

Federal Budget 1996: R&D Would Fall

Presidents have long asked Congress to increase federal funds for science and engineering — or at least to hold spending to existing levels. But in the \$1.6 trillion budget blueprint that Bill Clinton sent Congress this week, research spending would effectively decline.

Clinton proposes spending almost \$73 billion on research and development (R&D) during the 1996 fiscal year (FY), which begins Oct. 1. This corresponds to an increase over last year of just \$169 million.

However, because the Office of Management and Budget is predicting a 2.8 percent rate of inflation for fiscal 1995, the newly proposed budget would actually buy 2.6 percent — or \$1.89 billion — less than it did this year. How much is that? More than three times this year's total R&D spending by the Environmental Protection Agency.

Percentages in this article have been adjusted for the anticipated inflation.

Under the President's plan, civilian R&D would rise 0.4 percent, to \$34.9 billion. Defense spending, while continuing a recent downward trend, would still capture 52 percent of the budgetary pie. It's slated to drop another 5.2 percent this year.

Among big-ticket items, global change research involving 12 agencies would receive \$2.16 billion, a 1.0 percent decline. Space station funding would remain capped at \$2.1 billion. Clinton has requested \$1.14 billion for high-performance computing and communications — the information superhighway — an increase of \$63 million, or 2.9 percent. Funding for the Ballistic Missile Defense Organization, formerly the "Star Wars" office, would jump 3.5 percent, to \$2.9 billion. And funds for the multi-agency Human Genome Project would rise to \$195 million, a 4.1 percent increase.

National Science Foundation

The National Science Foundation would distribute its postinflation increases fairly equally across disciplines. Environmental and global change studies would fare better than average, climbing 5.1 percent, to \$356 million.

The agency's support for academic research facilities would drop 18 percent, to \$100 million. NSF would also cut by 47 percent its funding for major research equipment. Part of this drop, an

agency official explained, traces to the completion of NSF's financing of the twin GEMINI telescopes.

Energy

Clinton would give the biggest R&D increase in next year's budget — \$488 million — to Department of Energy programs. That's no small feat, considering that Energy Secretary Hazel R. O'Leary has made budget cutting her agency's byword.

in for a more costly, reactor-based source proposed 2 years ago (SN: 4/17/93, p.246).

And under a new program to maintain the reliability of U.S. nuclear weapons, DOE plans to start up three major new programs. Clinton is asking Congress for \$55 million to begin work on a \$1.8 billion National Ignition Facility, \$25 million to operate a Los Alamos Neutron Scattering Center, and \$45 million to launch a strategic computing initiative. Together, the three should simulate weapons information formerly available only through nuclear testing.

Earth Sciences

The National Oceanic and Atmospheric Administration would win an overall hike of 5.1 percent. In fact, the agency's R&D budget of \$597 million represents 28 percent of the total. However, funding for certain R&D programs, such as its navigation and positioning services, would drop 0.6 percent, to \$86.3 million. NOAA's coastal ecosystem programs would lose 1.5 percent, receiving \$206.2 million next year.

Similarly, R&D within the U.S. Geological Survey would climb \$14.9 million, for an effective loss of 0.2 percent.

Biomedicine

Under Clinton's plan, AIDS research would continue to dominate the National Institutes of Health budget. At \$1.4 billion, it would account for fully 11.9 percent of the agency's R&D spending. Most of the proposed 2.2 percent boost would support basic research.

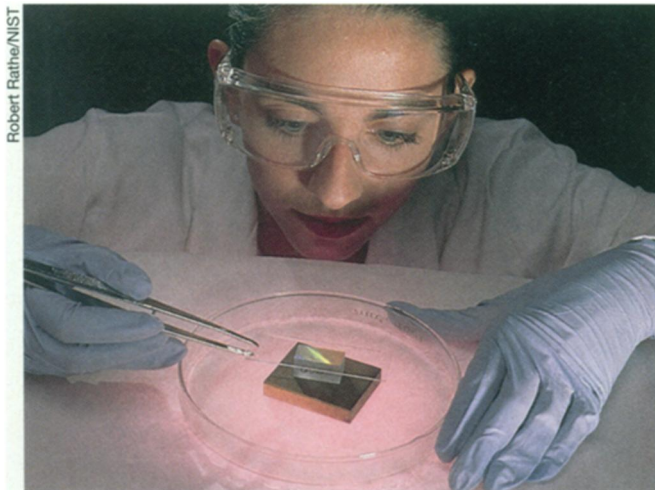
Breast cancer studies, another priority, are budgeted to climb 10.2 percent, to \$426 million. Part of the increase would allow NIH to continue hunting for genes that pose a breast cancer risk.

Research on tuberculosis, which has made a comeback, would increase a notable 3.9 percent, to \$53 million.

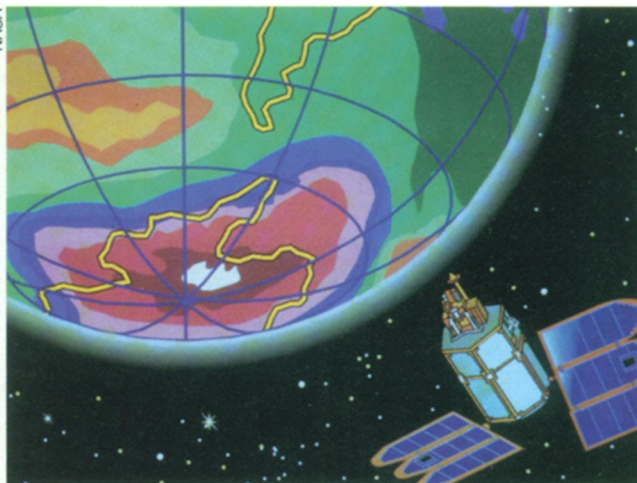
NASA

Administrator Daniel S. Goldin hopes to make NASA "less of an operations agency and more of an R&D agency." So though the President plans to slash NASA's overall \$14.26 billion budget by more than one-third over the next 5 years, R&D would suffer less.

Clinton's budget continues to de-



A NIST researcher works on a so-called pocket chemistry sensor for environmental and medical use.



The newest generation of the Total Ozone Mapping Spectrometer, part of NASA's Mission to Planet Earth.

For researchers, the new science facilities initiative is sure to be DOE's most notable line item. If funded, it would provide \$100 million to make state-of-the-art equipment at DOE centers available to thousands of new users, often by reducing the time critical instruments sit idle.

DOE also hopes to garner \$8 million to begin conceptual design of a unique, accelerator-based ("spallation") neutron source. Aimed at supporting the materials science community, it would stand

emphasize human space flight in favor of science, aeronautics, and technology. Planetary exploration would take a 1.5 percent cut. But a new program aimed at developing cheaper, lighter spacecraft would garner \$495 million.

The budget also earmarks \$159 million for developing reusable launch vehicles, a less costly alternative to the space shuttle. Funding for Mars missions would jump to \$109 million, nearly double the current amount. Mission to Planet Earth, which studies our environment from space, would effectively fall 2.8 percent, to \$1.34 billion.

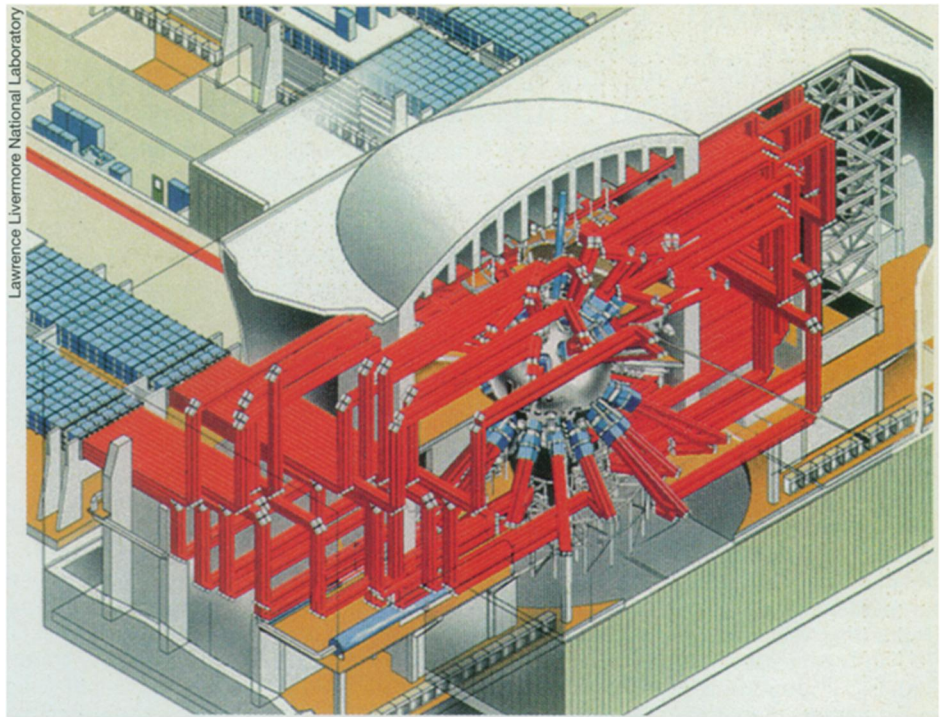
Technology

The Commerce Department's Technology Administration would garner \$1.04 billion, a 16.1 percent increase. The National Institute of Standards and Technology would take home \$1.02 billion. NIST's budget reflects a 19.6 percent overall hike for technology development and industrial outreach programs. Its Advanced Technology Program, which develops high-risk, potentially high-pay-off enterprises with industry, would rise 11.2 percent, to \$490.9 million.

Environment

Though Clinton would boost EPA's R&D dramatically, much of the increase would go to Science to Achieve Results. Launched this year, the program will fund not only research grants but also an expected 200 fellowships for graduate research next year.

Clinton proposes allocating \$357.2 million for multimedia research — an increase of \$96.5 million, or more than 34 percent, even after inflation. This pro-



DOE's proposed National Ignition Facility would use 192 laser beams to compress a target and trigger nuclear fusion. Occupying a building the size of a football field, the project is scheduled for completion in 2002.

gram, which integrates air, water, and soil threats to an ecosystem, will include a new research focus on environmental hormones (SN: 1/8/94, p.24) and manage EPA's risk assessment activities.

EPA also plans to launch a \$1.5 million "green chemistry" initiative to spur development of new pollution prevention techniques and to help Uncle Sam's purchasing chiefs identify "environmentally preferable products."

Congressional Reaction

Republicans in Congress have not taken kindly to Clinton's FY 1996 spending plan. But because several Republican leaders favor science, they may go easy on some R&D budgets.

But not all. They have already targeted a few programs for elimination (SN: 1/14/95, p.20). And though Robert S. Walker (R-Pa.), chair of the House Committee on Science, backs the space station, he expressed regret that Clinton places such strong emphasis on applied science in his budget.

New members of Congress would also like to end research using human embryos, as well as shrink the budget for research on global change.

Republicans are also pushing for legislation that would require federal agencies to undertake more risk assessments and cost-benefit analyses when preparing health, safety, and environmental regulations. The bill would require that regulations costing \$100 million or more undergo peer review.

At a House science committee hearing last week, Presidential Science Adviser John H. Gibbons argued that this bill "would be neither fair, effective, nor affordable." Moreover, the technical data needed for such comprehensive risk assessments are not available.

And peer review requirements of this legislation would add academics to the list of people who "feed at the government trough," Gibbons said. Committee members groaned and suggested that might require amendment.

— R. Cowen, T. Adler, and staff reports

Research and Development Funding Budget Authority (in millions of dollars)*				
Department or Agency	FY 1993 actual**	FY 1995 estimated	FY 1996 proposed	% Change 1995/1996***
Defense-Military	38,898	36,272	35,161	-5.9
Health and Human Services (National Institutes of Health)****	10,472 (10,326)	11,676 (11,321)	12,123 (11,789)	+1.0 (+1.3)
NASA	8,873	9,455	9,517	-2.1
National Science Foundation	2,012	2,450	2,540	+0.9
Agriculture	1,467	1,554	1,499	-6.4
Commerce	793	1,284	1,404	+6.5
Transportation	613	687	755	+7.2
Environmental Protection Agency	511	589	682	+13.0
All Others	1,957	2,110	2,077	-4.4
(R&D Facilities only)	(2,727)	(2,063)	(1,962)	(-7.7)
R&D Total	72,493	72,714	72,883	-2.6

* Derived from OMB data; figures reflect rounding
** 1994 figures are unavailable
*** After subtracting OMB's projected FY '95 inflation rate of 2.8%
**** Breakout of NIH figures from HHS total