Letters

Government-University Relationships

In recent years tensions have developed within the universities, and between them and the government, over such issues as reimbursement for the costs of research, the terms of financial accountability, and the regulation of research. To deal with mounting concern over these problems and their impact on scientific research, the National Academy of Sciences has appointed a Committee on Government-University Relationships in Support of Science.

The committee has divided its work into three tasks: identification of the enduring principles that should guide the evolution of the government-university partnership; examination of the principal problems in the relationship, their origin and potential for resolution; and exploration of a proposal by the National Commission on Research that a continuing body may be needed to facilitate communication between the partners and to address and promote resolution of disagreements over policy and process.

I write to solicit views on any of these areas, but particularly about the following problems that we are studying:

- How, why, and to what extent the government and universities should share the costs of research;
- The allowability, apportionment, and control of indirect costs;
- The terms of financial accountability;
- The appropriate role of the government in the support of graduate training of scientists and engineers;
- The adequacy of support to assure up-to-date research facilities and equipment in light of the apparent limitations of the project grant system;
- The extent to which stability, continuity, and predictability of funding can or should be assured;
- The problems and benefits that result from our pluralistic system for support of science;
- The advisability of establishing a more explicit national science policy, including systematic criteria for setting priorities for science and for allocating resources for scientific research;
- The proper balance between considerations of scientific freedom and government regulation of research; and
- The effects of government policies on university-industry relationships.

Information regarding studies of these or related issues would be extremely helpful to us. We are also interested in specific examples of difficulties encountered in these areas, comments on their relative significance, and suggestions for ways to resolve them. To be most useful to the committee, responses should be received by 30 April 1982.

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Small Business Research

Perhaps the academic science community should be less defensive about the outcome of the recent initiatives in Congress to increase the flow of federal research funds to small businesses. The Rudman bill, which has passed the Senate by an overwhelming vote, would require all large federal agencies to set aside 1 percent of their extramural research and development budgets to fund research at high-technology firms. The corresponding House bill, H.R. 4326, is being reviewed by several committees.

It is difficult to accept the proposition that this set-aside would be a diversion of funds at the expense of universities. If the entire set-aside were taken from funds that would otherwise go to colleges and universities—the federal agencies would be unlikely to go that far—there would be a 6.6 percent reduction in federal support for academic grants and contracts. This would be a sizable perturbation but need not cause an unmanageable discontinuity. The key, of course, is how rapidly the diversions would be expected to take place. The Senate bill provides a 3-year transition period.

The science community has something positive to offer as the small business research initiative unfolds. For example, there is our working knowledge of peer review. It is a tradition with us, something we take for granted. Both the Senate bill and the House bill require that there be outside peer review of proposals. Science leaders have articulated some important things about criteria for choice and the relative merit of competing proposals (*1*). It seems to me that this knowledge should be passed on to small businesses, that is, to those who would be submitting proposals.

There is a pragmatic side to this issue, too. It is clear from the most recent published assessment of science and technology in the United States (*2*) that public support for science has been decreasing since the late 1950's; the American public assigns a relatively low priority to funding for basic research vis-à-vis applied research in areas such as health, energy, and education. One result of the set-aside programs would be to enlarge our constituency by increasing the number of people with personal or secondhand contact with research. Whether or not that is worth the cost trade-off remains to be seen. Nevertheless, the sentiment in Congress seems clear, and the science community should take steps to influence small business research initiatives in a positive way.

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References and Notes

1. A. M. Weinberg, *Reflections on Big Science* (MIT Press, Cambridge, Mass., 1967), section 3. Recent criticisms of the peer review process have been answered by A. H. Clark [*Science* **215**, 11 (1982)].
2. National Science Board, *Science Indicators 1980* (National Science Foundation, Washington, D.C., 1981).

Recently our office (a privately owned company) received a solicitation from the National Science Foundation (NSF) requesting that proposals be submitted for the Small Business Innovation Research Program (SBIR). The stated goals of this program (*1*) are to stimulate:

> . . . technological innovation in the private sector, increasing the commercial application of NSF-supported research results. . . .
> . . . [A] second important goal of the solicitation is the conversion of NSF-supported research into technological innovation by private firms.

I find it disturbing that NSF should give money to private, for-profit organizations during a period in which funding