Pressure to Cut the Deficit Creates Uncertainty for Biomedical Research

At midpoint in the budget cycle for FY 1987, NIH needs congressional support to preclude a real loss of funds

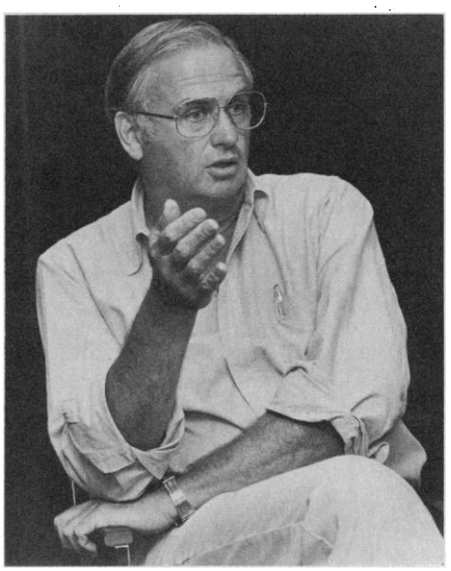
"WITHOUT any question, over the past 12 years the process of budget planning and grant allocation has become more confusing each year than the year before. We can't plan with any reasonable certainty at all," an NIH official recently told *Science*, adding that "This year may be the worst of all."

Although the National Institutes of Health is not alone among federal agencies that must deal with substantial uncertainty as the budget wends its long way from an initial agency request to a final congressional appropriation months later, NIH and the biomedical research community that depends on it for funding have been very much at sea during the present budget cycle, which has included cuts mandated by the Gramm-Rudman-Hollings deficit reduction act, a threatened $77-million rescission in current funds, and a presidential budget request for fiscal year 1987 that would mean a 2.6% cut in real money.

Congress has already indicated that it will not accept President Reagan's figure for FY 1987. For instance, Senator Lowell P. Weicker, Jr. (R–CT), recently stated that "nothing is more important to the nation" than biomedical research, and he promised to introduce an amendment to restore full funding for health research not only for NIH but for the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) as well.

But while health officials wait hopefully for congressional action, they must proceed to plan along more restricted budgetary lines and anticipate the consequences of possible reductions. Such assessments, which NIH has now completed and reported to Congress, will do nothing to make any researcher's day.

The annual budget ritual is played out in stages. After an agency's budget completes its passage through the hierarchy of government departments, it faces review by congressional committees and subcommittees that hold a host of springtime hearings at which agency heads appear to "defend" the President's budget whether they agree with it or not. For instance, in testimony before the Senate appropriations subcommittee on health, which is headed by Weicker, NIH director James B. Wyngaarden dutifully said, "Mr. Chairman, we understand the need for strong measures to reduce the federal deficit. The budget we present is an example of the kind of restraint the times require." Said Weicker when Wyngaarden had completed his prepared remarks, "I don't see the need to reduce your budget" when others, such as the military, are not sharing the pain (*Science*, 21 March, p. 1364).



"Nothing is more important to the nation" than biomedical research.— Senator Lowell Weicker

Weicker's support of NIH and ADAMHA was further evident when he scheduled an additional subcommittee hearing on 11 April to take testimony from leading researchers on the agencies' behalf. The starkest assessment was offered in this statement by a Nobel-studded lobbying group called the Delegation for Basic Biomedical Research. "The President's 1987 budget request for the NIH and ADAMHA guarantees the demise of the American biomedical research enterprise as we know it."

Two elements are important to the current picture. One is the budget proposal for FY 1987. The other includes real and merely threatened cuts in the budget for FY 1986, which is now more than half over and ends on 30 September.

First, FY 1987. Planning for the FY 1987 budget which is now before the Congress began more than a year ago with a meeting of NIH institute directors who presented their budgetary wish lists to Wyngaarden. After internal debate and negotiations, NIH concluded that in FY 1987 it could wisely spend $6.415 billion. The request passed from Wyngaarden's desk one notch up the hierarchial ladder to the Public Health Service. There, officials trimmed the request a bit; the figure they passed up the ladder to the secretary of Health and Human Services was $6.093 billion. Next, Margaret Heckler, who then was HHS secretary, cut the proposal still further. When the NIH budget request moved from her desk to the White House Office of Management and Budget (OMB) the bottom line was $5.907 billion. But OMB budget analysts balked even at that. Concern about the mounting federal deficit was by then very much on people's minds; their figure for NIH dropped to $4.936 billion. And so it was that, from the time the initial version of the NIH budget left Wyngaarden's desk to the day last February that President Reagan submitted his

FY 1987 budget to Congress, the NIH's prospects fell by nearly $1.5 billion.

While the FY 1987 budget was facing "paper" losses, funds for FY 1986 were being targeted for real, immediate cuts. In January, dollar amounts for the mandated Gramm-Rudman cuts became available (*Science*, 31 January, p. 444). Implementation of those cuts took effect on 1 March, and for NIH amounted to $236.2 million, made across-the-board. However, because of a decision not to apply the reductions retroactively to investigator-initiated grants that had already been awarded, it meant that grants made after 1 March could suffer cuts of as much as 8% below recommended levels. NIH makes grant decisions three times each fiscal year, with one round to go in FY 1986.

As Gramm-Rudman cuts were being sorted out, the prospect of still further FY 1986 losses were faced when President Reagan asked Congress to approve a reduction of $77 million in funds that had already been appropriated. The President sought a cut of $53.7 million in the grant pool, a cut of $13.9 million in AIDS funding, and a $9.1-million reduction in money allocated for research in small colleges and minority institutions. Congress said no to the rescission proposal which, combined with Gramm-Rudman, would have limited the number of new grants to only 5500.

Irrespective of the dollar outcome in FY 1987, the current period of fiscal restraint, which is not likely to be relieved to any great extent for the foreseeable future, has prompted a needed reevaluation of NIH's programs and priorities among NIH officials themselves.

Wyngaarden has spelled out several issues of paramount concern, among them these: (i) The emphasis on investigator-initiated grants to the exclusion of other funding mechanisms, (ii) a significant loss of funds for training, (iii) the potential total elimination of construction money, (iv) the likely termination of the Biological Research Support Grant program.

For a number of years, NIH has been driven to some extent by the research project grants program that funds individual investigators and their labs. According to Wyngaarden, data show that in 1972, research grants consumed 44% of the NIH's total extramural budget; by 1984 it had grown to 66%, with a "concomitant reduction in budget for contracts and training." Throughout this time, the cost of research grew substantially in "constant" or real dollars (that is, taking inflation into account). Indirect or overhead costs also rose steadily. Although NIH was receiving selective budgetary increases, altogether the picture began to look less and less promising. Around 1979, Donald S. Fredrickson, who was then director of NIH, hit on a politically attractive strategy for trying to maintain a large grants program. The need was explained to Congress in terms of numerical goals—the theory being that congressmen like to deal with clear, simple concepts—and an NIH "stabilization" policy was invented that set 5000 as the minimum acceptable number of new and competing grants that would have to be funded in any year.

Leah Roberts

James B. Wyngaarden

NIH director is facing stringent budget constraints

What was meant as a floor quickly became a ceiling but, nonetheless, for several years NIH did reasonably well at increasing the number of new grants, even as the average cost of a grant rose from 1980 to 1985 by a whopping 48.9%. Costs for personnel went up substantially, as did costs for equipment and supplies. The success of the stabilization policy based on numbers of grants was evident last year when Congress initially approved funding of 6500 new awards and, after a protracted battle with OMB (*Science*, 6 September 1985, p. 947), settled on 6100 for FY 1986.

Today, that stabilization policy is seen as a mixed blessing because, in order to maintain a high number of grants, each grant faces a "downward negotiation" of as much as 12 to 15% from recommended levels, while research funded through other mechanisms suffers major dislocations. There appear to be two avenues around this problem. One, which members of the House and Senate are discussing, is a change in the legislative language that now requires NIH to fund 6100 new grants. The other, devised by the Administration, gets around the problem by simply redefining "stabilization." As Humpty Dumpty said to Alice, "When I use a word, it means just what I choose it to mean." Administration officials now choose "stabilization" to mean something new, stabilization means what we say it means, with the definition shifting from the number of new grants per year to the total number of grants (new and existing) that are being paid.

Under this new policy the *total* number of NIH research project grants would be stabilized at 18,000. If, for the sake of argument, one accepts the President's FY 1987 budget request (there is barely a chance Congress will do so), grant numbers for recent years come out looking like this:

	Total grants	New grants
1985	18,249	6246
1986	18,776	6100
1987	18,000	5130

Overall numbers tell only part of the story about the state of grants. There may not only be fewer of them but data show that they have been consistently harder to get. According to Wyngaarden, in 1975 NIH funded about 65% of approved grants; by 1985, the award rate was close to 37%. What NIH calls the "success rate" or likelihood that an investigator will be successful in getting a grant has also shifted. In 1975 it was about 50%; a decade later, the rate has dropped to 32%.

The outcome of the argument about indirect cost rates is also pertinent to the overall grants picture (*Science*, 7 March, p. 1059). The Administration wants to cap the indirect cost allowance at 20% of direct costs in FY 1987. That would amount to a total

"saving" of $85 million. Universities would have to pay from their own operating funds costs previously paid by the government; the $85 million "saving" would be available for research.

In light of the current climate, NIH officials expect that a general need for "downward negotiation" of grant amounts will be one of the big issues of the coming year. As it has in the past, training will be another. That the success of the biomedical enterprise depends on a steady influx of talented young researchers is a verity that few would deny. But scientists are worried that the numbers are too low. In FY 1985, $217 million supported 10,624 trainees and fellows. The proposal for FY 1987 of $198 million would support only 9250—1374 fewer persons.

However, although the numbers seem headed down, two new programs are now in place to provide more attractive and longer-term support for especially talented new and also mid-career scientists who may receive 5-year FIRST or 7-year MERIT awards (see box).

The physical infrastructure that supports research is still another aspect of the complex issue of weighing one need against another when there are insufficient funds. At present, only three of the NIH institutes have legal authority to spend money for the construction or renovation of facilities, but very little money is available even there and in FY 1987 none has been requested. Yet NIH officials put the need in the billions of dollars, and point out that it is needed not only for research labs but also for animal facilities that must be improved and better maintained under new animal welfare laws and regulations. Upgrading animal facilities nationwide could easily cost $1.3 billion, NIH estimates. Some efforts have been made to secure congressional appropriations for construction but none has made it thus far. For instance, last June Representative Don Fuqua (D–FL) introduced a $470-million university facilities bill, but it won little support among researchers because of a provision that, in future years, would require a set-aside of 10% for the continued renovation and improvement of facilities.

The other item that did not survive the NIH priority-setting process this time is the $63-million Biomedical Research Support Grant (BRSG) program. Although the sum seems small compared with monies for individual grants, these funds, which provide generalized institutional support, matter to a lot of people. It is these funds that can be used to sustain a researcher temporarily between grants, for instance, or provide support for small but important pilot programs. However, Wyngaarden says, "the BRSG must rank as a lower priority when compared with other NIH programs."

For many years, biomedical research has occupied a strange niche in the federal budget process. Each year the Administration (Republican or Democratic) asks for what NIH considers insufficient funds. Each year, Congress raises the ante—often by quite a lot. Will that happen again? Obviously no one knows, but there is reason to speculate that Congress will come to the rescue. In the Senate, where a total budget resolution is already on the agenda, the line for NIH is $5.3 billion (compared with the President's $4.9 billion). The anticipated Weicker amendment would restore $1.1 billion to health research altogether, with $600 million for NIH. Senator Mark Andrews (R–ND) will co-sponsor the amendment. The House has yet to achieve a budget resolution, but there is an expectation that NIH supporters on the House health subcommittees will try to increase funding—at least for selected programs. But there is no reason now to expect that NIH will end up with the 12% and better increases that are earmarked for other science agencies. ■

BARBARA J. CULLITON

NIH Starts New Grants Program

One of the great frustrations biomedical researchers share is the complexity and uncertainty of the National Institutes of Health grant program. Grant applications themselves have become weighty tomes. The scheduling of grants, which generally run for 3 years, is such that people complain they seem always in the process of writing one application or another. Younger scientists worry, often with reason, that because 3 years may not be time enough to produce meaningful results from initial experiments, they will be shut out of research after just one round.

Cognizant of these concerns, NIH officials have launched two new grant programs designed to counter these problems for at least a select group of young and mid-career researchers. "MERIT" awards have been established to provide long-term support to scientists "whose research competence and productivity are distinctly superior and who are highly likely to continue to perform in an outstanding manner." These awards, which will be bestowed on investigators at NIH's initiative (one cannot apply for them), will be good for up to 10 years—a 5-year grant, followed by a 3- to 5-year renewal. As NIH councils review current approved grant applications, they will be on the lookout for those lucky few who will be spared the "administrative burdens" associated with grant-seeking. Simple eight-page statements of progress and an abstract of future plans will be sufficient to request extension of a MERIT grant. This program won final approval in January, and will be implemented during the NIH council's June grant review meetings. As many as 500 researchers may be given MERIT awards this summer.

Younger scientists of exceptional promise may qualify for a new first independent research support and transition (FIRST) award. FIRST grants, generally expected to run for 5 years, will provide up to $350,000 in direct costs. Unlike MERIT awards, individuals may apply for FIRST grants, which must be used for new projects—not as a supplement to ongoing work. The FIRST program has just begun, with 1 June the closing date for the initial round of applications. NIH anticipates giving out some 400 FIRST grants during the first year of the program.

These awards mark acknowledgment by NIH officials of the potential value of giving investigators the security and freedom of longer term support. The new MERIT and FIRST awards apply NIH-wide, but enthusiasm for longer grants is already evident in some of the individual institutes (*Science*, 21 December 1984, p. 1400). For instance, the National Cancer Institute recently announced that "outstanding investigator" grants of 7 years each have been made to 23 researchers. Including anticipated indirect costs, the 23 grants represent a commitment of some $100 million. NCI director Vincent T. DeVita, Jr., expects that "The amount of time and energy spared these investigators in the application process will encourage innovative research of unusual potential."

Approximately 100 scientists applied for the outstanding investigator grants. Of the chosen 23, three proved remarkably successful: Carlo Croce of the Wistar Institute will get about $7.6 million, Michael H. Wigler of Cold Spring Harbor will receive nearly $5 million, as will David Goldenberg of the Center for Molecular Medicine and Immunology in Newark, New Jersey. ■ **B.J.C.**