history and philosophy of science to teach special courses for nonscience majors are generally unwilling to sacrifice time and energy which they would otherwise devote to research and to the teaching of science majors and graduate students. The problem can be met by using a team of professors, but strong interdepartmental cooperation is necessary, and a qualified individual must still be found to take the responsibility for designing and organizing the course and for testing and grading.

A common argument against general education courses has been that a good science teacher can make a specialist course a worth-while experience for the nonscientist. But a specialist course, however well taught, still does not meet the needs of the nonscience major. The argument that there are badly designed and badly taught general-education science courses is no more valid.

Problems of course design, teacher preparation, and interdepartmental cooperation can surely be met if the scientist will fully accept his responsibility for the adequate education of the layman in science. When the scientist realizes that his freedom as a scientist and as a citizen is jeopardized when the community is ignorant of his real nature, then he may meet this educational responsibility which his power and his importance have given him.

References

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NEWS AND COMMENT

NIH Grants: Policies Revised, but Critics Not Likely To Turn Away

Under pressure from Congress, the Public Health Service has ordered some new procedures to govern the expenditures of its grants. The procedures, contained in a Grants Manual distributed to the business offices of all recipient institutions, take effect 1 January, and though they do not radically alter the ground rules for PHS grants, they do remove some of the freedom that has heretofore existed in the use of PHS funds.

The most far-reaching of these changes puts some teeth in an existing PHS regulation that provides that salaries drawn from grant funds should not be out of line with salaries paid with institutional funds. This has always been the rule, but with congressmen charging that some institutions are winking at it, the PHS has now decreed that the institutions must provide a quarterly accounting of the "time or effort" that investigators put into PHS-supported research. The rule provides that institutions may not set up a special pay scale for personnel who receive salaries from grants. And part-time researchers on PHS grants may not draw salaries from the grants in excess of what they would have received from their own institutions for the same time or effort.

The bookkeepers for these computations are to be the investigators themselves, and their findings are to be kept on file in the institution's administrative offices, for examination by PHS auditors. The National Institutes of Health, which is the principal channel for PHS grants, has offered Congress assurances that its auditors will make frequent rounds.

The new manual also directs that grant funds may not be used to buy equipment costing more than $1000 without PHS approval; nor may international travel be paid for with grant funds unless the PHS has specifically approved the trip. Domestic travel in connection with a research project may be covered by a lump sum.

In addition, investigators who do not have institutional affiliations (relatively few of these are receiving PHS support) must be bonded before they may receive PHS funds. The size of the bond is something that will be worked out between the two parties.

The regulations have been put together in response to increasing congressional dissatisfaction with NIH's administration of its extramural research program, but it does not appear likely that Congress is ready to say quits, for the dissatisfaction with NIH runs deep and has even spread to members on whom NIH could once rely for down-the-line support. The outcome of this sentiment is not the least bit likely to reverse the continuing growth of federal funds for medical research (NIH went from under $10 million a year at the end of World War II to an appropriation of $880 million in the last session of Congress), but it appears that the honeymoon between Congress and medical research is now over, and NIH will no longer receive the favored-child treatment.

Part of this change arises from nothing more than conservative concern over NIH's growing share of the federal budget, a concern that automatically locks onto any attempt to give an agency any large increase over its previous appropriation. Some of it arises from expressions of concern within the scientific community itself over whether NIH's rapid growth has sacrificed quality to achieve quantity. And some of it reflects nothing more than the know-nothing ramblings of scientific illiterates, who conclude that if the title of a research project is not readily comprehensible to them, some effort to swindle the government must be involved.

Congress Puzzled

But a great deal of the sentiment that now confronts NIH in Congress arises from the fact that many members are genuinely puzzled over the federal government's heavy involvement with medical research. They recognize that no alternative sources of funds are available for the massive research effort now under way in this country, and since they are as much against cancer and heart disease as anyone else, they want to make certain that wherever money can be usefully spent it will not be lacking. However,

the annual charade, in which the administration requests a given sum, and then the House and Senate appropriation subcommittees which pass on these funds up the amount by a hundred million dollars or so, has raised serious doubt about who is putting out reliable information on what the nation should spend on medical research. Many members who share these doubts will readily acknowledge that there can be no precise answer to the question of when a given amount is too much, but having gone along for some time with the annual practice of giving all that is asked for and then some, they are beginning to wonder whether they are not indulging in attractive, but needless, generosity. (Since 1955, appropriations for NIH have been more than $600 million in excess of administration requests.) And their concern is further intensified by NIH's insistence that conventional accounting practices are not usefully applicable to research activities. This was a point that James A. Shannon, NIH's director, tried to get across last March when he testified before a House Government Operations Subcommittee, but though Shannon's case may make a lot of sense to NIH's administrators and grantees, it might just as well be recognized that it is utterly incomprehensible to a legislative body whose principal source of power is the control of money.

Research Is Different

Stating that NIH believes its funds can be spent most fruitfully by carefully selecting grantees and then leaving them alone to pursue their research, he pointed out that "Research is an activity fundamentally different from government procurement. The rules properly applicable to government procurement activities to reduce costs and protect the taxpayer are not well fitted to research activities and should not be uncritically applied to them. . . . If one takes the position that strict expenditure controls should be placed on grantees and their institutions through rules set in Washington, this is not a procedural suggestion dealing solely with the administration of funds. This position is a direct attack on the fundamental philosophy and operating method which is at the core of the grant operation and which accounts for its high productivity." And he added that "A grant is a trust which makes the effective expenditure of funds the responsibility of the recipient."

The committee, while not unsympathetic to what it acknowledged were problems peculiar to the administration of medical research, left no doubt that it intended to force "reforms" on Shannon whether he liked it or not. "It appears," the committee said in concluding its report, "that Congress has been overzealous in appropriating money for health research. The conclusion is inescapable, from a study of NIH's loose administrative practices, that the pressure for spending increasingly large appropriations has kept NIH from giving adequate attention to basic management problems. The committee expects NIH to give high priority at this time to the task of correcting its management deficiencies and strengthening its capacity for the effective and efficient operation of these vital health programs."

Doubts Remain

The command for "high priority" has resulted in the fairly swift publication of the grants manual along with what one NIH official has called "a whole change in tone," but, however distressing it may be to NIH and the medical research community, it appears that some important elements in Congress have just begun to whet their appetites for what some call a "crackdown" on NIH.

In commenting on the manual, one person close to the committee indicated he did not feel at all reassured by NIH's approach on the "reforms" to be instituted. "There's a lot of phoniness in this manual," he said, "and we don't feel that NIH is leveling with us." NIH, he said, is engaging in "boondoggling, favoritism, and loose handling of money," and the new procedures set forth in the manual do not, in his view, offer very much assurance that such practices will be eliminated.

"We intend to give NIH an opportunity to give the new procedures adequate time to be tested, but we don't feel very confident that the changes it has made are really enough." The committee, he added, would hold further hearings in the coming session, but no date has been set.

This is the sort of tough talk that has caused NIH officials to become jumpy to the point where they suspect a congressman may be hiding behind any lab bench. An unagitated appraisal of NIH-Congressional relations suggests, however, that medical research and its chief governmental instrument, NIH, still occupy an enviably warm position in the collective heart of Congress. What has happened to NIH is simply that the days when it could write its own ticket in Congress are drawing to a close, and from now on, it is going to have to cope with the skeptical attitudes that virtually all federal agencies encounter in their dealings with Congress.

This change has caused some NIH officials to conclude that bleak days lie ahead, but there is no conceivable possibility that Congress will reverse the pattern of annually enlarging NIH's appropriation; nor is there likely to be any decisive pressure for NIH to impose on its grantees a massive bookkeeping operation that would satisfy Congress's instinct for fiscal tidiness, although it is possible that some tighter procedures may have to be adopted. What is likely to happen is that more and more Congressmen will swing to the view that NIH's yearly growth should conform to the administration's recommendations, rather than to the established practice of generously exceeding the administration request. In the last session, Senator William E. Proxmire, Democrat of Wisconsin, led a hastily assembled campaign to accomplish just that object. He failed, 32–48, but he can be expected to make a more carefully prepared attempt in the next session.

Pressure to bring NIH's appropriation down to the administration's figure is also expected to increase within the appropriations committees. One of the most remarkable facets of NIH's Cinderella existence is that these committees, though of a conservative stripe, have consistently gone along with subcommittee recommendations for generosity. This is largely because of skillful performances by the subcommittee chairmen, Representatives John Fogarty, Democrat of Rhode Island, and Senator Lister Hill, Democrat of Alabama, but, neither in fact, has had as easy a time of it as is often assumed, and there is evidence now that opposition within their committees is hardening.

—D. S. GREENBERG

Geological Survey: Effort Starts To Let Public Know That Is Exists

The U.S. Geological Survey, a small and old research agency that has been relatively inconspicuous amid the goliaths of government science, has undertaken a campaign to acquaint the public—and, hopefully, Congress—with its existence and functions.

The campaign has its origins in the drubbing that the Survey received last