Bush Adopts Reagan's R&D Budget

Reagan's proposals for science and technology remain unchanged. New education initiatives are offered, but how they would be paid for is left unclear. The overall budget prospects are murky

PRESIDENT BUSH stunned top officials at the National Science Foundation last week when he announced his budget proposals to a joint session of Congress. "I propose almost $2.2 billion for the National Science Foundation to promote basic research and keep us on track to double its budget by 1993," Bush said. The dollar figure is not new—it is exactly the same as President Reagan proposed in the budget he left behind last month—and the commitment to double NSF's allotment was first made 2 years ago. What was surprising was the fact that NSF, a small and relatively obscure agency in the federal landscape, got top billing in Bush's speech. The proposal was the first concrete item in the entire address.

Wide World

Read my budget: *"Federal investments in research and development should be increased even beyond the current strong levels."*

In his speech and accompanying budget documents, Bush went on to reiterate his promise to elevate the status of his science adviser, and he endorsed the civilian R&D proposals contained in Reagan's lame-duck budget (*Science,* 13 January, p. 159). In addition, he proposed a package of new initiatives, costing $411 million, to improve the dismal state of American education in general and science and math skills in particular.

Although Bush's R&D budget contained no new spending proposals beyond those advanced by Reagan, the rhetoric suggests that the Bush Administration is prepared to back the substantial increases Reagan proposed in selected areas of science and technology at a time when the federal budget is under severe pressure. Indeed, an analysis of Bush's proposals by the staff of the House Budget Committee indicates that the largest increase in the entire federal budget would go to the category known as general science, space, and technology, which includes most nonmedical civilian R&D. The total spending on these programs would grow by about 10%.

As outlined in Reagan's budget, the bulk of this increase would go to big-ticket items such as a $250-million downpayment for the Superconducting Super Collider; a $2.4-billion boost in the budget for the National Aeronautics and Space Administration, chiefly for the space station; and the $260-million increase (14%) in NSF's budget. In the biomedical area, Bush has endorsed Reagan's call for a $313-million rise (24%) in spending on research and education programs designed to combat AIDS, and a modest increase of about 3.6% in other areas of biomedical research. All these items were specifically identified in Bush's budget documents.

Not identified were cuts proposed by Reagan which presumably have also been endorsed by Bush. They include many energy R&D programs and some activities funded by the Department of Commerce, such as the Sea Grant Program.

How these proposals will play on Capitol Hill can best be described as uncertain. But that could be said about the whole budget package.

A major uncertainty is whether the federal deficit can be reduced next year below the $100-billion level specified in the infamous Gramm-Rudman-Hollings deficit reduction law. If projections made next October indicate that the target will not be met, automatic across-the-board cuts would be triggered. Bush claims his budget would bring the deficit down from an estimated $164 billion in fiscal 1989 to $94.8 billion in fiscal 1990. But Senate Democrats issued an analysis the following day contending that Bush's projections rest on overly optimistic economic assumptions. The real figure, they claimed, would be more like $115 billion.

Another uncertainty arises from the fact that Bush has not specified in detail which programs he would cut in order to fund some of the initiatives he has proposed. Some of the cuts would come in defense, where Bush has proposed a cost-of-living increase rather than the 2% real growth that Reagan's budget contained. (Exactly what Bush would cut from Reagan's defense budget has not been identified, however.) Others would come in programs already targeted by Reagan, such as farm support programs, Medicare, and some federal employee health benefits. But in many civilian areas, such as education, the environment, and drug abuse, Bush has proposed new initiatives without saying how he proposes to pay for them.

A case in point is education. President Bush has proposed several important new programs that together would cost $411 million in fiscal 1990. However, the total proposed for education would not increase, which means that some unidentified programs would be cut to make room for the new initiatives. Representative Leon Panetta (D–CA), chairman of the House Budget Committee, sharply criticized this approach: "Robbing Peter to pay Paul is not a very good start if Mr. Bush truly wants to be the education president," he said.

Among the new education initiatives proposed by Bush, all of which would be funded by the Department of Education, are the following:

■ **Presidential merit schools:** A $250-million program (rising to $500 million in fiscal 1991) to reward individual schools that have demonstrated substantial educational progress.

■ **Rewarding outstanding teachers:** An $8-million-a-year program to provide $5000 to individual teachers judged outstanding in statewide competitions.

■ **A National Science Scholars program:** A program starting with $5 million in fiscal 1990, rising to $20 million in 1993, to provide 4-year scholarships of up to $10,000 a year to outstanding science students. One student would be nominated by each member of the House of Representatives and each Senator, and 30 would be nominated by the President. Legislation along these lines was introduced recently by Senator John Glenn (D–OH) and Representative Doug Walgren (D–PA).

■ **Magnet schools:** A $100-million-a-year program to help states establish magnet school systems in which individual schools specialize in particular subjects. The establishment of magnet schools specializing in mathematics and science will be encouraged.

In essence, Bush is following the "flexible freeze" strategy outlined in his campaign, under which some programs would be frozen in order to permit growth in priority areas (*Science,* 9 December 1988, p. 1368). Congress, however, is likely to reject the idea of specifying in detail only the increases and not the cuts. "Mr. Bush presented us with a new fangled kind of budget that told only the good news. He left it to Congress to give the American people the bad news," Panetta grumbled.

Panetta and Senator James Sasser (D–TN), chairman of the Senate Budget Committee, announced that they planned to meet this week with Richard Darman, Bush's budget chief, to attempt to force the Administration to be specific on the cuts.

For the time being, however, officials in many of the science agencies are pleased that their programs have been identified as being in the favored category of priority programs. At NSF on the day after Bush's speech, director Erich Bloch expressed satisfaction that Bush had singled the foundation out. "We're absolutely delighted," added Mary Good, chairman of the National Science Board. ■ COLIN NORMAN

New U.K. Science Initiatives Backed

London

An impressive list of new scientific initiatives has been approved for funding by the British government as a result of its decision, announced in principle 3 months ago, to boost the U.K. science budget by 16% next year, the first major increase for almost a decade.

Included in these initiatives will be a new center for interdisciplinary research into transgenic animal biology at the University of Edinburgh, increased funding for AIDS research and the European Laboratory for Particle Physics (CERN) in Geneva, and the setting up of an "information and resource center"—combined with a program of "directed research"—for the mapping and sequencing of the human genome.

In line with advice received from the Advisory Board for the Research Councils, the body that advises the government on the division of research funds between five separate councils, most of the new money will be used to boost areas of science considered important from a long-term social, economic, and industrial point of view.

For example, over a quarter of the new funding will be used to create nine new university-based Interdisciplinary Research Centers, each conceived to focus on fields considered to be strategically important. The new centers will include one in London on cell biology and another in Cambridge on macromolecular interactions.

The 16% increase will raise the United Kingdom's total research budget for 1989–1990 to $1.4 billion, and comparable increases are planned for the two following years. In addition to the interdisciplinary research centers, the new money will be used to launch national research programs in three fields considered of high priority: agriculture and the environment, the interaction between humans and computers, and geographic information systems.

In announcing the government's support for these various initiatives, Kenneth Baker, the Secretary of State for Education and Science, said one result would be that each of the five research councils would see their budgets increase by at least 10% next year.

In the case of the Natural Environment Research Council the increase will be 28%, reflecting a new-found enthusiasm for environmental topics expressed last autumn by Prime Minister Margaret Thatcher in a speech to the Royal Society. This money will, among other things, be used to boost research into ozone depletion in the atmosphere, and to breathe new life into the British Geological Survey, until recently threatened with extinction.

The advisory board's chairman, Sir David Phillips, whose complaints to the government in previous years about the shortage of funds for research had been ignored, said last week that the philosophy behind the way the new money is being spent was to "foster [a] purposeful reshaping of the science base." ■ DAVID DICKSON

R&D Suffers After Corporate Raids

Mergers, acquisitions, leveraged buy-outs, and other types of corporate restructurings that frequently burden companies with huge debts "appear to be a major factor" behind flat or declining industrial investment in research and development. The National Science Foundation (NSF), in a survey of 200 "leading" companies performing R&D, found that in 1986 and 1987 firms affected by some form of restructuring cut R&D outlays.

While overall R&D spending by industrial firms reached $54.6 billion in 1987, NSF concluded that after adjusting for inflation funding is the same as in 1985. The companies covered in the analysis account for 90% of total corporate research expenditures.

Of the 200 firms examined in the study performed for the House Subcommittee on Telecommunications and Finance, 16 were involved in mergers. Another 8 were affected by leveraged buy-outs or other restructurings. The two groups spent $9.2 billion and $600 million, respectively, on research in 1987. While the amount is impressive, it represents a 5.3% decrease in outlays compared to 1986. NSF notes that the remaining companies in the survey increased spending in the same period by 5.4%.

Leveraged buy-outs, according to the NSF report, may have the biggest impact on corporate R&D. NSF says that the eight firms involved in buy-outs, buy-backs, and major restructurings saw their R&D outlays in 1987 fall an average 12.8%. The degree to which R&D expenditures are affected by financial restructuring, however, seems to vary somewhat with the industry. Melissa Pollack, who performed the analysis, observes that the chemical, pharmaceutical, and medical supply companies, as a group, still managed to boost R&D spending, but at a level that was less than half that of the industrial group as a whole.

When companies touched by mergers or restructurings were forced to cut back R&D spending, most also had to lay off research staff. In some instances, reductions in staff resulted from the elimination of duplication in merged companies.

Meanwhile, Representative Edward Markey (D–MA), chairman of the telecommunications and finance subcommittee, is expected to hold hearings later this month on how corporate restructuring affects R&D. Hearings examining the broader impact on the American economy were held by the House Ways and Means Committee in January. ■ MARK CRAWFORD