

Fresh start for NSF supercomputer centers

After a lengthy review, the National Science Foundation has decided to scrap its present supercomputer centers program. In its place, the agency last week introduced an initiative that focuses on taking advantage of newly emerging computer technology and on broadening participation in computational science and engineering.

"Advanced scientific computing in this country has been an enormously successful enterprise," says Neal F. Lane, director of NSF. However, "the field has evolved and matured. It's a much richer scene now than it was at the time the program started [10 years ago]."

At present, NSF funds four supercomputer centers. Located at the University of Illinois at Urbana-Champaign, Cornell University, the University of Pittsburgh, and the University of California, San Diego, these facilities were initially geared toward testing the power and utility of supercomputers for scientific purposes (SN: 3/2/85, p.135). Over the years, the four centers added a variety of specialized computers and software to handle the output from their supercomputers, and they began to work together in joint efforts (SN: 11/28/92, p.374).

Meanwhile, a number of universities, government laboratories, and other insti-

tutions developed their own high-performance computing centers. To tackle a variety of research questions, these groups often relied not on multipurpose supercomputers but on networks of desktop workstations and other computers (SN: 5/1/93, p.280).

Such changes in the computing landscape prompted NSF to take a close look at its centers. In September, a task force headed by Edward F. Hayes of Ohio State University in Columbus recommended that NSF stage a new competition to select sites for high-performance computing centers.

The task force called for broadly based partnerships linking well-equipped "leading-edge" sites to experimental facilities at universities, specialized research centers, and regional computing operations.

"These recommendations are designed to set the centers program on a new course that builds on its past successes yet shifts the focus to the present realities of high-performance computing and communications and provides flexibility to adapt to changing circumstances," the task force concluded.

The task force report became the basis for NSF's "Partnerships for Advanced Computational Infrastructure" initiative. The agency expects most of the proposals to come from universities, but the

Natl. Ctr. Supercomputing Apps./Univ. of Ill.



A combination of various computers, special display equipment, and software at a supercomputer center allows researchers to interact with three-dimensional models of protein molecules.

partnerships may include state-supported computing centers, private organizations, and the national laboratories.

Whether any of the present supercomputer centers closes down will depend on the results of the competition, says Paul Young, head of NSF's computer and information science and engineering directorate. Given budget constraints, the total number of funded centers is unlikely to increase and may actually decrease, he adds.

NSF has posted its advanced computing initiative and the task force report on the World Wide Web at <http://www.cise.nsf.gov/>. —I. Peterson

Trauma disorder high, new survey finds

Nearly 1 adult in 12 in the United States has suffered from post-traumatic stress disorder (PTSD) at some time in his or her life—a much larger proportion than many researchers and clinicians had assumed, according to a new national survey.

In more than one-third of the cases, PTSD symptoms lasted for at least 10 years after having been triggered by a traumatic experience, asserts Ronald C. Kessler, a sociologist at the University of Michigan in Ann Arbor.

Although half of the women and 60 percent of the men surveyed reported traumatic experiences, PTSD occurred twice as often in women as men, Kessler and his coworkers report in the December ARCHIVES OF GENERAL PSYCHIATRY. About 10 percent of women and 5 percent of men reported symptoms indicating a brush with the disorder.

"What's striking is that it's atypical to develop PTSD in the face of most traumas," Kessler contends. "There are probably important individual differences that predispose some people to this disorder."

The researchers conducted psychiatric interviews with a sample of almost 6,000 people age 15 to 54 who are representative of the U.S. population. PTSD

was diagnosed if participants reported key symptoms occurring after a traumatic event such as rape, sexual molestation, physical attack, military combat, repeated physical abuse, a natural disaster, or witnessing the death or physical abuse of another person.

Symptoms of PTSD include nightmares and intrusive thoughts about past traumatic incidents, emotional detachment from loved ones, avoidance of situations that bring a prior trauma to mind, extreme suspicion of others, and excessive responses to being startled.

Most participants who reported a traumatic event had experienced more than one. PTSD diagnosis rested on symptoms following the event rated most distressing by the individual.

Volunteers most often reported having seen someone get killed or badly injured (36 percent of men and 15 percent of women), having lived through an earthquake or other natural disaster (19 percent of men and 15 percent of women), and having survived a life-threatening accident (25 percent of men and 14 percent of women).

A larger proportion of women than men reported rape (9 percent), sexual molestation (12 percent), and physical abuse and neglect during childhood

(around 4 percent).

Men cited more instances than women of physical attacks, military combat, threats with a weapon, and being held captive or hostage.

About 20 percent of women exposed to a trauma developed PTSD, compared to 8 percent of men. Reasons for this disparity are unclear, Kessler says. One possibility is that some traumas that occur more often to women—such as rape—are more likely than others to trigger PTSD.

A large majority of both men and women diagnosed in the study as having PTSD cited a history of other psychiatric conditions, including depression, anxiety disorders, and substance abuse. A general predisposition to various mental problems may characterize those who develop PTSD, Kessler suggests.

"Kessler's survey is extremely important," asserts Naomi Breslau, a psychologist at the Henry Ford Health Sciences Center in Detroit. "It confirms that PTSD is not simply a natural stress response to unnatural events."

Preliminary evidence from a Detroit-area survey directed by Breslau showed PTSD rates similar to those in the new study (SN: 3/30/91, p.198). Previous studies had indicated that PTSD afflicts from 1 percent to 3 percent of U.S. adults.

—B. Bower