

## SCIENCE AND TECHNOLOGY PROGRAM - USA

jump. NSF also receives \$45 million to construct a second terascale (trillions of operations per second) computing site. The NSF Computer and Information Science and Engineering (CISE) directorate then totals \$483 million. Total IT R&D spending should total \$2.1 billion, of which the largest support of IT R&D is thr DOE with \$657 million.

The "**21<sup>st</sup> Century Research Fund**", created by the Clinton Administration to highlight programs that it considers important to the nation's science and technology enterprise, rises by 12.1% in Fiscal Year 2001 to \$44.9 billion. Most of this increase is due to a 14.4% increase to the total NIH budget, although there are increases for nearly all the programs in the Fund. The Fund includes both R&D and non-R&D items, while excluding large parts, primarily the development area, of the total federal R&D portfolio.

### **Program Developments at the National Science Foundation (NSF):** (basis NSF)

In Fiscal Year 1999, NSF awarded a total of \$1.849 billion for research activities, of which \$242 million (approximately 13%) was invested in 196 university-based centers. To NSF, an award to a center is much larger and has longer duration than grants to individual investigators or research groups. NSF supports centers for the purpose of addressing long-term high-risk research that often requires interdisciplinary approaches. The researchers and their students work in an integrated fashion in these centers, not as separate projects with a common funding source. NSF-supported centers usually have a dual mission that integrates research and education. A large portion of NSF's centers are also expected to establish working partnerships with industry. Many of these centers have expensive research equipment, but their funding is for research and education, not as user facilities.

The management of NSF-supported centers is highly decentralized. Each disciplinary area of NSF has selected the best way in which to use this center mode of support. NSF supports centers that use a variety of different configurations. Most centers are located on one university campus, but they can also consist of one lead university with a small number of core partner universities. Some centers are consortia that are led by a team in one university, and include nodes at other universities, companies, government labs, schools or school districts, and non-profit research organizations. When the activities in a consortium are tightly integrated among sites, they become "virtual centers" or "centers without walls," usually linked by Internet, video-conference capabilities, or other electronic networks. Despite their decentralized management and varied configurations, there are certain commonalities among all NSF-supported centers. Most initial awards are for five years with the possibility of renewal, depending on the program, and may extend their period of NSF support through competitive renewal for a total of 10 to 20 years or more. Extensive merit review by peer evaluators is universal, usually by teams of on-site visitors annually, or at least once every three years. Some centers have been refused renewal of funding, and others have been terminated during an award, due to poor performance. In addition to the