# LBJ Directive: He Says Spread the Research Money

President Johnson last week issued a major policy directive on federal support of university-based research, and his science adviser, Donald F. Hornig, followed it up with a prophecy that the directive is going to bring important changes to the academic world.

The presidential statement started with a theme that has become familiar in Congress and many parts of the academic community—that the federal government should pay more attention to the educational side effects of the great sums it spends for research in universities. Moving on to specifics, it directed federal agencies to be more responsive to the have-nots in the increasingly active competition for federal funds. Finally, in harmony with recommendations by the Wooldridge Committee and other groups that have recently examined federal university relations, the President directed federal agencies to give university administrators and researchers more discretion over the use of federal research funds. In a system as massive and sluggish as the multi-agency federal apparatus for supporting university research, it is reasonable to expect that presidential policy will take some time to bestir the operating levels. But when set against the present political background, the implications of the directive take on great significance. And it is clear that Hornig was using carefully considered words when he told the press briefing that the policy directive would slowly, but decisively, reshape many important aspects of the way the federal government supports university research.

The new policy was stated in two documents issued by the White House, one a presidential statement to the Cabinet, entitled "Strengthening the Academic Capability for Science Throughout the Nation"; the other, a memorandum bearing the same title and addressed to the heads of federal departments and agencies. Together, these documents represent the fruition of a debate that has long been going on throughout the complex of people and organizations that manage the science-government relationship. And what they add up to is that Lyndon Johnson and his scientific and educational advisers have decided that basic research has too much impact on the university environment and surrounding geographic regions to permit it to be governed mainly in terms of the desires of its most successful practitioners.

Heretofore, money for university researchers was allocated with fairly strict adherence to the concept that science could be treated as an island in the academic setting. For the first 15 or so years of the postwar period, this concept was scientifically and politically useful, since a Congress that was skittish about supporting education could be told that, in the interest of defense, public health, and other nationally accepted goals, the money was being used to buy nothing but science, and that only the best science was being bought. Eventually, however, it became painfully clear that science could not enjoy unique prosperity without affecting other parts of the academic setting, and, further, that the concentration of scientific capability at a relatively few universities was somehow related to regional economic prosperity. When these themes, especially the latter one, finally soaked into congressional thinking, the components began to come together for stating a public policy to govern a long-accumulated collection of administrative practices. Considering just the amount of money at stake, the matter was sooner or later going to require a high-level declaration of government intent, but it is probable that the Lyndon Johnson reign sped it along, for the President, far more than any of his predecessors, refuses to concede a state of isolation to any segment of American society. In his view, the public process cannot be fragmented, and even the Supreme Court, traditionally and constitutionally aloof from the daily tides of politics, has been brought into the swim, as witness the Chief Justice being

## NSF Adds to Its Graduate Traineeship Program

The National Science Foundation announced last week that it is expanding its Graduate Traineeship Program to include biology and the social sciences. The program was begun 2 years ago to assist graduate engineering, and last year mathematics and the physical sciences were added. Colleges and universities must apply to the Foundation by 22 October for grants to support the traineeships at their institutions in the 1966–1967 academic year; recipient institutions will be announced about 15 January. The institutions may then offer grants to students, primarily in the first year of graduate school, in the designated fields. The program will provide stipends for specified numbers of students, and a fixed sum to the institution for each student receiving a grant. About 4100 stipends will be given, with approximately half supported by the new grant.

To be eligible for participation, institutions must offer a continuing doctoral program in at least one of the sciences, although they may request support for other areas, in which they offer only the masters.' Only U.S. schools may participate.

Additional information and instructions to institutions on the preparation of proposals should be sent to the Graduate Traineeship Program, Division of Graduate Education in Science, NSF, Washington, D.C. 20550.

summoned to head the assassination investigation, and Justice Arthur Goldberg coming off the bench to become Ambassador to the United Nations.

In his statement to the Cabinet, the President declared:

> . . . I am determined that we shall marshall our resources and our wisdom to the fullest to assure the continuing strength and leadership of American science and to apply the information yielded by its inquiry to the problems which confront our society and our purposes in the world.
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> Our policies and attitudes in regard to science cannot satisfactorily be related solely to achievement of goals and ends we set for our research. Our vision in this regard is limited at best. We must, I believe, devote ourselves purposefully to developing and diffusing—throughout the nation—a strong and solid scientific capability, especially in our many centers of advanced education.

And then, in a statement associating himself with the long-standing cries of the have-nots, the President went on to state:

> At present, one-half of the Federal expenditures for research go to 20 major institutions, most of which were strong before the advent of Federal research funds. During the period of increasing Federal support during World War II, the number of institutions carrying out research and providing advanced education has grown impressively. Strong centers have developed in areas which were previously not well served. It is a particular purpose of this policy to accelerate this beneficial trend since the funds are still concentrated in too few institutions in too few areas of the country.

Now, what is this going to mean when it comes time for the federal agencies to write checks? The presidential directive stated that new excellence was not to be achieved by withholding support from long-standing retainers. But in his press briefing, Hornig left open a good number of questions about whether the pie could be expected to grow to keep pace with a policy of more slices. He indicated that it was considered desirable and politically feasible to increase the support of basic research at a rate of 15 percent a year. But in various congressional hearings, leaders of the scientific community have testified that a 15-percent growth rate barely keeps up with the growing costliness of scientific research and the increase in the ranks of qualified grant applicants. Where is the money for the policy of diffusion to come from, especially at a time when the Vietnam conflict and the rapidly growing and politically popular antipoverty program exert formidable pressures on the federal budget? No one in an official position is willing to say that leaner days may perhaps be ahead for the 20 institutions that now receive 50 percent of federal research expenditures, but the cries from some of these campuses are already above the normal base line for griping, and if things get tougher in the charmed circle, no one should be surprised.

The other key aspect of the presidential directive dealt with a system of relations that has become deeply entwined in the three-way dealings of the government, the university, and the researcher. University administrators have long complained that their enterprising scientists no longer consider the campus to be their center of loyalty; rather, it is contended, with ample evidence, that scientific entrepreneurs draw their support from, and give their fealty to, the Washington granting agencies. And, embittered administrators often charge, if a university isn't happy with the way its affluent scientists are serving the objectives sought by the university administration, it is often faced with the threat of scientific stars picking up their grants—and often, too, their

## The New Accelerator: List "Narrows"

The Atomic Energy Commission last week announced a decision that is going to cause the National Academy of Sciences to absorb a greater proportion of the political heat from the fierce nationwide competition over the location of the proposed 200-bev accelerator.

According to the AEC, it has screened the 126 proposals sent in from 46 states and has concluded that 85 of them from 43 states meet "the basic criteria established for the site."* The 85 proposals, it announced, will be sent to the Academy for evaluation by a special committee appointed to assist the AEC in its choice.

Last spring, when the committee was set up, AEC officials said they expected to forward about 15 proposals, and that they expected that the Academy committee would select one, or possibly several, for final consideration by the AEC. As it turned out, the competition for the vast facility went beyond all expectations in numbers of proposals and intensity of politicking. Now, with 85 sites bestowed upon the Academy as live possibilities, the focus of lobbying can be expected to shift.

The states eliminated by the AEC were North and South Dakota and Wyoming; no entries were received from Alaska, Delaware, Hawaii, or Vermont. According to an AEC official, the grounds for elimination were "failure to meet the criteria."

One certain consequence of the AEC's gift to the Academy is that the final selection of a site will be delayed beyond the original year-end deadline. It was hoped that funds for the accelerator could be included in the budget that the President will send to Congress next January, but the AEC doesn't expect it will be able to make a final decision until later in the year. This may cause a delay in the start of construction, but an AEC official said that the lost time could be made up to meet a completion date of around mid-1972.

Just how the Academy committee will handle the unanticipated volume of proposals isn't certain, since its prestigious membership is well occupied with other duties. It could quite possibly screen the 85 sites in 43 states, and then advise the AEC that 80 of them in 40 states meet the criteria.—D.S.G.

* Persons familiar with the geography of the United States will be interested to note that the criteria met by the 85 sites include 3000 topographically suitable and economically available acres, as well as "proximity" to a major airport, a large university, a technologically advanced industrial center, and adequate housing for several thousand families.

federally paid-for equipment—and going elsewhere. The extent of this situation is difficult to ascertain, but the Johnson directive is based on the assumption that remedial measures are in order, although it also throws a bit of support to the researchers' complaint about intrusions of Washington bookkeepers.

As stated in Johnson's directive, "More support will be provided under terms which give the university and the investigator wider scope for inquiry, as contrasted with highly specific, narrowly defined projects." In Hornig's interpretation, this could be expected to lead to an increase in institutional grants, or money to be used at the discretion of the university administration. NSF and NIH now limit these amounts through a formula that holds the totals to no more than several hundred thousand for any one institution. Hornig also stated that, in general, university administrators would be given more discretion and responsibility for overseeing the use of federal research funds. And, in response to a question from a newspaper reporter, he agreed that this would serve the purpose of "helping the universities get control over their prima donnas."

The assent of congressional appropriations committees will be required to implement some aspects of the Johnson policy, particularly on the matter of enlarging institutional grants. At present these are limited by a formula that the committees jealously guard, since the distribution of money without strings reduces their power over the federal agencies in their jurisdiction. (Hornig didn't want to be drawn into any specific predictions, but he said that he would not be surprised to find that eventually institutional grants might total as much as 10 percent of grant funds; it is difficult to assess what percentage they now comprise in the total of federal research funds going to universities, but it is safe to say they are a small fraction of the figure foreseen by Hornig.)

Nevertheless, the general administration of federal funds going to universities is subject to great executive discretion, and now that Lyndon Johnson has spoken, there is every reason to believe that his science adviser was speaking correctly when he said that many things will look different a few years from now.—D. S. GREENBERG

## Technical Services Act: Industry To Benefit from New State Programs Paralleling Farm Extension Service

In 1963 a Kennedy Administration effort to begin an ambitious program to stimulate technological innovation in the economy got nowhere in Congress. In fact, it was knifed by a House Appropriations Subcommittee and left for dead. But it was picked up by its friends and carried back to the Department of Commerce, whence it had come, for a long period of rest and recovery. This year, with the program shrunk to much smaller dimensions, another try was made on Capitol Hill. A modest legislative success, of possibly great potential, now has been won in the passage of the State Technical Services Act, which was signed last week by President Johnson, who called it the "sleeper" of the 89th Congress.

The act authorizes for industry a program somewhat analogous to the long-established agricultural extension service for farmers. The new service is but one element of the ill-treated 1963 program, which inspired controversy because major industry feared that its provision for direct government sponsorship of industrial research could, as some industry representatives put it, "upset the competitive balance." Even though the goal was not to support the development of proprietary products, but rather to spur industrial innovation by having universities look for new ways of doing things (such as home building), well-entrenched firms could visualize weaker competitors seizing on the new processes and invading their markets.

A prime mover of the program was J. Herbert Hollomon, who had left a high-salaried job as general manager of GE's General Engineering Laboratory in 1962 to come to the Department of Commerce to fill the new post of assistant secretary for science and technology. Hollomon, though articulate in describing the sluggishness of technological change in many parts of the economy not stimulated by national defense, space, and public health programs, found himself unable to cope with big industry's opposition.

The National Association of Manufacturers viewed the program coldly, and even the U.S. Chamber of Commerce, which represents more small companies than large ones, was not enthusiastic. No effective work was done to mollify industry or line up support to offset industry criticism; consequently, Hollomon was helpless when the $7.4 million the Administration had requested (as a starter on a program expected ultimately to cost many millions) was cut down to $1 million; this sum was earmarked for a textile research program, which did have influential friends in Congress. Hollomon had left GE for Washington because, as he remarked shortly after taking the new job, "The problems are larger here"; he was now finding that the problems could be large indeed.

He proceeded to demonstrate his resiliency, however, by rethinking his strategy and seeking to gain at least some of his objectives by administrative means as well as by legislative action. In addition to stepping up industrial innovation by federal sponsorship of research, the major objective of Hollomon's original program was to encourage industry to increase its own research activities. Hollomon set to work to investigate, and in some cases to implement, various means by which this goal might be achieved. Currently, the situation is as follows:

1) Three panels of the Commerce Technical Advisory Board, which Hollomon chairs, have undertaken studies. One study, already completed and now being evaluated by industry, is concerned with technical standards, especially as they relate to the acceptability of American products abroad. A major recommendation is that a federally chartered standards organization be created to coordinate the development of commodity standards at home and to represent American interests overseas in the development of voluntary international standards.

Studies still under way are concerned with (i) the relation between tax, antitrust, and regulatory policy, on the one hand, and research and development and innovation on the other, and (ii) the philosophy and possible consequences of direct federal intervention in industrial technology. A fourth study, recently undertaken by a presidential commission, is directed to U.S. and foreign patent systems and their effect on American technology.

2) To bring about better collection and distribution of the vast output of technical information generated by defense programs and by the "civilian" economy, a Clearinghouse for Federal Scientific and Technical Information was created last year as part of a reorganization within the Bureau of