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Federal Impediments to Scientific Research

In a world where uncertainty and danger will always be part of living, the need to foster competence in research and development should be obvious. But apparently Congress and the administering agencies have lost sight of this goal. In an effort to ensure impeccable use of public funds, they have piled law after law and regulation after regulation on all those conducting research. They have not confined their zeal to universities. Agencies of the federal government have been affected. The recent Augustine report on the National Aeronautics and Space Administration (NASA)* ascribed some of the ineffectiveness of NASA to government procurement policies:

... [S]ince 1965, more than 60 new procurement-related public laws have been enacted. In addition, 25 Executive Orders, 16 Office of Management and Budget Circulars, and 24 Office of Federal Procurement Policy Letters have been issued, all of which affect the procurement process directly.

With few exceptions, none of these laws, orders or circulars distinguishes between the procurement of routine housekeeping or office supplies and state-of-the-art technology, hardware, or services. . . . [W]e were repeatedly advised that their cumulative effect was to lengthen, complicate and increase costs associated with the procurement process. . . .

NASA technical staff members have remarked that contract oversight duties now consume a disproportionate amount of their time, time that they believe would be more beneficially devoted to hands-on work.

Many of these laws and regulations are applicable to the universities. They have given rise there to administrative bureaucracies and to diversion of scientists from their creative efforts. A consequence of the required bureaucratic procedures is a need to inflate indirect costs. These, of course, come out of funds that should be devoted to research. In some ways, the problems faced by the universities are more complex than those of NASA. Funds for research are derived from at least 11 different agencies. Each of these has formulated its own set of regulations. In addition, the universities must comply with regulations that are more onerous for them than they would be for a federal agency. For example, there are costs of new animal care facilities and tighter regulations on the performance of chemical hoods.

A particularly dismaying feature of the government-university interface is that relationships continue on a long-term course of evolving deterioration. In the early days after World War II, there was a high degree of mutual trust and an absence of bureaucratic requirement. Scientists had freedom to formulate and conduct their programs of research. Later the bureaucrats took over and placed emphasis on project research with highly detailed budgets and detailed research proposals. That, of course, is the road to pedestrian research. A competent scientist adjusts the program as new facts and creative ideas emerge.

After about 1965, the rate of deterioration of government-university relationships accelerated. During the second half of the 1980s an attempt was made to improve the relationship. As an outgrowth of an experiment conducted in Florida, a federal demonstration project was organized aimed at decreasing friction and paperwork related to grants. This experiment, coordinated by the Government-University-Industry Research Roundtable of the National Academy of Sciences, has had some positive results in decreasing paperwork. However, during the past few years, more than 23 additional administrative requirements have been imposed. These requirements involve drug-free workplace, hazardous waste and materials, restrictions on foreign nationals, and scientific fraud and misconduct. Taken singly, the requirements may seem appropriate. However, the 23 taken together impose a large increased burden. In addition to forcing the accumulation of more bureaucracy both in the universities and the federal agencies, the government is implicitly signaling that 23-plus new requirements are each more important than the conduct of scientific research. That kind of signal affects the morale of professors and must affect student choices of future careers.

The time has come for Congress and the agencies to engage in soul searching with a view toward improving the priority attached to scientific research. The Augustine report sets forth a similar view: "We conclude . . . that the Legislative and Executive Branches should review the combined effect of current laws, executive orders and circulars on the efficiency of high-technology research and development operations."—PHILIP H. ABELSON

*"Report of the Advisory Committee on the Future of the U.S. Space Program" (U.S. Government Printing Office, Washington, DC, December 1990).