R&D Budget: More Wins Than Losses

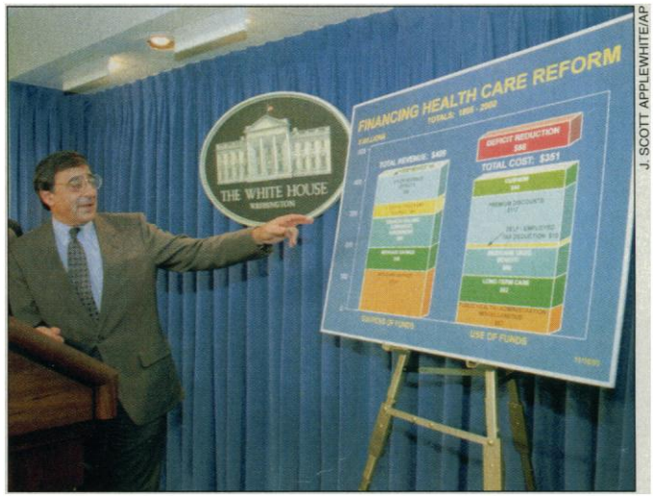
NSF and NIH are expected to come out ahead of inflation in the 1995 budget the Clinton Administration is now preparing, but there are losers, too

President Bill Clinton's upcoming budget contains increases for the major science agencies, *Science* has learned, but some areas of research will be squeezed as tight controls on federal spending go into effect next year. Many of the amounts Clinton is expected to request for R&D in fiscal year 1995 are meager compared with those of past years, but they look positively generous when matched up with the rest of government spending.

According to information obtained by *Science* in advance of the budget's official release on 7 February, the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST), and earth-observation science within the National Aeronautics and Space Administration (NASA) are all slated to get hefty increases. The National Institutes of Health (NIH) is expected to more than hold its own, while space scientists and those funded by the Department of Energy (DOE) are likely to take it on the chin.

The key to understanding this year's science budget is a wrinkle that will dominate political debate in the coming months. It's a law limiting the growth of the portion of the budget (one-third of the $1.5 trillion total) that pays for all federal research, as well as for every nonentitlement program in the civilian and military sectors. The law requires that this "discretionary" spending be held flat in 1995—$539 billion compared with $537 billion in the current fiscal year.

As a result, the Clinton Administration must find "losers" to offset increases in funds for activities judged to be important in meeting national needs. The latter include several dozen new and existing programs that, taken together, will increase by 18% in the president's 1995 budget, according to Leon Panetta, director of the Office of Management and Budget (OMB). These are often referred to as "investment" programs. The other side of the coin, Panetta said at a press briefing last month, is that nine of the 14 Cabinet-level agencies will get less money in 1995 than in the current fiscal year, which ends on 30 September. Of course, many of these losers have strong political backing on Capitol Hill, and Congress is certain to undo some of the Administration's largesse to ease the pain elsewhere.



J. SCOTT APPLEWHITE/AP

Budget blues. OMB director Leon Panetta is struggling to balance increases in programs such as health care with cuts in others areas.

Who's up, who's down

Once again, NSF is a presidential favorite. Its expected total increase of 7% over this year's budget of $3.02 billion is the best for any agency that funds significant amounts of academic research (although it pales in comparison to last year's requested increase of 16%, which Congress trimmed to 11%). Within NSF, the $570 million education directorate is expected to get a smaller increase, leaving about $200 million to be added to the research accounts—including polar programs and academic infrastructure.

NSF's favored status is not new. Past presidents had pledged to double the foundation's budget in 5 years, and Clinton's proposed increase reflects in large measure NSF's contribution to such high-profile government projects as high-performance computing, advanced manufacturing and materials science, and global change.

The $11 billion NIH budget is expected to fare almost as well, but only thanks to a surprisingly successful last-minute appeal. Last month, the newsletter *Washington Fax* reported that NIH officials were told to expect an increase of 2.9% (about $300 million)—even less than last year's 3.2% request and only half the boost Congress eventually approved for 1994. *Science* has learned that OMB last week agreed to give NIH $200 million more, after last-ditch lobbying by NIH and its parent agency, the Department of Health and Human Services. The extra money raises to about 4.7% the overall increase Clinton is expected to request.

But that rise will not be spread uniformly across the 22 institutes and centers. As was the case last year, most is earmarked for a handful of programs. This year's big winners include research on women's health, the human genome project, and computer-related activities within the National Library of Medicine.

The message from Clinton for scientists supported by NASA is mixed. The $1 billion Mission to Planet Earth program, a system of satellites to monitor environmental conditions on Earth, would receive a double-digit increase thanks to the ardent backing of Vice President Al Gore. At the same time, the $1.8 billion space science program, including the large orbiting observatories and planetary missions as well as smaller projects in astronomy and physics, may be cut by $100 million or more. And more bad news for space science is on the way: Funding is projected to decline by 30% over the next 4 years. NASA's overall budget will be trimmed by about 2% in 1995, to $14.3 billion.

Within DOE, the news is generally bleak. The agency's overall budget of $18.7 billion in 1995 is slated to shrink by nearly $1 billion, which Energy Secretary Hazel O'Leary has said is the second largest cut among the 14 Cabinet-level agencies. And none of the money from the canceled Superconducting Super Collider (SSC)—which is scheduled to get $180 million in 1995 to continue its shutdown—will be shifted to other research projects. Funding for DOE's national labs and for its basic energy and general science programs is expected to be held steady.

On the other side of the spending coin, the award for fastest-growing R&D budget goes to the Advanced Technology Program (ATP) within NIST. The program, which funds high-tech research consortia led by industry, tripled in size in 1994, to $200 million, and, barring last-minute changes, the president will request an even larger jump in 1995, to $450 million.

There is certain to be more 11th-hour pleading from legislators and lobbyists as the budget clock winds down, and there are persistent rumors of a multibillion-dollar reduction that OMB must apply to one or more agencies. At press time, NSF and NIH officials were still negotiating specific programs, but other agencies seem to have tied up their loose ends in preparation for the president's submission to Congress. Here are some details of the DOE and NASA budgets:

Energy Department. Any researcher who expected DOE's basic research to reap a windfall from the death of the $11 billion SSC is likely to be disappointed by the president's budget; indeed, Clinton is expected to ask for a slight reduction in DOE's baseline science and technology programs. Meeting last month with the directors of DOE's national laboratories, Secretary O'Leary indicated the Administration's request for science and technology at the agency will be about 14% lower than in 1994, a cut that would mostly come from the SSC. Its shutdown costs in 1995 are estimated at $180 million, which follows $640 million appropriated in 1994.

The rest of the science and technology programs O'Leary highlighted—a breakout that comprises $2.3 billion of the total $3.3 billion budget for energy research—would remain essentially flat under the request, dropping $20 million (less than 1%) from 1994. At the briefing, which was first reported in *New Technology Week* and confirmed by *Science*, O'Leary said that, because of inflation, level funding will force lab directors and department managers to trim some programs. One exception is Princeton's proposed Tokamak Physics Experiment, the next step in magnetic fusion, which is scheduled to get a $44 million boost to $64 million.

NASA. The 1995 budget is expected to bring especially bad news to space scientists not associated with the Earth Observing System. A disproportionate share of the $250 million cut in NASA's current $14.5 billion budget would come from the $1.8 billion now being spent on space science—astrophysics, astronomy, and planetary missions. The $475 million life sciences and microgravity program is considered relatively safe because it represents the principal scientific justification for the space station. In response to warnings of pending reductions, researchers asked NASA to "fence off" two programs that most directly threatened the space science budget—the space station, scheduled to get $2.1 billion a year for the next several years, and the shuttle, which this year received almost $3 billion—and let them compete with each other for a fixed pot of money. NASA agreed, but the downside is that it will be just as hard for space science to steal money from other programs as it is for others programs to steal from space science.

Such pressures are forcing NASA to make tough choices. For example, preserving the multibillion-dollar Cassini probe to Saturn could delay until 1998 a replacement mission for the failed Mars Observer (see p. 167) or force NASA to substitute a series of smaller, cheaper probes.

Now that the Clinton Administration has picked its winners and losers, it will be Congress's turn to play the zero sum game with the 1995 budget. The final results will be tallied next fall.

–Jeffrey Mervis, Christopher Anderson & Eliot Marshall

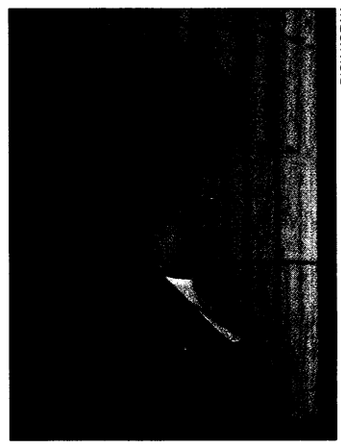
U.S. SCIENCE POLICY

OSTP Plans a Blueprint for Research

One month after the Clinton Administration took office, it issued a detailed document on technology policy, outlining a new role for the federal government in supporting R&D likely to benefit the U.S. economy (*Science*, 26 February 1993, p. 1244). The statement was followed by sharp increases in funding for some areas of applied research. Now M.R.C. Greenwood, the top science official in the White House Office of Science and Technology Policy (OSTP), is laying the groundwork for a similar policy blueprint for basic research. As a first step, Greenwood, the former dean of graduate studies at the University of California, Davis, has invited 125 scientists and policy experts to Washington for a no-holds-barred discussion of the government's role in funding science.

"The time has come to reevaluate, and reaffirm, the importance of science in achieving national goals," Greenwood said in an interview with *Science*. "We're asking them to tell us what we need, and what the policies are that will get us there. What they say, we hope, will become part of the Administration's policy statement on fundamental science."

The meeting, scheduled for 31 January to 1 February at the National Academy of Sciences (NAS), will be called the "Forum for Science in the National Interest: World Leadership in Basic Science, Mathematics, and Engineers." The participants, drawn from the ranks of government, universities, and industry, will tackle a half-dozen questions that OSTP has posed—on such issues as the role of graduate education, the changing nature of research, and the proper distribution of funds by type of investment (investigator-initiated, mission-oriented, education and training, facilities, international collaborations, and so on). They will also hear speakers from a range of backgrounds, including at least two legislators with influence over funding federal science: Sen. Barbara Mikulski (D–MD), chairman of the appropriations subcommittee that funds the National Science Foundation (NSF), the National Aeronautics and Space Administration, and the Environmental Protection Agency, and Sen. Jay Rockefeller (D–WV), chairman of the science subcommittee of the Commerce, Science, and Transportation Committee.



RICK KOZAK

Town meeting. OSTP's Greenwood hopes for new strategy for science.

The forum will be the first public event for the new federal coordinating committee on fundamental science, one of nine interagency bodies OSTP has established to help manage the government's $75 billion annual investment in R&D (*Science*, 16 September 1993, p. 1513). The committee is chaired by NSF director Neal Lane and Harold Varmus, director of the National Institutes of Health, and is composed of top-level research administrators from a dozen agencies.

Greenwood has spent the past month talking up the idea among policy makers in Washington. Organizations such as NAS, the Carnegie Commission on Science, Technology, and Government, and the American Association for the Advancement of Science (which publishes *Science*) have agreed to help foot the bill for the meeting, and several federal agencies have signed on as cosponsors.

The idea has also generated some skepticism, however. Erich Bloch, a former NSF director now with the private-sector Council on Competitiveness, helped during the presidential campaign to prepare a document on technology policy that formed the basis for the Clinton Administration's technology manifesto, issued on 22 February last year. Now he is worried that Greenwood and others haven't thought hard enough about what they want to accomplish at the 2-day meeting. "It's better to start with something and then ask for comments," he says. "But this is democracy