

Budget boosts information technology

On Feb. 1, President Bill Clinton submitted to Congress a \$1.8 trillion budget for 2000 that includes \$78.2 billion for civilian and military research and development (R&D). That figure represents a small drop in R&D spending, and the budget puts an emphasis on computer and information technology, which the White House says is needed to ensure the nation's economic competitiveness.

Adjusted for an expected 2.0 percent inflation rate, the R&D budget decreases 3.3 percent from 1999 appropriations, with defense R&D shouldering most of the drop. It would decline 7.3 percent while civilian R&D would go up by 1 percent.

Although the White House projects a \$2.4 trillion total surplus for the federal budget over the next decade, the current budget proposal does not make use of any of those funds. The President wants to reserve most of that money to rescue Social Security, which on some current predictions will run dry when baby boomers retire in the next century.

In addition, administration officials have to cope with current law that puts a cap on all discretionary spending, which includes R&D. "I think the budget that you see for R&D reflects the constraints that are on all budget [items] and the [administration's] priorities," says presidential science adviser Neal Lane.

Nevertheless, says Secretary of Energy Bill Richardson, "science has done well in the early skirmishes. This is a strong budget."

The theme running through the R&D budget proposal is a \$366 million program known as the Information Technology Initiative for the 21st Century (IT²). Distributed across six federal agencies, the funds

target basic, long-term research toward faster, more powerful computing. Sixty percent of the IT² funds would go to support university-based research.

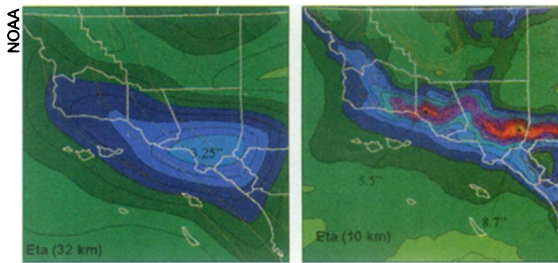
"They want to encourage the fundamental research that industry does not tend to do," says Kei Koizumi of the American Association for the Advancement of Science's R&D Budget and Policy Project.

Total 2000 R&D funds for the National Science Foundation would amount to \$2.9 billion, a 5.8 percent boost. (All percentage change figures are adjusted for inflation.) This includes \$146 million to lead the IT² initiative. The agency plans also to devote \$50 million to study biocomplexity—a way of learning how biological systems interact.

The Department of Energy would get \$7.5 billion, a 1.1 percent increase. The Spallation Neutron Source at Oak Ridge (Tenn.) National Laboratory would continue receiving funds for its anticipated construction next year. Projects devoted to renewable energy would receive \$208 million, an 18 percent rise. These funds would support research into natural-gas vehicles, efficient automobile design, and energy-efficient homes.

As part of IT², DOE plans to devote \$70 million to developing advanced computers for scientific simulation. Such technology would build upon existing projects to improve computer modeling of fuel combustion, climate change, and chemical and physical processes.

In 1999, the National Institutes of Health enjoyed a \$2 billion increase in funding over the previous year. The request for 2000 holds NIH's current appropriation steady after inflation. The Centers for Disease Control and Prevention, which also



More-powerful computers could make accurate weather predictions routine. A current computer model predicted 3 inches of rainfall in the Los Angeles area on Feb. 23 and 24 (left). A more sophisticated model predicted 8 inches (right)—matching the actual rainfall.

falls under the jurisdiction of the Department of Health and Human Services, would see a 29 percent increase to nearly \$105 million for investigation of disease outbreaks, laboratory improvement, and public education.

The funding request for NASA shows that it will need to continue living up to its "faster, better, cheaper" slogan. NASA is slated to receive \$9.8 billion, a slight drop from 1999. Money for the International Space Station, however, would increase 6 percent after inflation to nearly \$2.5 billion. The change is designed to keep the project on schedule even if Russia's shaky economic situation prevents that country from meeting its obligations.

The Department of Commerce, which oversees the National Institute of Standards and Technology and the National Oceanic and Atmospheric Administration, would receive a 6.1 percent boost to \$1.2 billion. The White House hopes to get \$239 million, a 19 percent increase, for NIST's Advanced Technology Program, which funds high-risk projects expected to have a commercial payoff. This program is a favorite of the administration but repeatedly gets scaled back by Congress. NOAA would receive \$283 million for its research into climate change and air quality.

The President's budget cuts the Department of Defense's R&D funds 7.8 percent overall, continuing a trend to shift R&D away from the military to civilian agencies. DOD plans to use part of its budget to step up research into protecting people against biological and chemical weapons and to encourage technologies that will have broad commercial applications.

The White House expects that R&D funding for subsequent years will freeze at 2000 levels, says Elgie Holstein, associate director of natural resources at the White House Office of Management and Budget. "This is not a reflection of any set of policy decisions," he says, but "a structure . . . to ensure the long-term viability of Social Security." —C. Wu

R&D Budget Authority (in millions of dollars)*				
Agency or Department	FY 1998 (actual)	FY 1999 (estimated)	FY 2000 (proposed)	Percent Change 1999–2000**
Defense	37,568	37,204	35,064	-7.8
Health and Human Services (National Institutes of Health)	13,860 (13,632)	15,792 (15,612)	15,984 (15,933)	-0.8 (0.1)
NASA	9,753	9,714	9,771	-1.4
Energy	6,483	7,240	7,465	1.1
National Science Foundation	2,528	2,721	2,934	5.8
Agriculture	1,561	1,796	1,718	-6.3
Commerce	1,091	1,075	1,162	6.1
Transportation	859	891	1,230	36.0
Interior	472	517	590	12.1
Environmental Protection Agency	636	669	645	-5.6
Other	1,515	1,648	1,679	-0.1
Total	76,326	79,267	78,242	-3.3
(Total for defense R&D, all agencies)	(40,570)	(40,638)	(38,481)	(-7.3)

*Adapted from Office of Management and Budget data; figures reflect rounding.
**Adjusted for anticipated 2.0 percent inflation.