

Biomedical Funding: The Eternal "Crisis"

NIH's plan to stabilize grants funding has attracted a host of critics, particularly of the goal of funding 6000 new grants

DECLARING THAT THE "VERY FUTURE OF THE biomedical research enterprise" hangs in the balance, William Raub, acting director of the National Institutes of Health, opened a public debate on 17 December on a new NIH plan for controlling the costs of research. The plan, which sets a target of funding 6000 new and competing grants a year, was drafted in response to a congressional mandate to find a way to prevent wild fluctuations in the numbers of new grants available in any given year.

Speaking to an auditorium full of scientists waiting to comment on NIH's draft plan, which has been circulating among policy makers and health lobbyists for the past 3 weeks (*Science*, 30 November, p. 1198), Raub said that Congress's directive, written into the House Appropriations Committee's report on NIH's 1991 budget, did not constitute "marching orders" but merely set guidelines. "We can come up with alternatives," he said. "That's what we're here for today."

Although the draft plan speaks to several aspects of NIH funding policy, one of the most crucial is whether the institutes should be required to award a specific number of new grants—a quota, if you will—each year, or, alternatively, whether the number of grants should be determined by the amount of money available.

For the past decade, there has been tremendous emphasis on the number of grants. Now, the pendulum appears to be swinging slightly in the other direction. Robert Rosenzweig, president of the Association of American Universities, put it most directly when he said, "It is the wrong goal."

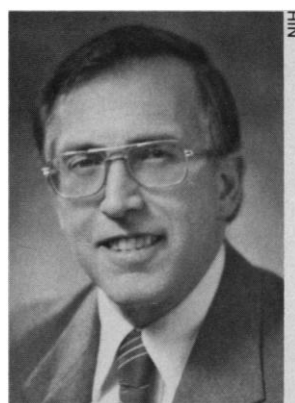
The idea that there is some magic number of new awards that should be made each year arose in the late 1970s when NIH convinced Congress that it should support no fewer than 5000 new and competing grants a year in order to bring stability and predictability to the biomedical research system. The plan at the time was that members of Congress would become committed to the figure, thereby ensuring that the budget would be at least large enough to pay for

that number—preferably more. This scheme was dubbed the "stabilization policy."

The ploy worked at first. In 1980, NIH could fund only 4785 new grants. By 1985, it was up to what scientists considered a healthy 6247 and remained above 6000 for 4 years. Then, because appropriations did not keep pace with this expanding stable of



Wrong target. Focus on dollars, not grant numbers, says Robert Rosenzweig.



Subject to change. NIH's plan is not the final word, says William Raub.

grants, the number plummeted to 5382 in 1989 and last year (fiscal 1990) it was down to 4577. In other words, below the number that fueled the so-called stabilization policy at the beginning of the decade.

Not only did funding fail to keep up, but the number of researchers applying for new grants exploded during the decade, creating a situation in which expectations far exceeded reality. According to NIH's data, 4307 new applicants entered the system over the decade, and many of them were disappointed.

Testifying this week on behalf of the 13,000-member American Federation of Clinical Research (AFCR), whose members are all under the age of 40, Marc Hochberg of Johns Hopkins University said the most recent, dramatic drop in grant numbers "is the primary cause of the current funding crisis mentality within the research community."

Congress and NIH have responded in part by going back to the old formula. They are talking about adding at least 1200 new grants next year. This, Rosenzweig argued, "would reintroduce into the system the same

dynamic of fat years followed by lean years that produced the drop to 4600 grants by building a commitment base that could not be met by likely future appropriations."

Robert Petersdorf, president of the Association of American Medical Colleges, testified at this week's meeting in the same vein. "Available funds," should determine how many new grants are funded, he said, not the other way around. Taking the position that an emphasis on numbers of grants causes harmful cuts elsewhere in the system—in the support of research centers or large projects, for instance—Petersdorf said a "set number of grants should not be the greatest priority." Terry Lierman of Capitol Associates, whose clients include several voluntary health organizations, agrees. "Our biggest concern is a commitment to funding 5800 grants when there isn't enough money."

This view was far from universal, however. Coming in strong on the other side was the Federation of American Societies for Experimental Biology (FASEB), which represents seven research societies with a combined membership of some 30,000 scientists. FASEB vice president Robert Cousins declared that "the single most important part of the congressional [and NIH] plan is the funding of at least 6000 new and competing research grants for each of the next 4 years." Donald Brown, representing the societies of cell biology, developmental biology, and biochemistry and molecular biology, also took the view that the "primary goal" should be funding for 6000 new grants each year.

The real issue is this: If there are not sufficient funds in future years to continue funding those 6000 grants, award another batch of new ones, and meet other research needs, what do you do? Answers include the following: fund 6000 grants at less than full value, take the money that might be used for centers or large projects and use it for individual grants instead, or fund fewer grants.

To deal with these difficult choices, Congress told NIH to come up with a plan. In exchange for adding \$1 billion to NIH's budget to cope with a crisis the House Appropriations Committee calls "overstated," Congress this year challenged NIH officials to find a way to avoid future funding crises. "The current system [for making decisions about how money will be distributed] does not serve adequately either scientists or taxpayers," asserts the committee's report. Written at the direction of Representative William Natcher (D-KY), chairman of the House subcommittee that oversees the NIH budget, the report told NIH

in blunt language to put "balance" in the system (*Science*, 28 September, p. 1496).

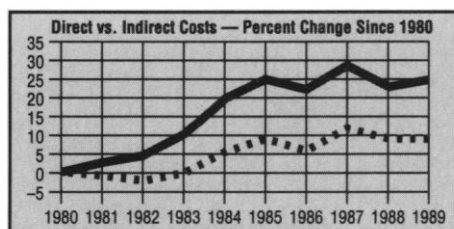
NIH has been told this before—and not just recently. In 1965, an NIH review committee appointed by President Lyndon Johnson said, "The profound influence of the greatly expanded NIH programs on the directions of biomedical research and the growing requirement for hard choices among competing research areas emphasize the increasing importance of 'balance' in the distribution of...[funds]. The evidence suggests that the existing decision-making mechanisms are not adequate." Although attempts were made to deal with the situation, the reality is that even in the so-called golden years, when it looked as though there were few limits to NIH's growth, there have always been more good ideas than funds. This is at the root of today's crisis as well.

What does NIH plan to do? The chief elements in the plan include the following:

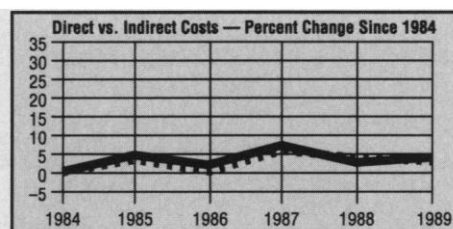
- Establish 4 years as the average grant length, pulling back from the "year creep" that now puts the average at 4.3 years and inching up.

- Limit the outyear costs of ongoing grants to increases in the Biomedical Research and Development Price Index—an indicator that is about 2% higher than the consumer price index.

- Increase stipends paid from training grants, even if it means limiting the overall increase in the number of training grants.



Base change. Most of the growth in indirect costs occurred before 1984; since then direct and indirect costs have risen on the same track.



■ ■ ■ Direct costs
— Indirect costs

- Take into account whether or not a researcher is already getting non-NIH funding for work related to the grant application.

- Fund centers on the basis of money available under the "centers" category, rather than set a ceiling on the number of centers. (In this case, NIH would be doing the exact opposite of its grant funding policy; that is, it would base funding on money available rather than some set number. Nearly everyone who testified at this week's hearing supported this decision.)

- Make decisions about which grants to fund not only on the basis of scientific merit but also on the basis of overall cost—including indirect or overhead costs, which the NIH plan says have increased by 2.5% per year in contrast to a 1% annual increase in direct costs.

The question of indirect costs is a particularly contentious one. Individual researchers often argue that institutions are taking too much money out of grants for overhead,

while university administrators maintain that overhead costs are as real as the costs of buying scientific equipment or paying lab salaries. The idea that indirect costs are rising disproportionately to direct costs has simply added fuel to that debate.

AAU's Rosenzweig, whose group represents some 60 of the country's big research schools, used the occasion to challenge NIH on the indirect cost data. Presenting his own view of the data, Rosenzweig contested the statement that indirect costs have risen way out of proportion to the direct costs of research. It is, he argues, a matter of which year you pick as the base year.

NIH picked 1980, "But there is no special reason to pick 1980 as the base year unless calendar symmetry is the goal," Rosenzweig says. His choice is 1984. With that as the base year, the line showing increases in direct and indirect costs is nearly flat (see graph), leading Rosenzweig to conclude that the big jump can be accounted for by just the early years of the 1980s when a change by the White House Office of Management and Budget redefined certain indirect cost policies. But since then, costs have leveled out and the 1980-1984 bulge is no longer there. "In short, there is no indirect cost dragon whose slaying will make the community safe once again," he declared.

As the debate over the NIH plan continues, the next question is, When will it end? Raub and others at NIH are anxious to put cost-containment plans into effect quickly, saying that is what Congress has ordered. Others suggest that this is the worst time to make changes that will have long-term implications. Why? Rosenzweig says NIH should wait for the appointment of a permanent director. Petersdorf agrees, adding that the 3 weeks between circulation of NIH's draft and this week's hearing is "woefully inadequate" for a thoughtful reply.

Then there is the official advisory committee to the absent director. Also meeting this week to review the plan, the advisory committee was able to do little more than listen to the litany of comments and options. As *Science* goes to press, NIH officials say they intend to have a final plan ready by spring.

■ BARBARA J. CULLITON

Plus ça Change ...

"We have limited funds available for research purposes. If you have investigators who need these funds, let us hear by return mail."

The year was 1946. The Second World War was over and America's physician-scientists turned soldier were home, back in their labs. During the war years, the U.S. government—partly through the young National Institutes of Health, had poured thousands of dollars into contracts for medical research for the battlefield. Now, NIH officials thought, much of that money could be diverted to peacetime science, and the idea of a real national program of federally supported research was born.

Ernest Allen and Cassius J. Van Slyke, two officials in the fledgling institute, took the lead, writing to the nation's medical school deans to offer money to worthy investigators. In an interview years later with author Stephen P. Strickland, Allen called their missive "the most naive letter ever to emanate from the national government in Washington.*"

Allen and Van Slyke had a pot of about \$4 million to spend on what were then being called "grant contracts." Within months, more than a thousand hopeful researchers had submitted applications for funds. There was not enough money to go around. NIH, it seems, has been in a state of financial "crisis" ever since.

■ B.J.C.

*The Story of the NIH Grants Program by Stephen P. Strickland was published by University Press of America to mark the 100th anniversary of NIH in 1987.



"Naive" author. Ernest Allen.

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