

the scientific concepts involved in the test ban, and the scientists were very much in the background when the test ban was signed.

Again, when Kennedy sought a director for the National Aeronautics and Space Administration, he did not select a scientist or engineer. Rather, with a clear understanding that the space program would probably be beset more by political than by technical problems, he chose James Webb, a political insider with broad experience in government and business.

In general, the political leadership has accepted the argument that the house of science fares best when it is left to its own leadership, and science has managed to achieve the goal of vast federal support with little federal interference. But on governmental matters that do not contain significant scientific or technical components, the scientific community cannot reasonably claim that it exerts very much influence in Washington. And when the political leadership, for whatever reason, decides not to pay attention to its scientific colleagues, there is no constituency to which the scientists can appeal. Last year, when the budget of the National Science Foundation was gutted in Congress, no one outside the scientific community was interested. This is not to suggest even remotely that science is friendless in Washington. It is clearly nothing of the sort when scientists occupy high advisory positions in most major agencies, and when Congress regularly votes generous budgets for research and scientific training. But the influence seems to have fairly rigid boundaries, and this largely restricts the capital's scientists to matters of science and technology.

An incident that occurred a few years ago perhaps best illustrates this situation. The secretary of one of the major governmental departments asked his science adviser to set up a series of meetings at which well-known scientists would provide scientific briefings for the top officers of the department. One of the participants was a Nobel laureate who proceeded to deliver a talk on national political affairs, a subject, he explained, which currently engaged his attention as much as science. The secretary listened politely, but afterwards told his science adviser that he had all the political advice he could use, and that when he called in a scientist he wanted to hear about science.

—D. S. GREENBERG

NIH: Moratorium on Career Awards for Researchers Called for Blend of Budgetary and Policy Reasons

Announcement last June by the National Institutes of Health of a moratorium on new research career awards was received with mixed feelings in the far-flung NIH constituency.

Career awards, which provide up to \$25,000 a year for senior researchers, carried with them certain undeniable advantages in status and security, as well as salary for recipients, but the program had introduced some new tensions into the delicate triangular relationship involving the federal agency, the investigator, and his institution.

A research career program was started in 1961, according to an NIH policy statement, "to increase the number of stable, full-time career opportunities for scientists of superior potential and capability in sciences related to health."

Under the research career program two categories of awards were provided: "career awards" designed to support established investigators literally for the duration of their careers, and "development awards" to finance research positions for younger but promising scientists for a maximum of 10 years.

The moratorium put the freeze on the senior category of awards. Present holders of awards continue to receive support, but no new awards are being made. The moratorium did not apply directly to the development awards, but budgetary factors make it appear that fewer of the development awards will be available.

According to NIH officials, the moratorium and cutback are attributable primarily to fiscal realities. The rate of growth of the NIH budget has been curbed by Congress, and program expansion has, consequently, to be limited. Furthermore, the research career program is financed out of fellowship funds, and training money is appropriated less willingly by Congress than "project" money. And in recent years additions to training funds have been directed mainly into the field of mental health, to bolster service activities as well as to increase the supply of research manpower.

The cumulative cost of the research career program gave NIH officials pause. By this year some 236 researchers held career grants, at a cost of \$5.5 million annually, and 805 others held development grants, at a cost of \$14.5 million. NIH also is committed to pro-

viding salary increases on a normal schedule to those receiving less than the \$25,000-a-year maximum, so there is a built-in cost-rise factor in the program. As with all long-term extramural programs, the awards are based on a kind of moral commitment by NIH, since no federal agency can guarantee money beyond that provided in its annual appropriation by Congress.

In addition to the financial squeeze, misgivings were being voiced inside and outside NIH about the effect on university organization and research of this rapidly growing program. And it was a combination of these factors which prompted a major reappraisal of the program, of which the moratorium is only an interim result.

The idea for the career awards program evolved in the late 1950's and early 1960's (*Science*, 3 Nov. 1961, page 1399) in the wake of studies to determine how further medical research should be conducted. One of the salient findings in these studies was that more stable, fulltime research positions were needed in university science departments and medical schools. In seeking to help meet this need, NIH was responding to a problem in the health sciences it had been instrumental in creating.

The Outsiders

In its flourishing growth in the past decade, NIH not only gave financial support to increasing numbers of researchers but also through its direct and indirect support of graduate students, produced many more full-fledged investigators. The result was that a growing proportion of researchers in universities and other institutions were supported by research grants rather than in the traditional way with institution funds. In universities, these researchers generally were excluded from the tenure structure and occupied anomalous positions as far as status and staff privileges were concerned. There also has been nagging concern about what happens if the federal checks ever stop coming, but, in the era of Big Science, at reputable institutions this problem has remained largely hypothetical.

NIH and other agencies fairly early in the game devised the postdoctoral fellowship to help tide the young researcher over the awkward period between the time when he acquires his doctorate and the day when he finds an institutional niche or has gained the experience and reputation which make

him eligible to vie for grants on his own. This awkward age, incidentally, is one in which many scientists do their best work, and the agencies feel that it is to everyone's advantage that a promising researcher find a bridge to a productive career.

The NIH development awards might be termed post-postdoctoral awards. To be eligible, a nominee must have 3 years or more of postdoctoral research or relevant professional experience behind him. The awards are made on the basis of a national competition and go either to those who require additional training or experience in preparation for research careers or to those who have demonstrated a capacity for independent research but do not yet qualify as candidates for career research awards. (In fiscal '64, 188 development awards and 60 career awards were made. This year money is available for only about 100 development awards.)

The career awards were also based on national competition. These awards grew out of an earlier idea calling for the establishment of 200 research professorships in health sciences (*Science*, 3 Nov. 1961). One strong reason for NIH abandonment of the idea after the original program was in the works was that many applicants were distinguished men well advanced in their careers and securely placed in their institutions, and it was decided that the cause of increasing the stability of careers in health sciences research would not have been well served.

In the research career awards preference is given to researchers of high competence who do not have what NIH calls stable, full-time research opportunities.

A source of misgivings about the career award program is just the fact that it creates what appears to be a system of national professorships which tends to set the recipient apart from, and, some would say, above, his university. (Awards are made in 5-year increments, and the recipient's activities are reviewed periodically to assure that he is fulfilling the purposes of the award. The recipient may not receive additional income for professional services from any source, but is entitled to keep honoraria, royalties, and fees so long as these are "incidental" to his research. Holders of awards may apply to "any appropriate source for support of their research activities.")

The terms of the award are explicit enough in making each recipient directly responsible to his institution (uni-

versities and other nonprofit research organizations must nominate candidates). And the recipient is subject to local regulations on such things as salary, rank, sabbatical leave, and staff privileges. The program achieved relatively great popularity in the few years after it was established, and the awards carry substantial prestige, in part, it seems, because they are believed to give the researcher increased independence of action.

Some fairly widely held assumptions about the awards have no foundation in fact. If an investigator leaves his university for another he is required to relinquish his award; it seems fairly generally assumed, however, that the regaining of his career award at his new post is largely a formality. Not so, says NIH. There has also been a belief current in the existence of an unwritten escalator clause which permits the holder of a development award to move up to a career award. This is not the design nor the practice in the program, say NIH officials. Some universities feel that their nomination of a qualified researcher for one of the awards should be tantamount to selection, but this is not the way the program has ever worked, says NIH.

Inside the universities there have been some hard feelings because award recipients do not pull their share of the teaching load. An award holder's "primary responsibility" is for the conduct and direction of research and research training. While NIH has no hard and fast rule, the award holder in many places expects to spend 80 percent of his time on research. Administrative duties, incidentally, are also ruled out by the terms of the awards.

Focus on Career Awards

Changes, when they are made in the program, are expected to affect the career awards much more decisively than the development awards, which replaced similar awards available earlier. It is likely, however, that NIH will continue, in one way or another, to support some medical researchers from the graduate school to the grave, so to speak. Also likely, however, is that forms of aid will be reevaluated and revised.

The career awards, for example, are regarded as being not so urgently needed as they were when they were established. NIH's general research support program (commonly called "institutional grants"), set up after the career awards were launched, provides,

as the name implies, general support, as distinguished from project support, for health research institutions and serves many of the same purposes as the career awards. The general support program among other things helps to finance an increased number of career positions, establish new departments, and support new investigators. Funds are substantial—about \$40 million a year is available—and many of the jurisdictional and policy problems engendered by the career awards are avoided.

The Public Health Service-NIH, far and away the dominant patron of health sciences research in the United States now and in the foreseeable future, has been moving to broaden its support beyond project research to provide a kind of compensatory support to be applied selectively to the whole structure of medical research. And the moratorium and review can be viewed from this perspective as a sign of one PHS-NIH effort to devise a treatment with maximum benefit and the least harmful side effects to the research community.—JOHN WALSH

Drug Safety: Industry-Sponsored Study Commission Recommends Expansion of Research Activities

With the recent publication of its final report*, the Commission on Drug Safety completed its mission and went out of existence, leaving behind a string of recommendations calling for more research on the problems whose study it had just begun.

Formally, the task of the 14-member body headed by Lowell T. Coggeshall, vice president of the University of Chicago, was "to broaden scientific knowledge of the predictability of action to drugs in human beings." But the commission had a less explicit mission, too. It was established with a grant from the Pharmaceutical Manufacturers Association (PMA), in the summer of 1962, shortly after the disclosures about thalidomide, a period in which the industry was beset by a rising tide of congressional and public ill will. To counter the common attitude of suspicion, and to help ward off the stringent regulation which was being suggested by industry's critics in and out of Washington, it was neces-

* *Report of the Commission on Drug Safety*, available from the Federation of American Societies for Experimental Biology, 9650 Wisconsin Avenue, NW, Washington, D.C. 20014, \$5.