvine)

J Strother-Moore (University of Texas at Austin)

Panelists:

Rangacha Kasturi (University of South Florida)

Kathy McKeown (Columbia)

Marc Snir (University of Illinois, Urbana-Champaign)

Chuck Thorpe (Carnegie Mellon)

Expanding the Frontiers of Information Technology: The Challenge to Academic Leadership

Chair: John King (University of Michigan)

Speakers:

William Aspray (Indiana University)

Jim Foley (Georgia Tech)

Vijay Gurbaxani (UC Irvine)

The Future of Industrial Research Labs

Chair: Dick Waters (MERL) [with assistance from

Alfred Spector (IBM) and Moshe Vardi (Rice)]

Speakers:

Peter Hart (Ricoh)

Alfred Spector (IBM)

David Tennenhouse (Intel)

Luncheon: Noon - 1:30PM

[CRA Board Interaction with Conference Participants]

Workshop IV (parallel sessions) 1:30PM - 3:00PM

The Role of CS in Societal Applications

Chair:

Valerie Taylor (Texas A&M)

Panelists:

Ruzena Bajcsy (CITRIS, UC Berkeley)

Leah Jamieson (Purdue University)

Bryant York (Portland State University)

Accreditation of IT Programs

Chair: William Aspray (Indiana University)

Speakers: TBD

Grand Challenges in Trustworthy Computing

Chair:

Eugene Spafford (Purdue University)

Speaker:

Rich DeMillo (Georgia Tech)

Software Offshoring: Risks and Opportunities for Computing Programs

Chair: Stephen Seidman (New Jersey Institute of Technology)

Speakers:

Larry Finkelstein (Northeastern); others TBD

Workshop for IT Deans 3:00PM - 9:00PM

Chair:

Bobby Schnabel (University of Colorado, Boulder)

Program and Registration Information:

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

Conference Sponsors: AAI, ACM, IBM, IEEE-CS, Intel, Lucent Technologies, MERL, Microsoft Research, Sun, and USENIX