Clinton announces special Internet initiatives

By Fred W. Weingarten
CRA Staff

In a major science and technology speech delivered October 10 at Oak Ridge, TN, President Clinton announced a series of new initiatives aimed at improving and expanding educational and public access to the Internet. In his speech, the president made strong statements about the importance of research in general and spent a substantial amount of time discussing the way computers and networking were transforming society.

Referring to the rapid growth of the Internet, Clinton said, "The day is coming when every home will be connected to it, and it will be just as normal a part of our life as a telephone and a television. It is becoming our new town square, changing the way we relate to one another, the way we send mail, the way we hear news, the way we play."

Clinton announced three initiatives. Of most direct interest to the research community was a proposed investment of $100 million in fiscal 1998 for a "Next-Generation Internet." The initiative, described as combining both research and infrastructure elements, has three goals:

1. Connect at least 100 universities and national laboratories at speeds at least 100 times that available in the current Internet, and connect a smaller number at speeds 10 times greater than that.
2. Experiment with the next generation of network technologies—for example, high-quality videoconferencing, multicasting and the ability to reserve bandwidth for applications with special requirements.
3. Demonstrate new applications that meet important national goals and missions, such as distance education and health care.

The $100 million would come from reprogramming $70 million from the Defense budget and the remainder from reprogramming in the High-Performance Computing and Communications (HPC) initiative.

Clinton mentioned other initiatives. The president said that the administration would evaluate the program "as we go along."

A series of new initiatives are aimed at improving and expanding educational and public access to the Internet.

A administration documents stated that, over the long term, this initiative would help alleviate bottlenecks on the current Internet by developing and creating a "first customer" market for new technologies that will help the Internet "continue its exponential rate of growth."

Two other initiatives were announced. One was a joint industry and government "challenge grant" program to put technology in the schools. Several telecommunications industry executives accompanied Clinton on his trip to Tennessee and pledged their support of the effort.

A conference on Education Department officials, the program is a five-year, $2 billion effort. The first year funding is already being put in place, with final approval of $200 million in fiscal 1997 funds to the states and then to local elementary and secondary schools for technology in the schools, based on the existing Title III technology program.

A nother initiative was a proposal by the administration to the Federal Communications Commission to guarantee Internet access to the nation's schools and libraries. The FCC is in the middle of a proceeding to decide how to implement a section of the new telecommunications law.

Clay was ‘father of the HPC industry’

World-renowned supercomputer architect Seymour Cray died October 5 from severe head injuries sustained in an auto accident near Colorado Springs, CO. Cray spent his life developing the world’s fastest supercomputers.

Police blamed the accident on the driver of a Chevrolet Camaro who tried to pass Cray’s jeep Cherokee but struck another car, which then hit Cray’s vehicle, causing it to roll three times. No one else was injured in the accident. The driver of the other car, uninjured, was cited for careless driving.

Seymour Cray had an enormous impact on computing and computer architecture. Not only did he invent practical vector computers, many believe he invented RISC architectures. Certainly many of the people who are credited with major contributions to RISC architectures were inspired by his designs," said Forest Baskett, vice president for research at Silicon Graphics Inc. "He did not receive many of the standard awards that he should have received because he routinely turned them down. He was a great man and very modest."

"Seymour" Cray was a legend in his own time—the father of the supercomputer and the high-performance computing industry. He was a creative and technological genius who continued to push himself and those of us privileged to have been his colleagues to new heights of scientific achievement," Bo Ewald, president of Cray Research Inc., said in a letter to Cray Research employees. "He ranks with Edison, Ford, Marconi and Bell as one of the seminal thinkers, inventors and business pioneers of modern times."

Cray was born Sept. 28, 1925, was a native of Chippewa Falls, WI. He earned a bachelor’s degree in electrical engineering and a master’s degree in applied mathematics from the University of Minnesota. After graduation, like many important computing pioneers, he found his way to Engineering Research Associates, considered by many to be the birthplace of the US computer industry.

Cray co-founded Control Data Corp. in 1957 and was responsible for the CDC 6600, which was introduced in 1963 and was significantly faster than IBM’s most powerful machine. The CDC 7600, released in the late 1960s, again furthered Control Data’s status as the leader in scientific computing. The Cray 1 and Cray 2 supercomputers were built by Cray Research Inc., a company he formed in 1972.

In 1989 Cray formed Cray Computer Corp., but he died for bankruptcy in 1995. And in August he started a new company, SRC Computers Inc., and was planning the design of the Cray 5 supercomputer.

"The advances in computing power that his designs made possible led to breakthroughs in such critical areas as enhanced automotive safety, faster pharmaceutical drug design, improved weather forecasting and petroleum exploration, and accelerated the end of the cold war," a statement released by Cray Research said.

"To those of us at Cray Research, he was always an inspiring leader, coach and colleague. He founded a great company with an empowering culture and essentially, the supercomputing industry," the Cray Research statement said. "We will always be in his debt, knowing that Seymour Cray would have pushed ourselves and our company toward even higher computing aspirations and broader applications."
Expanding the Pipeline

Apply now to 1997 mentor project

The Computing Research Association has selected 20 mentors to participate in its 1997 mentor project. The program aims to provide support and guidance to female computer science and engineering (CSE) students and to increase the number of female students pursuing advanced degrees in the field.

Mentors and students will be given training packages on mentoring and will participate in an electronic discussion group. This will provide additional mentoring opportunities while distributing the load among mentors and will establish cohesive-ness among all participants. It is intended to be a source of support for mentors and students.

One aspect of the continuing project is a longitudinal evaluation, covering all five years of the project (1994-98). This third-party evaluation is intended to provide formative feedback and to assess the long-term impact of the project.

The evaluation is not intended to check on the performance of individuals participating in the project, and participation anonymity will be maintained as far as is possible. All participants are expected to take part in the evaluation; the time involved will be minimal.


A preliminary evaluation report for the first three years of the project is available at these electronic locations.

Student selection criteria:

Applicants should be female undergraduates (U.S. citizens or permanent residents) at a U.S. college or university who are seriously considering graduate studies in CSE. First consideration will be given to sophomores and juniors (completing two or three years by the summer of 1997). However, first-year students with the skills needed for research and seniors considering graduate school later than September 1997 also may apply.

The primary criteria for selection are:

1. The student’s experience and skills must match the needs of some professor’s research project.
2. The student’s record and recommendations should indicate the potential for success in graduate school.
3. We would like to select students who stand to gain the most from the experience (for example, students at institutions unable to offer research opportunities with female professors).

Student applications:

A transcript, letters of recommendation, the technical and mentoring statements and other basic information requested below must be submitted on or before Feb. 1, 1997. Electronic submission to cra-student@cs.wisc.edu is encouraged. Send transcripts and other nonelectronic information to Anne Condon, Department of Computer Science and Engineering, University of Washington, Box 352505, Seattle, WA 98195-2358. Tel: 206-543-2429; fax: 206-543-2969.

1. Basic information. Name; Social Security number; indicate if you are a U.S. citizen or permanent resident or will be by summer 1997 (required by NSF); school in which currently enrolled; academic year address and telephone; permanent home address.

2. Transcript. Send an official transcript or a copy indicating minor (programming language proficiency, operating systems familiarity, hardware design experience and other skills not evident from your transcript).

3. Letters of Recommendation. Letters of recommendation are important for predicting likely success in graduate school. However, we understand that some students may not have connected enough with a professor to obtain a substantive letter of recommendation. Therefore, letters are optional, but we encourage students to have two letters submitted if possible.

4. Technical Statement. We ask for a description of about 500 words detailing your interests in CSE. We are particularly interested in understanding your feelings about female professors or female researchers.

5. Mentoring Statement. To help us match you with a mentor, please rank the following topics according to your interest in them: career opportunities in academia or industry, balancing work and family life, improving self-confidence, dealing with a chilly working environment, establishing professional contacts and learning about the research process. If you wish, you may indicate minority status, disability, sexual orientation or any other factor you would like us to consider.

6. Restrictions. Let us know of any geographic restrictions or time constraints that would affect a match in the previous year. A number of worthy applicants could not be funded because of overly precise geographical preferences. A list of mentors with the name of a particular professor with whom you would like to work.

LETTERS TO THE EDITOR

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Tel: 202-334-2111
Fax: 202-667-1066
E-mail: crn@cra.org

Letters may be edited for space and clarity.
Workshop to focus on intellectual property rights

The Computing Research Association is holding a workshop on University Intellectual Property Rights and the Computer Science and Engineering Discipline on December 8-9 in Washington, D.C.

The workshop, which is being organized by Randy Katz of the University of California at Berkeley, will focus on drafting a reference policy for software licensing. Participants will identify underlying principles for when technologies should be licensed, balancing the university’s need to retain ownership with a desire to enhance university-industrial interaction. The principles include:

- Acknowledging the value of industrial sponsorship through preferential licensing, including free evaluation rights, first rights to licensing and including research support toward licensing fees.
- Considering placement of software in the public domain that uses copyright protection to retain ownership and supports widespread dissemination and use.

In addition, workshop participants will examine the application of university intellectual property rules to visiting industrial visitors, and the opposite case of university researchers on-site at an industrial laboratory. Participants will draft suggested policies for these situations that encourage university-industrial interaction while protecting the rights of the parties involved. This is meant to be a working workshop. Everyone involved needs to do some detective work before the meeting. This is the kind of data that needs to be collected before the workshop:

- What is your campus (or corporation) policy on licensing? Copyrights and patents? Is there a pithy description of these policies or a glossy brochure? Please obtain such descriptions and share them with Katz.
- Does your campus have a model agreement? If so, can you share it?
- How many university-industry agreements does your campus (or corporation) negotiate per year? Of those, how many are in the information technology or electronics area (as opposed to biotech, for example)? Of those in technology areas of interest to your discipline, how many of these have yielded significant licensing income?

The workshop registration fee is $150 per person and includes a working lunch, a reception on December 8 and Continental breakfast, lunch and breaks on December 9.

To register, contact Kimberly Peaks, CRA, 1875 Connecticut Ave, NW, Suite 718, Washington, DC 20009-5728, Tel: 202-234-2111; fax: 202-267-1066; e-mail: register@cra.org. For more information about the workshop’s content, contact Katz at randy@cs.berkeley.edu.

1997 Hopper conference planned

Mark your calendars! The 1997 Grace Hopper Celebration of Women in Computing will be held September 19-21 at the Fairmont Hotel in San Jose, CA.

The second Grace Hopper conference—a celebration of women in computing—will feature technical talks by women who are leaders in their fields, and workshops tailored to promote and support the successes of women researchers from all disciplines and career levels.

General chair: Ruzena Bajcsy, University of Pennsylvania. Program chair: Fran Allen, IBM T.J. Watson Research Center. Fundraising chair: A. Nita Borg, Digital Equipment Corp. Program committee: Ed Lazowska, University of Washington; Mary Lou Soffa, University of Pittsburgh; Liba Svobodova, IBM Zurich; Valerie Taylor, Northwestern University; and Telle Whitney, A.T. Corp.

Information about availability of hotel rooms will be available at the conference Web site: http://www.sysres.org/97/hopper. Or contact A.N. Rededs, San Diego Supercomputer Center. E-mail: reeds@sdsc.edu; tel: 619-534-3032.

Infrastructure BOF at Supercomputing

A flyer and proposals report from the high-performance computing compiler community, a common compiler infrastructure is now being funded by the Defense Advanced Research Projects Agency and the National Science Foundation to help compiler researchers.

A Common Compiler Infrastructure Birds of a Feather session will be held November 20 from 3:30 P.M. to 5:30 P.M. at Supercomputing ’96 in Pittsburgh, PA.

The purpose of this common compiler infrastructure is to:

- Facilitate the transfer of good compiler research ideas to computer and compiler industries.
- Improve compiler education by providing a stable, robust model for study.
- Allow researchers and early users to test new compiler techniques and algorithms within the context of a robust compiler with multiple front ends and back ends.
- Accelerate the development of compilers and system software for new machines and architectures.
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- Allow compiler researches to make fair comparisons with the work of others without reinventing previous work.
- Allow researchers and early users to test new compiler techniques and algorithms within the context of a robust compiler with multiple front ends and back ends.
- Improve compiler education by providing a stable, robust model for study.
- Facilitate the transfer of good compiler research ideas to computer and compiler industries.

This BOF session will describe the infrastructure that is being funded. Jack Davidson of the University of Virginia and Monica Lam of Stanford University will describe their components of the infrastructure. The floor will then be opened up for comments and input from the compiler community.

For more information, contact Randy Katz at randy@cs.berkeley.edu.
Notes from the Executive Director

Your support of CRA appreciated

The Computing Research Association is able to carry out its programs in support of the computing research community only because of the financial support and volunteer effort so generously given by many individuals and organizations. There is much more CRA could do with additional human and financial resources. You can help us to increase our efforts on behalf of the computing research community by taking any of the following actions:

1. Volunteer to serve on one or more CRA committees, or recommend one of your staff members for CRA committee service.
2. Ask your organization to become a member of CRA. A new organization in the United States, Canada or Mexico that produces computing research, consumes computing research or wants to support computing research most likely is eligible to be a member.
3. Ask your organization to make a charitable donation to CRA, or personally make one. CRA is a 501(c)(3) organization under the US tax code, which means that charitable contributions qualify for tax deductions in most circumstances.
4. Ask your organization to provide products or services to CRA, such as computer hardware and software, teams from your company to carry out a project, staff support at a CRA-sponsored event, or access to your specialized staff (for example, legal, accounting, marketing, public relations and so on).
5. If you would like to discuss this matter further, please contact William Aspray at 202-234-2111 or via e-mail at aspray@cra.org.

CRA welcomes its new members

The Computing Research Association continues to grow. CRA is pleased to welcome two new industrial members: Intel Corp. and Silicon Graphics Inc. One new government laboratory has joined: the National Center for Supercomputing Applications. Two academic departments are new members in 1996-97: Brigham Young University’s Department of Computer Science and the University of Denver’s Department of Mathematics and Computer Science. CRA also appreciates the numerous professional society, academic and industrial members that support CRA and have renewed their memberships.

CRA invites nominations for service-related awards

The Computing Research Association invites nominations for the 1997 CRA Distinguished Service Award and the A. Nico Habermann Award. Nominations should be no longer than two pages and describe the contribution that is the basis of the nomination.

CRA Distinguished Service Award

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

Letters in support of the nomination are welcome but not required.

Deadline: Nominations must be received by Feb. 14, 1997.

A. Nico Habermann Award

CRA makes an award, usually annually, to a person who has made an outstanding contribution to aiding members of underrepresented groups within the computing research community. This award recognizes work in areas of government affairs, educational programs, professional societies, public awareness and leadership that has had a major impact on advancing these groups in the computing research community.

Letters in support of the nomination are welcome but not required.

Deadline: Nominations must be received by Feb. 14, 1997.

Send nominations for both awards to:
CRA Service Awards
Computing Research Association
1875 Connecticut Ave. N.W., Suite 718
Washington, DC 20009-5728
Tel. 202-234-2111; fax: 202-667-1066
E-mail: info@cra.org

CRA Award for Outstanding Undergraduates

The Computing Research Association announces the third annual CRA Undergraduate Award program, which recognizes undergraduate students who show exceptional promise in an area of importance to computing research. The 1996-97 award is made possible by the generous support of Microsoft Corp.

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

Because this is a relatively new award, many faculty and students have not yet heard about it. We encourage you to make it widely known in your department. The award is an outstanding way to recognize your best students and your department.

Nomination procedure

A nomination package consists of the following items:

1) Nomination form.
2) Nominee’s resume (two-page maximum).
3) Nominee’s transcript of academic record.
4) Nomination letter by department chair (two-page maximum).
5) Letter of support from one other supporting nominator (two-page maximum).
6) One-page description of student’s research or other achievements.

Criteria for selection of winners

1) Evidence of unusual talent in some area of computing research as demonstrated by one or more of the following:
a) significant research contributions, individually or as a member of a team
b) creation of highly innovative software or hardware design
c) demonstration of exceptional leadership or vision in a field of computing research
d) other evidence of extraordinary interest, excellence or commitment to computer science and engineering, including industrial experience, participation in special programs and mentoring or tutoring of other students
2) Outstanding academic record

Complete nominations must be submitted by the candidate’s department chair by Feb. 14, 1997. Each year, a department may nominate no more than one female and one male candidate. Nominations must be made in writing. For more information see http://www.cra.org/awards/97uginfo.html.

Four copies of the nomination package should be sent to:
CRA Undergraduate Award Competition
Computing Research Association
1875 Connecticut Ave. N.W., Suite 718
Washington, DC 20009-5728

CRA Award for Outstanding Undergraduates

1996-97 Nomination Form

Name of nominee
Program of study
Year in program
Department
University
Academic year address, telephone
Permanent home address, telephone
E-mail address
Name of department chair
Department chair’s e-mail
Name of supporting nominator
Supporting nominator’s e-mail
Signatures:

Department chair
Supporting nominator

Page 4
Computer Society offers CD-ROM

A new CD-ROM from the IEEE Computer Society contains the complete editorial content of all 1995 issues of 16 periodicals published by the society. The Computer Society '95 provides the complete text of all technical articles in a fully searchable form, not limiting the user to only titles and abstracts.


Computer Society '95 is available to IEEE Computer Society members at a special introductory price of $89.95 and to nonmembers for $95.

A new price of $154.95 is available to those who would like to join the Computer Society and receive the CD-ROM.

For membership information or to order the CD-ROM, call 800-CS-BOOKS, or use the society's Web site at http://www.computer.org/csprd and order using the secure online form with the Computer Society Online Catalog.

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CRA Board to meet in December

The Computing Research Association Board of Directors will meet Monday and Tuesday, December 9-10, at the Embassy Row Hotel in Washington, D.C. The meeting will begin with a reception and dinner Monday evening and conclude Tuesday at 3 p.m. The meeting is open, and observers are welcome to attend.

Observers will be charged the cost of meals if they plan to eat with the board. If you are interested in attending contact Kimberly Peaks of CRA as soon as possible, but no later than December 2. Tel. 202-234-2111; e-mail: kpeaks@cra.org

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CRA seeks internship candidates

The Computing Research Association seeks an intern to work in its Washington, D.C. office. This is an excellent opportunity for an entry-level person in the computing research profession to learn more about the field, meet leading computer researchers and help provide support to the research community.

A half of the intern's time will be devoted to: 1) serving as CRA's Webmaster; 2) managing CRA's data surveys and other data acquisition projects organized by CRA; and 3) providing computer support for the CRA server, databases and office staff.

The rest of the intern's time will be spent working on one or more of CRA's programs or projects, to be determined by an agreement between the intern and CRA's executive director. Possibilities include one or more of CRA's many programs for women and minorities in the computing profession, work on public policy relating to computing & D, writing for Computing Research News or one of CRA's other publications, or assisting the executive director with a historical research and writing project on the emergence of the academic discipline of computer science and engineering.

Candidates must hold at least a bachelor's degree in computer science, computer engineering or a closely related field and be considering a career in the computing research profession. Candidate must demonstrate technical proficiency to handle the work as Webmaster and computer-support provider.

Good writing and oral communication skills and the ability to work in a team environment are required. A bility to begin the internship on or before Dec. 1, 1996, is highly desirable. The internship is initially for one year, with a possibility of renewal for up to three years. Compensation will include salary plus access to the CRA health plan.

Applicants should send a cover letter as soon as possible describing their qualifications and reasons for being interested in the CRA internship; their available starting date; a copy of their academic record; a list of relevant work and technical experience; and names (with telephone numbers and e-mail addresses) of three references. Please send applications to Kimberly Peaks, CRA's director of administration. E-mail: kpeaks@cra.org; fax: 202-687-1066.
By Fred W. Weingarten
CRA Staff

In a last-hour burst of activity, Congress solved its fiscal deadline with itself and with the administration over funding and passed an omnibus continuing resolution bill. This will keep the government running and avoid a government shutdown.

The National Science Foundation (NSF) and Defense research did quite well in the final bill, at least in terms of initial expectations.

A few days before the end of his two-year tenure as assistant director for the NSF's Computer and Information Science and Engineering (CISE) Directorate, Paul Young said down informally with a small group of science reporters to discuss his experiences.

Over the last two years the critical importance of computer and communications technology to research and, more broadly, to society has been "internalized" both within NSF and in the political community, Young said. The science leadership now "realizes how very much" computing research is vital to the nation, and that belief provides a strong political argument for continued funding.

Young was upbeat about the demise of the High-Performance Computing and Communications program. Rather than a negative milestone, it was a sign that computing research has matured, he said. He paraphrased a comment made by a member of the House Science Committee at hearings last spring on renewing the HPCC. The congressman said, "You mean this work has become too important to be contained in a narrow initiative."

Young pointed out that the cross-omnibus bill framed as a continuing resolution.

The negotiations were not easy. Senators and representatives from both parties literally met around the clock for days to reach the compromise. At the same time, few members of Congress wanted another shutdown; Congress took most of the blame for the last shutdown. Republicans are in a very tight race to keep control of Congress and were not inclined to refurbish any more anti-incumbent attitudes among voters. It also was unclear whether Democrats would benefit from any last-minute holdups. So, for all the fusing under the Capitol dome, most outside observers thought a final bill by midnight of September 30 was a foregone conclusion.

The good news is that research funding, for the most part, was not contentious this year. With a few exceptions, the science agencies fared better than expected. Both Defense research funding and NSF appropriations passed both houses in slightly different but easily reconcilable forms. Nevertheless, the appropriations had not come out of conference, and each was part of a bigger bill that had other sections over which which congressional committees had disagreed.

NSF's final mark was $3.37 billion, down from the administration request of $3.56 billion but up from last year's level of $3.22 billion. The Research and Related Activities line item—the part that contains Computing and Information Science and Engineering (CISE) Directorate funding—received $2.43 billion, slightly less than the administration's request of $2.47 billion but substantially up from last year's $2.31 billion. The compromise bill also eliminated several problematic provisions in the House version, including a mandated, across-the-board cut in funding of 4%, and a supercomputer procurement provision that would have withheld the salary of any NSF employee who approved the purchase of an imported supercomputer at a price below cost. Finally, the bill removed a proposed $9 million cut in administrative expenses and salaries.

A through more detailed allocations to the programs still must be made, however. The approved funding numbers are close enough to the original request that no major reevaluations seem warranted or likely. NSF officials will have to take some time to look at the fine print, however, before they release the final allocations. (For details on the allocations in the original budget request, see the budget article on Page 1 of the May 1996 C R N.)

This last-minute good news is tempered by an outlook for the next few years. A administration and congressional budget plans project that science in general, and NSF in particular, are to begin a slow six-year slide, eventually dropping by as much as 40% in constant dollars. Whether there is any hope of countering that grim trend will depend in part on the outcome of the presidential and congressional elections.

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NSF's final mark was $3.37 billion, down from the administration request of $3.56 billion but up from last year's level of $3.22 billion. The Research and Related Activities line item—the part that contains Computing and Information Science and Engineering (CISE) Directorate funding—received $2.43 billion, slightly less than the administration's request of $2.47 billion but substantially up from last year's $2.31 billion. The compromise bill also eliminated several problematic provisions in the House version, including a mandated, across-the-board cut in funding of 4%, and a supercomputer procurement provision that would have withheld the salary of any NSF employee who approved the purchase of an imported supercomputer at a price below cost. Finally, the bill removed a proposed $9 million cut in administrative expenses and salaries.

A through more detailed allocations to the programs still must be made, however. The approved funding numbers are close enough to the original request that no major reevaluations seem warranted or likely. NSF officials will have to take some time to look at the fine print, however, before they release the final allocations. (For details on the allocations in the original budget request, see the budget article on Page 1 of the May 1996 C R N.)

This last-minute good news is tempered by an outlook for the next few years. A administration and congressional budget plans project that science in general, and NSF in particular, are to begin a slow six-year slide, eventually dropping by as much as 40% in constant dollars. Whether there is any hope of countering that grim trend will depend in part on the outcome of the presidential and congressional elections.

Paul Young

Directorate awards more than $275 million annually.

Hartmanis named to NSF post

Juris Hartmanis, an expert in the theory of computation and computational complexity, has been appointed assistant director of the National Science Foundation's Computer and Information Science and Engineer- ing (CISE) Directorate.

Hartmanis will lead the directorate, which has responsibility for NSF's efforts with the Internet, supercomputers, robotics and intelligent systems, information processing systems and computational research.

"We are thrilled to have someone with the perspective and expertise of Dr. Hartmanis," NSF director Neal Lane said in an agency press release. "He will be an exciting leader of the directorate at a time when computers are affecting nearly every aspect of American life and changing every field of science and engineering."

Hartmanis has been at Cornell University since 1965; he helped create Cornell's Computer Science Department and served as its first chair. He is a member of the National Academy of Engineering and a charter Fellow of the Association for Computing Machinery. In 1993 he received the ACM Turing Award, the highest award in computer science.

Hartmanis served on the Computing Research Association Board of Directors from 1989-94, a critical and formative time for the organization. In 1992 he chaired a National Research Council study, which resulted in the book Computing the Future: A Broader Agenda for Computer Science and Engineering. He two years' work with the committee, he said, helped focus his interest on computer science policy.

He received his undergraduate degree in physics from the University of M arburg, a master's in mathematics from the University of Kansas and a doctorate in mathematics from the California Institute of Technology.

In the NSF press release, Hartmanis said he sees the exponential growth in computing power coupled with the growth in communications capabilities as one of the most exciting aspects of computer science today.

"It's been a significant rise, like sitting in a conference room and observing a brand new science being created. I am delighted and surprised at what impact computer science is having," Hartmanis said in the press release.

"When I decided to be a computer scientist, I couldn't imagine the dramatic impact the field has had."

NSF is an independent federal agency created by Congress in 1950 to promote and accelerate scientific progress in the United States. The CISE Directorate awards more than $275 million annually.

Continued on Page 7
NSF research initiatives announced

The National Science Foundation's Computer and Information Science and Engineering (CISE) Directorate is introducing three new initiatives to support collaborative research.

**NSF** will provide support for the administration's proposal but caution that many details remain to be worked out.

Young from Page 6

A skilled and motivated researcher is most proud of accomplishment at NSF, Young has consistently shown his dedication to excellence in his work. He is always ready to take on new challenges and make significant contributions to the field, such as the development of exportable key-recovery technology. According to Young, the initiative is expected to have a primary focus on computing research, proposals including participation of disciplines other than computer science and engineering are encouraged.

**NSF** will provide support for the administration's proposal but caution that many details remain to be worked out.

Excerpts from Clinton’s speech on S&T policy

"I tell this story all the time, but I think it’s important. We just formed a partnership with IBM to produce a supercomputer over the next couple of years that will do more calculations in one second than you can do at home on your hard-held calculator in 30,000 years. Now, that should give you some indication of how quickly things are changing and how we will be rewarded if we stay on the cutting edge, and how we can be punished if we don’t."
The idea of commissioning an interagency group to protect the integrity of information—particularly within the public sector—is not a new one.

Policy News

New generation of interagency groups is born

By Louise A. Arnheim

Special to CRN

"Information assurance," a popular Washington expression this year, is now the catchphrase of several federal interagency working committees, commissions, councils, task forces, forums and working groups. A such, these two words are used to cover a range of civilian and national government activities, including the civilian concerns, such as unauthorized access, computer fraud, cryptography, national security and network concerns.

The idea of commissioning an interagency group to protect the integrity of information—particularly within the public sector—is not a new one. Nor is it unique to the federal government and telecommunications.

More than 40 years ago, President Truman established the US Communications Security Board (USCSB), an interagency body designed to coordinate C\text{OMSEC} (communications security) among federal government agencies and departments. Today, a few new names, that group is known as the National Security Telecommunications and Information Systems Security Committee (NSTISSC). With the release of the Clinton administration's agenda for A Nation Action for 21st Century, a new wave of interagency activity began. That agenda, which is intended to be the blueprint for the creation of the Information Infrastructure Task Force, the National Information Infrastructure Advisory Group and several other interagency groups described above, has a new wave of interagency activity.

A new generation of information assurance groups is being assembled. An I T F working group has been established to elevate board status, a new cabinet-level position. The I T F interagency group is being reorganized, and several substructures are being formed, and NSTISSC itself has produced an information assurance offshoot.

CGSSAB

One of the older groups concerned with information assurance is the Computer Security and Privacy Advisory Board. Established in 1979 by the US Congress and the Defense Department, the CSPPAB serves a range of purposes. CSPPAB's mission includes research, technical, educational and operational support. The advisory board is composed of leading computer and telecommunications experts and members from government agencies, including the Defense Department, the National Security Agency, the National Science Foundation, the National Institute of Standards and Technology, the National Aeronautics and Space Administration, the US Postal Service, the Federal Trade Commission, the Department of Justice and the Department of Energy. The board is responsible for formulating advice on improving the security of information systems. In addition, the board has provided guidance on a variety of technical and policy issues, including digital signatures, encryption, security protocols and standards.

The board is considering several important issues, including the selection of a permanent chair. James Flyay of Treasury is serving as the interim chair. Members include senior-level officials from Defense, Energy, Interior, Justice, State, Veterans Affairs, the US Department of Agriculture, the Federal Communications Commission and other federal agencies. The board has five main committees: the Subcommittee on Security Standards, the Subcommittee on Electronic Commerce, the Subcommittee on Electronic Transactions, the Subcommittee on Cryptography, and the Subcommittee on Computer Fraud.

CGSSAB's current chair is Willis Ware of RAND Corporation. For information on assurance group activities, see http://www.gsa.gov/IIA/PSWG.

President's Commission on Critical Infrastructure Protection

The commission was established by Executive Order 13010 last July, President Clinton created the legal underpinning for several new computer and information security structures. In contrast to the interagency groups described above, this commission takes a broad view of the term "infrastructure" and includes electric grid, oil and gas, transportation, water and telecommunications.

The commission is responsible for providing recommendations to the President and Congress on the creation of a national policy and framework for protecting the nation's critical infrastructure from cyber attacks. The commission is made up of 20 members, including government officials, industry executives, and experts in the fields of computer science, engineering, and public policy. The commission is divided into four subcommittees: the Subcommittee on Critical Infrastructure Protection, the Subcommittee on Critical Infrastructure Assurance, the Subcommittee on Critical Infrastructure Technology, and the Subcommittee on Critical Infrastructure Operations. Each subcommittee is responsible for developing recommendations on specific aspects of critical infrastructure protection.

The commission's work is currently ongoing, and it is expected to produce its final report in early 2001. The report will provide recommendations for a comprehensive national strategy for protecting the nation's critical infrastructure from cyber attacks. The commission's recommendations will be based on a thorough analysis of the current state of critical infrastructure protection, as well as a review of the latest research and technology in the field. The commission will also consider the views of industry experts and other stakeholders, as well as public input. The final report will be submitted to the President and Congress, and it is expected to be a key influence on future policy decisions in the field of critical infrastructure protection.


d Continued on Page 9
High-Performance Computing

By Louise A. Arneheim
Special to CRN

Since March when the DOD's High-Performance Computing Modernization Program (HPCMP) was awarded more than $200 million to continue modernization of its overall high-performance computing capabilities, working up four Major Shared Resource Centers (MSRCs), DOD will soon be able to make high-end resources available to individual services and agencies nationwide. Such resources are critical to supporting the type of modeling and simulation used in state-of-the-art warfighting systems.

The four awards were made as part of the Defense Research and Engineering High-Performance Computing Modernization Program. Now in its fourth year, HPCMP was established to ensure America's continued technical superiority in warfighting systems. As a result of HPCMP efforts, high-performance computational capability is now available to more than 100 defense labs, test centers, universities and industrial sites.

The MSRCs are part of a four-step program that includes a high-speed wide-area network, 12 distributed centers and the development of scalable applications software. Locations for the MSRCs are as follows:

- Continental U.S. (CONUS) Waterways Experiment Station in Vicksburg, MS; the Aeronautical Systems Center at Wright-Patterson AFB Force Base in Ohio; the Naval Oceanographic Office at the Stennis Space Center in Mississippi; and the University of Illinois in Urbana-Champaign.

Technological Advisory Committee to Develop a FIPS for the Federal Key Management Infrastructure

A technical advisory committee is exactly as its name implies: making "technical recommendations regarding the development of a draft Federal Information Processing Standard (FIPS) for the Federal Key Management Infrastructure." The Commerce secretary is charged with appointing the committee's 24 members, each of whom must be selected solely on the basis of established technical expertise in cryptography and the implementation and use of cryptographic systems.

The nomination process reportedly is under way. NSTIC will provide staff support for the high-speed network. The Defense Information Systems Agency (DISA) will provide technical guidance in the development of the FIPS. The National Institute of Standards and Technology (NIST) will provide technical oversight of the project for a three-year period.

Security from Page 8

maintaining and improving the availability, integrity and confidentiality of interagency Internet resources," an FNC statement said. Earlier this year PSWG was awarded an NPR Innovation Fund grant to "compare and validate agency approaches among other tasks. The group's co-chairs are Stephen L. Squires of the Defense Advanced Research Projects Agency and Dennis Steinaker of NSTIC. See http://www.fnc.gov/html/PSWG.html.

SIF

A substructure of IITF, the Security Issues Forum (SIF) coordinates the work of the various IITF committees and working groups. Attendance at meetings is open to all federal departments and agencies with information system security concerns. Voting members include all cabinet and higher-level agencies.

SIF recently issued an item for public comment and is now working to finalize a draft incorporating those comments. See http://www.iitf.nist.gov/sififr.html.

Speech from Page 7

"The second thing we have to do is make sure that all of the schools and the libraries in the country can afford to hook up to the Internet. Today, the cost of using the Internet can price some schools out of cyberpace. Fees can be inconsistent, with the highest rates often hitting places with the fewest resources. "So, all this will change. Under the new telecommunications law I signed a few months ago, the Federal Communications Commission will require that telecommunications service providers have to give to all schools and libraries affordable rates for Internet access..."

"Wouldn't it be a shame if we did all this work and there were schools that literally could not access the Internet, if there were libraries in little rural communities that couldn't do it? It is not necessary. This will pay for itself over and over again by increasing the users, the knowledge..."
Michigan State University Computer Science

The Department of Computer Science at Michigan State University offers the Bachelor of Science, Master of Science, and Doctor of Philosophy degrees in Computer Science. The department includes more than 200 high-end workstations, two workstation clusters interconnected by high-speed networks and other specialized research equipment.

Multimedia Laboratory and Advanced Computing Systems Laboratory (MSUnet)

The department is located in Orange County, California, three miles from the Pacific Ocean near Newport Beach and Santa Ana and 18 miles from Los Angeles. The campus is situated in the heart of a national park, surrounded by majestic landscapes and approximately 100 miles north of Los Angeles.

The campus also features a number of research facilities and natural areas. The campus is adjacent to the cities of East Lansing and Fairly small, with approximately 250,000 residents. The MSUnet, which provides access to an array of resources, is located in East Lansing, and the capital city, Lansing. The Greater Lansing area has approximately 700,000 people, and the surrounding communities have excellent schools and places for outdoor recreation.

Applications must contain the name of the department or unit, and 3) the body of the ad. Please request our Advertising Rate Card.

Applications should be submitted by Jan. 15, 1997. Letters of intent, a curriculum vitae, and three references to Faculty Search Committee, c/o Computing Research News Advertising, 1875 Connecticut Ave., NW, Suite 310, Washington, D.C. 20009-5728. Tel. 202-234-2111; fax: 202-667-1066; e-mail: crn@cra.org. E-mail submissions are preferred.

The Department of Computer Science at Michigan State University enjoys a park-like environment, with a number of universities and colleges located there. The department is adjacent to the city of East Lansing and Fairly small, with approximately 250,000 residents. The department includes more than 200 high-end workstations, two workstation clusters interconnected by high-speed networks and other specialized research equipment.

The ICS Department is an independent campus unit of the College of Engineering at Michigan State University, the Department of Computer Science at Michigan State University offers the Bachelor of Science, Master of Science, and Doctor of Philosophy degrees in Computer Science. The department includes more than 200 high-end workstations, two workstation clusters interconnected by high-speed networks and other specialized research equipment.

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Professional Opportunities

University of Waterloo

Faculty of Science, Computer Science
The University of Waterloo invites applications for a number of tenure-track positions in computer science. The department prides itself on being a leader in computer science education and home to a diverse research program of international stature. Because of its recognized strengths and breadth, the department is able to attract extremely well-qualified students at both undergraduate and graduate levels. We seek candidates who can contribute most effectively to the following areas of the department's research strengths: algorithms, artificial intelligence, computer architectures, computer graphics, computer vision, multimedia, computer networks, software for science education. Candidates must hold a Ph.D. in computer science or equivalent in computer engineering or computer engineering and computer science. New hires shall start for the September 1, 1997 term. The University of Waterloo is a bilingual university with a small French-speaking community. All applications must be submitted using the on-line system at the University of Waterloo's database of available positions. The application deadline is Jan. 1, 1997; early applications are encouraged. More information is available at http://www.uwaterloo.ca/ Academic/CS/positions.html.

Applications should include: a curriculum vitae, a list of at least three references, and a brief statement of teaching and research interests. Applications from women and minorities are particularly encouraged. The University of Waterloo is an equal opportunity, affirmative action employer.

University of Michigan Division of Science and Computing

A position is available for a research assistant professor or joint appointment with the Department of Computer Science to work in the areas of distributed systems, operating systems, and software engineering. The University of Michigan is a top public research university with over 50,000 students and a secondary school system that ranks among the top 20 in the United States. The School of Information and Computer Science is home to a diverse research program of international stature, but we particularly welcome those with a special interest in the areas of distributed computing, networking, and measurement throughout the undergraduate and graduate curriculum.

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

University of California, Los Angeles Department of Computer Science

The Department of Computer Science at UCLA invites applications for tenure-track positions at all levels. Applicants are expected to contribute to the department's research strengths in algorithms, artificial intelligence, computer architectures, computer graphics, multimedia, computer networks, software for science education. We seek candidates who can participate effectively in the research programs described above. The department is looking for candidates who would be able to lead a team of graduate students in Ph.D. research. Successful applicants should send a letter of application, a resume and the names of four references to Professor Richard M. Karp, Chair, UCLA Computer Science Department, 4326 Boelter Hall, Los Angeles, CA 90095-1598.

New York University Department of Computer Science

The Department of Computer Science at New York University is seeking candidates for a position as Assistant Professor. The candidate should have expertise in software engineering, programming languages, and/or software requirements and measurement. The successful candidate will be expected to teach graduate level courses in software engineering, have a strong commitment to research, and a commitment to building a team of researchers. Applicants are encouraged to submit a list of at least three references to Direct Support Letters to Professor Stephen D. St Arnold, Chair, Department of Computer Science, 325 millon Hall, New York University, New York, NY 11003.

The appointment is available for the 1997-98 academic year. The successful candidate will be expected to participate in the departmental teaching and research activities, and to supervise graduate students. Applications are encouraged from women and minorities. New York University is an equal opportunity, affirmative action employer.

University of Southern California Computer Science Department

Applications are invited for a tenure-track position in computer science for a postdoctoral researcher at the assistant or associate professor rank or at the rank of Distinguished Scholar. The successful candidate will be expected to participate at the highest levels in the areas of distributed computing, networking, and measurement throughout the undergraduate and graduate curriculum. The University of Southern California is an equal opportunity/affirmative action employer.

More information is available at http://www.usc.edu.增速 the best to the set in the year 2000.
Professional Opportunities

Professional Opportunities ads available on web
Not all departments and organizations choose to run their Professional Opportunities ads in CRN — their ads are only distributed electronically to the Computing Research Association’s web site and jobs mailing list. If you are interested in seeing more Professional Opportunities ads, access jobs information at http://www.cra.org. If you would like to subscribe to @jobs@cra.org you can run the announcements before they are published in CRN (or see the ones that don’t open in CRN), send the following mail message to @jobs@cra.org; subscribe jobs[name]firstname.lastname.

The Department of Computer Science at North Carolina State University seeks an assistant professor in the Broad Area of Real-Time Animation, including believable agents, behavioral animation, interactive avatars, and intelligent user interfaces.

Applicants should have received or be about to receive a Ph.D. degree, outstanding academic credentials and an ability to teach effectively at both the graduate and undergraduate levels. Salary open, based on qualifications.

Starting date: Sept. 1, 1997. To ensure full consideration, applications should be received no later than Dec. 15, 1996, although a search will continue until the position has been filled. Send resume, including names of three references, to Dan Katz, Dept. of Computer Science, North Carolina State University, 102 South Building, Raleigh, NC 27695-8202.

In addition to funding from the local industry, we have received support from the NSF, NIH, ONR and RTI.

The new faculty member will find a lively and collegial work environment. Synergistic activities in the department that emphasize a strong commitment to computing and professional education, to consistent professional development, and to access the department’s home page (http://www.csc.ncsu.edu) and to send e-mail to search@cis.ohio-state.edu.

The Research Triangle area was recently named one of the world’s most outstanding places to live. North Carolina State University, with over 30,000 students, 1000 faculty, 4000 graduate students, 9000 undergraduates and 6000 staff members, is one of the nation’s largest and most diverse universities. It currently has 117 full-time positions in computer science. The B.S. program is accredited by the Accreditation Board for Engineering and Technology, a high-technology company such as a Kaltra, Bell Northern Research, Data General, IBM, Fujitsu, Sun Microsystems, and the S.A. Institute, and research institutions such as EPA, NITSN/unh and RTI.

Interested candidates should send resumes (including citizenship and visa status) and the names of four references to Chair, Full-Time Recruitment Committee, Department of Computer Science, 226 Witherill Hall, North Carolina State University, Raleigh, NC 27695-8284.

A Ph.D. degree or equivalent in computer science or a related discipline is required or expected to complete such requirements prior to assuming and fulfilling the responsibility of a commitment to excellence both in research and teaching required for this position. Preference will be given to candidates with post-doctoral research experience. A Ph.D. in computer science is preferred. Industrial experience is highly desirable. For further information by e-mail: cs@csosu.edu or on our Web page (http://www.csosu.edu/dept/computer.science), RTI is an equal opportunity, affirmative action employer.

Rice University

The Department of Computer Science and the Center for Research on Parallel Computation at Rice University invites applications for a tenure-track faculty position at the assistant professor level. Rice University expect to have a number of positions available beginning in the Fall 1997 or later. We invite applications and invite applications for faculty and research staff positions.

The Department of Computer Science anticipates one or more full-time tenured and/or tenure-track positions at the assistant professor level. Applications of interest include education, health computing, multimedia and human interfaces.

We invite applications for a Ph.D. in computer science and a related Ph.D. in computer science. The B.S. program is accredited by the Accreditation Board for Engineering and Technology, a high-technology company such as a Kaltra, Bell Northern Research, Data General, IBM, Fujitsu, Sun Microsystems, and the S.A. Institute, and research institutions such as EPA, NITSN/unh and RTI.

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A Ph.D. degree or equivalent in computer science or a related discipline is required or expected to complete such requirements prior to assuming and fulfilling the responsibility of a commitment to excellence both in research and teaching required for this position. Preference will be given to candidates with post-doctoral research experience. A Ph.D. in computer science is preferred. Industrial experience is highly desirable. For further information by e-mail: cs@csosu.edu or on our Web page (http://www.csosu.edu/dept/computer.science), RTI is an equal opportunity, affirmative action employer.

Rochester Institute of Technology

The Department of Computer Science at the Rochester Institute of Technology invites applications for a tenure-track position at the assistant professor level. Information Management and Systems (SIMS) at Rochester Institute of Technology, a part-time position.

RTI is an equal opportunity, affirmative action employer.

Wayne State University

The Department of Computer Science and Engineering at Wayne State University invites applications for and interviews of qualified candidates for a tenure-track faculty position at the assistant professor level. Applicants should have received or be about to receive a Ph.D. or equivalent degree in a discipline or area closely related to computer science.

Wayne State University is located in Detroit, a city with over 450,000 residents. Wayne State University is a public research university and provides a stimulating environment for research, teaching and public service. The successful candidates will be encouraged to build a superb research facility, including parallel and distributed systems, programming languages and compilers, computer graphics and geometric processing.

Wayne State University is an equal opportunity, affirmative action employer.

University of Montana

The Department of Computer Science at the University of Montana invites applications for a tenure-track faculty position at the assistant professor level. The successful candidate will have a Ph.D. in computer science and a related Ph.D. in computer science.

Applications of interest include education, health computing, multimedia and human interfaces.

We invite applications for a Ph.D. in computer science and a related Ph.D. in computer science. The B.S. program is accredited by the Accreditation Board for Engineering and Technology, a high-technology company such as a Kaltra, Bell Northern Research, Data General, IBM, Fujitsu, Sun Microsystems, and the S.A. Institute, and research institutions such as EPA, NITSN/unh and RTI.

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Wayne State University is an equal opportunity, affirmative action employer.
University of Nebraska, Lincoln
Department of Computer Science and Engineering
The Department of Computer Science and Engineering (CSE) is seeking candidates for the positions of Assistant and Associate professors. The department offers a B.S. degree in computer science and Engineering, Master's and PhD degrees, and a named, endowed chair. The rank of the successful candidate will be determined according to the successful applicant's experience and qualifications. Women and men, members with disabilities. Areas of interest are systems and architecture, applications to science, security and visualization. The department is in the School of Engineering and Applied Science. The University of Nebraska is an affirmative action, equal opportunity employer.

Professional Opportunities

University of New Mexico
Department of Electrical and Computer Engineering
Electrical and Computer Engineering invites applications for a tenure-track position at the level of assistant professor (or rank commensurate with qualifications). Women and men, members with disabilities. The successful candidate will be expected to maintain an active research program, demonstrate excellence in teaching at the undergraduate and graduate levels, and will have a named, endowed chair. The rank of the successful candidate will be determined according to the successful applicant's experience and qualifications. Women and men, members with disabilities.

Clemson University
Department of Electrical and Computer Engineering
A tenure-track position at the rank of Assistant Professor is available to teach in the areas of digital signal processing, data communications, computer networks, and related research. We offer a wide variety of undergraduate, master's, and Ph.D. programs. Applications are invited for this tenure-track position at the rank of Assistant Professor. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of California, Los Angeles
School of Computer Science
Applications are invited for a tenure-track position at the level of associate professor (or rank commensurate with qualifications). Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

Brown University
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of California, Santa Barbara
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

Washington University in St. Louis
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of Illinois at Urbana-Champaign
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of Arizona
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of Connecticut
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of North Carolina at Chapel Hill
Department of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of California, Berkeley
Department of Electrical and Computer Engineering
Applications are invited for a tenure-track position at the level of assistant professor. Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of California, Los Angeles
School of Computer Science
Applications are invited for a tenure-track position at the level of assistant professor (or rank commensurate with qualifications). Women and men, members with disabilities. Applicants should have a Ph.D. in computer science or closely related area and a commitment to excellence in teaching. Women and men, members with disabilities.

University of California, Los Angeles
School of Computer Science
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Information Sciences Computing Research News November 1996

Professional Opportunities

Washington State University School of Civil Engineering and Computer Science

The School of Civil Engineering and Computer Science at Washington State University is seeking outstanding candidates. For full consideration, applications should be submitted by December 15 and should continue until the position is filled. Women and minority candidates are encouraged to apply.

Applications should be sent to:

Walter J. Pennington
Department of Civil Engineering
Washington State University
Pullman, WA 99164

The School of Civil Engineering and Computer Science is located in Pullman, a quiet university town in the northeastern section of the state. It is about 75 miles south of the northern tip of Lake Superior.

To apply, send a letter with your vita and names of at least three references to:

Dr. W. Pennington
Department of Civil Engineering
Washington State University
Pullman, WA 99164

University of Dallas
Department of Computer and Information Science

The University of Dallas has openings for tenure-track faculty. The School of Computing Science at the University of Dallas is a comprehensive computer science department with about 100 graduate students, a majority of whom are admitted to the Ph.D. program. Our faculty consists of 14 full-time professors, a curriculum vitae and the names and addresses of at least three references, to the above address or by e-mail to search@eecs.lehigh.edu.

The Department of Computer Science resides within the School of Arts and Sciences. The University of Arizona, PO Box 210077, Tucson, AZ 85721. All candidates are encouraged to apply.

At least three references, together with their postal addresses, should be submitted to:

Prof. Dan I. Moldovan
Department of Computer Science
Rutgers University
The University of Arizona

The Department of Computer Sciences of the University of South Carolina School of Computing Science, The University of Arizona, PO Box 210077, Tucson, AZ 85721. All candidates are encouraged to apply.

McDowell Hall, Room 110
University of Arizona

The University of Arizona is an Affirmative Action/Equal Opportunity employer and does not discriminate on the basis of race, color, national or ethnic origins, sex, or disability.

The Department of Computer Science invites applications for tenure-track positions in computer science, software engineering, and information systems.

University of Pennsylvania

The Department of Computer Science and Engineering at the University of Pennsylvania has two faculty positions available: assistant professor of computer science and computer engineering, and assistant professor of computer science. The positions are effective August 1997.

Applications are invited for tenure-track faculty positions beginning August 1997. The positions will be filled by an individual with an interest in computer hardware and software design, and by an individual with an interest in computer graphics and computer vision. Applicants should send a letter indicating their interest and a curriculum vitae, together with the names of three references to:

The School of Engineering and Computer Science at the University of South Carolina is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications will be considered as they are received. The University of South Carolina is an Affirmative Action/Equal Opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

The Department of Computer Science at the University of South Carolina is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

The University of Arizona is an Affirmative Action/Equal Opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

University of Texas at Austin

The Department of Computer Sciences at the University of Texas at Austin invites applications for a tenure-track position. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of Texas at Austin is in the top 10% of all computer science departments in the world in terms of research support. The department has 38 full-time faculty members, including 9 professors, 20 associate professors, and 9 assistant professors. The department also has several computer science labs, including the World Wide Web lab, the Digital Media lab, the VLSI lab, the Cyberlab, and the Software Engineering lab. The department is located in the Computer Science Building, which is one of the largest computer science buildings in the world.

The Department of Computer Science offers bachelor’s, master’s, and Ph.D. degrees in computer science. The department also offers a Ph.D. program in computer engineering. The department has 14 faculty members, including 9 professors, 4 associate professors, and 1 assistant professor. The department also has several computer science labs, including the World Wide Web lab, the Digital Media lab, the VLSI lab, the Cyberlab, and the Software Engineering lab.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of the South

The Department of Computer Science at the University of the South is seeking a tenure-track assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of the South is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of Washington

The Department of Computer Science at the University of Washington is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of Washington is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of Wisconsin-Madison

The Department of Computer Science at the University of Wisconsin-Madison is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of Wisconsin-Madison is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, Berkeley

The Department of Computer Science at the University of California, Berkeley is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, Berkeley is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, Los Angeles

The Department of Computer Science at the University of California, Los Angeles is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, Los Angeles is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, Santa Barbara

The Department of Computer Science at the University of California, Santa Barbara is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, Santa Barbara is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, Irvine

The Department of Computer Science at the University of California, Irvine is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, Irvine is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, Davis

The Department of Computer Science at the University of California, Davis is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, Davis is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, San Diego

The Department of Computer Science at the University of California, San Diego is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, San Diego is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.

University of California, Berkeley

The Department of Computer Science at the University of California, Berkeley is seeking an assistant professor of computer science. The position is available at the rank of assistant professor of computer science, starting in January 1997.

The Department of Computer Science at the University of California, Berkeley is an equal opportunity employer and does not discriminate on the basis of race, color, national or ethnic origin, sex, or disability.

Applications closing on December 15 and continuing until the position is filled. Women and minority candidates are encouraged to apply.
Computing Research News

November 1996

Professional Opportunities

From above, c/o Chair of Faculty Recruiting, Department of Computer Science and Engineering, Washington State University, Pullman, WA 99164-2802. Applications will be considered until the positions are filled. The University of Washington is an affirmative action/equal opportunity employer.

University of Georgia

Department of Computer Science

The Department of Computer Science at the University of Georgia seeks to fill an Assistant Professor position in software engineering. These are full-time, 9-month appointments. The search is open to candidates with research interests in areas including object-oriented programming, software engineering, and software metrics. The ideal candidate will have a Ph.D. in Computer Science with an expertise in software engineering or a related area. The University of Georgia has a strong tradition of excellence in research and teaching in software engineering, and a Ph.D. degree is required. Starting date is negotiable. Applications must be received by February 15, 1997.

Philips provides a full range of employee benefits and a liberal vacation and sick leave policy. The successful applicant should include a resume documenting their computer science and engineering education and experience. Preference is given to candidates with demonstrated ability to perform research and acquire external funding applicable to the research program. Applicants should provide a CV, a list of publications, and the names of three references. The search will continue until an acceptable candidate is found.

Computer Science

Virginia Polytechnic Institute and State University

Department of Computer Science

The Virginia Tech Department of Computer Science seeks to fill an anticipated position at the assistant professor level. Candidates must have a Ph.D. in computer science or a closely related field. The successful candidate will work in the area of software systems, with emphasis on systems software. The successful candidate will have demonstrated ability to perform research in computer science, and a Ph.D. degree in computer science or a related field is required. Starting date is negotiable. Applications must be received by February 15, 1997.

Philips provides a full range of employee benefits and a liberal vacation and sick leave policy. The successful applicant should include a resume documenting their computer science and engineering education and experience. Preference is given to candidates with demonstrated ability to perform research and acquire external funding applicable to the research program. Applicants should provide a CV, a list of publications, and the names of three references. The search will continue until an acceptable candidate is found.

Computer Science

University of California, Los Angeles

Center for Information Technology Policy

The Center for Information Technology Policy at the University of California, Los Angeles, seeks to fill an anticipated assistant professor position in information technology policy. The successful candidate will work primarily in the area of information policy, with a particular emphasis on technology policy, and will also be expected to contribute to the development of new areas of research and policy analysis in information technology. The ideal candidate will have a Ph.D. in computer science or a related field, and a strong background in information policy and computer science education. Starting date is negotiable. Applications must be received by February 1, 1997.

Philips provides a full range of employee benefits and a liberal vacation and sick leave policy. The successful applicant should include a resume documenting their computer science and engineering education and experience. Preference is given to candidates with demonstrated ability to perform research and acquire external funding applicable to the research program. Applicants should provide a CV, a list of publications, and the names of three references. The search will continue until an acceptable candidate is found.
Two computer scientists, Demetri Terzopoulos and Ming Li, were among those who received the 1996 E.W.R. Steacie Memorial Fellowships, one of Canada's premier science and engineering awards.

Aiso, two computer scientists were appointed to the A cademy of Sciences of the Veterinary University of Montreal’s Department of Computer Science and Operationnelle and Nicholas Pippenger of the University of British Columbia’s Department of Computer Science.

Winners of the E.W.R. Steacie Memorial Fellowships are internationally recognized researchers, nominators from universities from across Canada. The Steacie Fellowships are awarded by the Natural Sciences and Engineering Research Council of Canada and are sponsored by IBM Canada to expand their research and receive additional research support.

Terzopoulos, of the University of Toronto’s Department of Computer Science, is working through the evolving fields of computer vision and computer graphics.

When Terzopoulos asks if you would like to see his fish, don’t be surprised when he turns on his computer. It’s a virtual reality, and they inhabit a computer-generated virtual world.

The theoretical evidence for his outstanding contributions to computer vision and computer graphics is new and is also doing pioneering work in artificial life, an emerging field that transcends the traditional boundaries of computer science for technical reasons.

Human virtual fish are remarkable computational models that capture the growth, aging, environment as well as its locomotion, perception, behavior and learning. In the context of computer animation, Terzopoulos’ fish are not just motion graphic apearls. Rather, the fish are autonomous artificial creatures with “eyes” to see the world and “brains” that govern their actions. They swim, forage, eat and mate on their own. In fact, it takes emerging technology opportunities with potentially big payoffs at the intersection of different disciplines. “Computer vision and computer graphics are at a crossroads, independently of one another into major fields of computer science,” he said.

“However, they are fundamentally related. Graphics involves creating images from models, while vision involves interpreting them as images. The goal of my visual modeling research is to bridge the gap between these two fields.”

“Equally exciting is Terzopoulos’ work on human facial modeling. He has produced what is widely recognized as the most realistic human facial model to date. Modeling faces can be done in planning reconstructive surgical surgery and predicting its results. It is also a central concern for automatic face recognition and videoconferencing,”

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““There are many interesting questions to explore, Terzopoulous said. “For example, is it truly multidimensional, there’s no chance of becoming pigeonholed. In fact, it sometimes feels as if I’m at the center of a vortex.”

The fish can be viewed on the Web at http://www.cs.toronto.edu/~dt.

When computer scientist Ming Li was working on his doctorate at Cornell University in the early 1980s, his advisor, Juris Hartmanns, gave him seven papers to read on “Kolmogorov complexity.” He put them away. One year later, Li realitased that these theories and their applications, first formulated about 30 years ago, could provide the breakthrough for a problem he was trying to solve. It did, and as began his deep fascination with the theory.

Li, now a professor at the University of Waterloo, is playing a key role in developing teaching the power of Kolmogorov complexity. His book (co-authored with Paul Vitanyi) titled Introduction to Kolmogorov Complexity and its Applications, was the firs comprehensiv book in this field. It is used to teach graduate courses have developed over the world; various parts of the book have been translated into Chinese, Japanese and Russian. And Li and Vitanyi’s work has changed the status of Kolmogorov complexity—from being esoteric to a tool for concrete investigations.

The power of Kolmogorov complexity is that it allows scientists to quantify the randomness of individuals in objects in an iedical and absolute manner. That is impossible using classical probability and realistic home, for example, in computer science it is often necessary to determine how fast a certain program runs— it is difficult using conventional methods because the program must be run with a large number inputs, each result analyzed and an aver time arrived at. Using Kolmogorov complexity, one only input is needed to completely characterize a program.

In one area of his current research, which also involves machine learning, Li is applying the fundamental biology. Li is extending the use of Kolmogorov complexity in the field of microorganisms. DNA sequence analysis, physics and computation. Others are following his lead. “Since our book came out in 1997, I’ve been hearing from researchers who have been inspired to use Kolmogorov complexity—from philosophers working on inductive inference to marine scientists trying to use it to measure the complexity of dolphin sounds,” Li said. “This is a powerful idea. The are few applications for it yet.”

Meanwhile, the Royal Society of Canada, founded in 1882, has a mandate to develop learning and research in the arts and sciences through its three academies: the Royal Society of Canada, the Royal Society of Canada, the Royal Society of Canada, the Royal Society of Canada, the Royal Society of Canada.

Research opportunities at the Royal Society are acknowledged by their peers as having reached the top of their respective domains.

Montreal’s Brunschweig is a world authority in cryptography and quantum information to the National Academy of Sciences. The following protocols, which allow one to prove knowledge of a secret without having to disclose anything about it. He pioneered the field of quantum cryptography, which takes advantage of einstein’s uncertainty principle and its direct consequences, to develop a radically new dimension to the ancient problem of secure communication. It is cited as a possible solution to the creation of an unbreakable communication, which will be used in the future for secure communication. It is cited as a possible solution to the creation of an unbreakable communication, which will be used in the future for secure communication. It is cited as a possible solution to the creation of an unbreakable communication, which will be used in the future for secure communication. It is cited as a possible solution to the creation of an unbreakable communication, which will be used in the future for secure communication. It is cited as a possible solution to the creation of an unbreakable communication, which will be used in the future for secure communication. It is cited as a possible solution to the creation of an unbreakable communication, which will be used in the future for secure communication.