NIH Study: Wooldridge Committee Praises Past Efforts, But Urges Major Organizational Revisions

Last year, following a long period of congressional sniping at the National Institutes of Health and the onset of friction between NIH and many of its grantees, the White House appointed a blue-ribbon committee to study the organization of NIH and the administration and quality of its research programs.

The committee, headed by Dean E. Wooldridge, physicist and electronics industrialist, subsequently subjected NIH to what was probably the intensest scrutiny ever given a federal research agency: it set up 12 panels of researchers and physicians to study virtually all phases of NIH operations; in the course of their work, the committee and its panels consulted approximately 1000 persons who are in one way or another associated with NIH. Last week, the Wooldridge Committee delivered its findings in the form of a 213-page report titled "Biomedical Science and Its Administration—A Study of the National Institutes of Health."* The report, which is one of the most lucidly written and tightly reasoned in the lengthening series of studies of federal support of science, merits the close attention of all persons who are concerned with NIH—scientists, administrators, and politicians. For the Wooldridge Committee, while endorsing—with a few exceptions—the performance of

* Available for $1 from the U.S. Government Printing Office, Washington, D.C. 20402.

Findings and Recommendations of the Wooldridge Study

The following, verbatim, are the principal findings and recommendations of the Wooldridge Committee:

Current Quality and Cumulative Impact

1. We consider the NIH program to be sound and recommend its continued support.

Plans and Policies

1. The problem of program balance should be given increased emphasis by the management of NIH.

2. A new advisory group should be established to assist the Office of the Director of NIH in the making of major plans and policies, especially those related to the allocation of NIH funds and resources. Referred to as the "Policy and Planning Council," the new unit should consist of experienced and distinguished scientists together with a suitable minority of outstanding non-scientists with wise understanding of and dedication to fulfillment of the Nation's needs.

3. The Policy and Planning Council should not only be called upon by the Director of NIH for understanding and support of his major plans and policies, but it should be encouraged by the Congressional Committees concerned with NIH to participate in the annual budgetary hearings and in the formulation of the NIH programs.

4. Along with the submission of broad issues to the continued scrutiny and recommendation of the new advisory group, there should be a tightening of lines of authority within NIH. In particular, the Advisory Councils as well as the Directors of the separate Institutes should in the future owe their appointments and their authority to no higher government level than that of the Director of NIH.

5. The Director of NIH should be given greater discretionary authority than he now possesses for the transfer of funds from one category to another.

6. The size and importance of the NIH program should be recognized by the provision to its Director of easier access to and greater participation in the councils of higher authority in the Department of Health, Education, and Welfare.

7. To support the decision-making activities of the Director and the Council, NIH will need a strong and analytical planning staff. Under the guidance of the Director, this staff should concentrate its attention on the generation and continual updating of a master plan covering all major aspects of the activities contemplated during the several succeeding years, together with the analyses and judgments supporting it.

8. Pending accomplishment of the necessary statutory changes, NIH should move ahead by strengthening its staff and long-range planning activities. The Director of NIH should give consideration, during this interval, to the appointment of an interim Policy and Planning Council.

9. Interim arrangements should on no account be allowed to become a permanent substitute for the entire package of closely interrelated changes recommended in this section.

The Extramural Programs

1. The Study Section procedure utilizing scientific peer judgments is the best available method for awarding research grants. It should be preserved and strengthened by administrative devices which will lessen the load on individual Study Section members without decreasing their opportunity to make scientific judgments.

2. Increasing quantification of the biologic sciences requires increased participation of physical scientists and mathematicians in all aspects of NIH operations. The Institutes should take an active role to encourage this participation where appropriate.

3. NIH should modify its procedures to strengthen

NIH up to this point, goes on to conclude that government involvement in medical research has reached a scale that calls for far-reaching organizational and administrative changes. The changes would not only involve the three-cornered relationship of the researcher, his institution, and NIH but it would also affect the position of NIH in the federal hierarchy, as well as the degree of immunity that NIH would have from political currents.

On the question of whether the taxpayer is being properly rewarded by NIH's rapid ascension to the $1-billion-a-year rank, the Wooldridge Committee concluded: "We suspect that there are few, if any, one billion dollar segments of the Federal budget that are buying more valuable services for the American people than that administered by the National Institutes of Health." And it offered the opinion that, despite financial growth by a factor of 10 in 8 years, "there is good evidence that the average quality [of NIH-supported research] is steadily increasing."

But these desirable results, it continued, have come about because of a "phenomenon that is frequently observed in large and complex operations —the ability of a handful of unusually competent men in positions of authority to obtain good results from their team despite serious internal weaknesses. In this instance," the report went on, "the nation has profited from the rare coincidence of great ability and dedication, not only in the Director and top staff of NIH, but also in the key men of the Congressional Committees charged with responsibility for the affairs of NIH. . . . But if it has worked well in the past, why worry now? We worry for two reasons," the report explains. "First, we believe the conditions under which NIH will have to operate in its period of approaching maturity will differ from the conditions during its recent rapid growth phase in such a way as to make the quality of its operations much more dependent than before on proper organization and procedures. In addition, we feel that the dependence for the sound operation of a billion dollar a year program on the continued association and personal effectiveness of a handful of specific individuals is not wise"—a reference not only to the

the authority and increase the responsibility of its grantee institution for the work performed by its staff members, when the quality of institutional management merits it. The changes should include:

a. Assumption of responsibility by an executive of the grantee institution (for example President, Dean, Department Chairman) for the pertinence of NIH-supported work to the institution's over-all science/education program of which it is a part, for the qualitative adequacy of the project activities to be performed, and for the expenditure of the funds involved.

b. Additional funding of program projects, in strongly managed institutions.

c. Enlargement of the amount of General Research Support Grants.

d. Assignment to the administrative executives of the institution of the authority to make a variety of project-related decisions presently reserved for central NIH determination.

e. Modification of the present practice of allowing, as reimbursable indirect charges, an arbitrary percentage of direct costs. Instead, all directly chargeable and reasonably allocable costs associated with a supported project should be itemized by the grantee institution; if less than 100% of the costs are to be paid by NIH, the same fractional reimbursability should apply to all costs, direct and indirect alike.

f. Coverage of the costs attributable to the salary of the investigator by means of a two-party contractual transaction involving NIH and the institution alone.

4. For those institutions which have not developed the administrative capacities to handle responsibility for the grants of their investigators, NIH should employ its granting authority as a tool to encourage such development. In the absence of adequate administrative improvement, NIH should substantially curtail the amount of its support for the institutional investigators. The procedures employed for these purposes should have the prior review and approval of the Policy and Planning Council.

Direct Operations and the Intramural Programs

1. We recommend, as an early agenda item for the Policy and Planning Council, consideration of the amount of independent, university-like research that NIH should conduct intramurally. If reductions are decided on they should be carefully executed, to ensure the preservation of high quality in the remaining activities.

2. We believe that the origination, organization and management of collaborative programs should be an important and continuing function of NIH.

3. With respect to the Cancer Chemotherapy Collaborative Program, we advocate the appointment of an *ad hoc* committee to make a study and recommend any necessary changes.

4. With respect to collaborative programs in general, we recommend several steps to make it more likely that the projects with the highest probability of pay-off will be activated, and that they will then be well managed. These steps include:

a. Continued use by the separate Institutes of the advice of outside experts regarding the feasibility of proposed collaborative programs.

b. Exercise by the Policy and Planning Council of a high-level advisory responsibility for all major collaborative programs.

c. Contracting flexibility to permit NIH to place program management authority in selected outside organizations, when justified.

d. A very strong internal NIH policy encouraging every effort to keep each collaborative program as small as possible.

e. An inviolable rule that no large collaborative program, no matter how intrinsically promising, will be started without the assurance of the availability of a strong management team.

f. More dependence on the continuing appraisal and advice of outside consultants than has recently been characteristic of the management of the larger collaborative programs.

President receives Wooldridge Report: (standing from left) Dean E. Wooldridge; Julius A. Stratton; William V. Houston; Quigg Newton; Donald Hornig, OST Director; Colin McLeod, deputy OST Director; and George James. The report was delivered to the President at the White House on 18 March. [AP photo]

NIH staff but also to the dollar-producing relationship that has evolved between NIH director James Shannon and Congress's angels of medical research, Representative John Fogarty (D.–R.I.) and Senator Lister Hill (D.–Ala.), respectively, heads of the House and Senate NIH appropriations subcommittees.

To implement its recommendations, the Wooldridge Committee calls for a series of changes that would, first of all, alter the present division of administrative responsibilities between NIH and the universities and, secondly, strengthen NIH in its relations with the political community. Basically, the formula calls for NIH to concentrate on long-range planning while universities take it upon themselves to provide surveillance of the research activities that NIH funds in their laboratories. To enable NIH to assume its recommended role, the committee proposed a series of administrative changes aimed at strengthening the NIH director and, though it did not say so explicitly, at getting NIH out from under the Public Health Service. The committee would establish a Policy and Planning Council, "a group of prominent nongovernmental scientists and laymen to exercise a high level advisory function that is not currently being performed." As an example of the policy matters to be entrusted to Council consideration, the Wooldridge Committee offered the issue of the division of NIH resources between research and institutional development.

The proposed Council, which sounds very much like the National Science Board of the National Science Foundation, would be appointed by the President or the Secretary of the Department of Health, Education, and Welfare, of which NIH is a subdivision under the PHS. But it would function at the level of the director and, the committee suggested, it would, like the National Science Board, participate in congressional hearings. The effect of this setup, along with the observation that NIH is entitled to "its own self-sufficient management structure," suggests a separation from the PHS, as well as an attempt to create a prestigious structure that would help insulate NIH from congressional intervention. The Wooldridge Committee also suggested a reduction in the authority of the directors of the individual institutes that make up NIH, and authority for the director to transfer funds among the institutes—a power that Congress has been reluctant to yield.

As for the universities and their researchers, the committee concluded that much of the resentment currently directed toward NIH for its surveillance of research could be eliminated if university administrations equipped themselves to do the job. And it also concluded that, if the universities prepared themselves for this role, NIH could give them greater authority in the use of funds and—though it didn't say so—greater call upon the loyalty of the researcher.

Quoting and endorsing the report of its Panel on Administration, the Wooldridge Committee noted that "the lines of day-to-day administration and reporting, except on certain financial matters, run rather directly between investigator and NIH [staff] scientist. The institution is involved only tangentially. The national study section peer-judgment apparatus for reviewing and recommending proposals tends further to emphasize the attachment of the in-

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George James, Commissioner of Health, New York City

William D. McElroy, Chairman, Department of Biology, Johns Hopkins University

Carl V. Moore, Chairman, Department of Medicine, Washington University Medical School

Quigg Newton, President, Commonwealth Fund

Joseph B. Platt, President, Harvey Mudd College

Gwilym A. Price, Chairman of the Board, University of Pittsburgh

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Thomas J. Watson, Jr., Chairman of the Board, International Business Machines Corporation

Jerome B. Wiesner, Dean of Science, Massachusetts Institute of Technology.

vestigator directly to NIH and to de-emphasize his attachment to the administrative structure of his local institution. To overstate the matter, it appears that NIH, anxious to protect the investigator from any interference that might impair his freedom and thus his productivity has tended to treat the institution as a possible source of such frustration. Conversely, it appears that the investigator, a party to the traditional tensions between faculty and local administration, has rather comfortably accepted a role as a protege of NIH and of the national community of investigators in his technical field." The committee also offered the view that if the universities would take up the watchdog role which, in large part, has been thrust upon NIH by Congress, it would be politically and administratively easier for NIH to increase the amount of General Research Support Grants—that is, funds to be expended for research at the discretion of the university. NIH now limits these funds to 5 percent of the research grants at a given institution; the committee said that the amount might be raised to 15 percent, and added the suggestion that university science departments, outside of medical schools, be made eligible for such assistance.

The report strongly praised the operation of the Study Section system and endorsed its continuation as the best-known means for allocating research funds. It noted that the committee's panels had investigated 240 extramural grants, selected on a statistical basis from throughout the NIH program, and that it had "serious reservations" about only nine and had adjudged only seven to be "unworthy of support." It added, "In scientific research, such a ratio of ill-advised projects, when judged after the fact, is impressively low."

The most serious criticism was directed toward the NIH Collaborative Programs, especially the cancer chemotherapy program, which was established in 1956 following congressional pressure to explore even far-out possibilities for effective cancer drugs. The Wooldridge Committee said it "would not have advocated preventing the start of the program," but it noted that the chemotherapy program accounts for $30 million a year and is yet to produce any significant cancer drugs. Without intruding too far into the perilous territory of Congress and cancer, it observed that the program has lacked a strong scientific base, and it then gingerly stepped away with the suggestion that the program be reviewed by "an outside group of the broadest scientific character."

The committee also examined the question of the balance between NIH's intramural and extramural programs. The division at present is $160 million for all activities directly under NIH control, covering research, review, and administration, and $760 million for all outside activities, including research grants, fellowships, training, and state-control programs. The committee noted that it would defer to more thorough studies, but on the basis of what it had found, it concluded that the intramural research should be limited to work "uniquely suited to performance in federal facilities, rather than simply to the conduct of university-type reseach. . . . [We] are inclined to the opinion that optimization of the NIH program for the period that lies ahead will require some decrease in the present proportion of intra-mural research."

The report, which was delivered to President Johnson last week, has been forwarded to the Secretary of HEW for study. Considering the influential membership of the committee, and the fact that the White House Office of Science and Technology organized the study, the Wooldridge Report is likely to exert great influence on the future administration of medical research. If there are any contrary views, now is the time to make them known.

—D. S. GREENBERG

Boat with solar cell panels mounted on deck (left) negotiates light surf at Fort Story, Va. Solar boat developer John Hoke is aboard. With one panel mounted overhead (right), boat is tested on tidal river with one motor operating during Army tests.

Solar Boat: Army Evaluators Record a Plus for Novel Craft

A solar-powered boat, which became a minor *cause célèbre* in a congressional investigation of the research arm of the Agency for International Development (AID) in 1962, appears to be making some headway. The Army tested the boat and pronounced the use of solar cells for propulsion of lightweight craft feasible. And the rig last week was an item of interest at a Solar Energy Conference in Phoenix, Arizona.

The solar-powered-boat project figured in House foreign-operations subcommittee hearings on AID research contracting practices (*Science*, 17 May 1963). AID's solar boat was developed by John Hoke, who had conceived the project while serving in Surinam for AID. Hoke's idea was to construct a lightweight boat and give it an extended field test under tropical conditions to determine how well a solar-cell-powered battery recharging