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1 Illustration**Document Type:** Article**Subject Terms:** SCIENCE & state**Abstract:** Asserts that in view of faltering federal funding, the scientific community must help restore excellence by placing greater emphasis on wiser spending. Suggestions for the Defense Department and the scientific community; Opportunities within the federal advisory committee structure.**Full Text Word Count:** 759**ISSN:** 00401692**Accession Number:** 9103251061**Database:** Business Source Complete**THE NATIONAL INTEREST****MISMANAGING SCIENCE**

With faltering federal stewardship, the scientific community must help restore excellence by placing greater emphasis on wiser spending, not more spending.

THE success of U.S. science depends largely on how well the federal government allocates resources and administers programs. Unfortunately, the government has been performing these key management functions poorly.

Almost every agency faces major trouble:

The National Institutes of Health, despite ever growing budgets, is giving inadequate support to new individual investigators, putting money instead into the extension of continuing projects .

The Department of Energy has embarked on an unaffordable number of multibillion-dollar projects that will be built, if at all, on delayed and therefore even more costly schedules.

NASA programs either have little scientific merit (the space station) or do not work as planned (the Hubble Space Telescope).

The Department of Defense is allocating an increasing fraction of its budget to in-house laboratories rather than contracting the work out to university and corporate labs that are frequently more capable.

The National Science Foundation, in its eagerness to expand its activities, is favoring institutions that agree to supplement federal funds with their own. Such "cost sharing" sacrifices scientific excellence on the altar of cash and effectively forces universities to take money from undergraduate education to support NSF-sponsored projects.

Why is this happening? First, the federal government is no longer able to attract good scientists to career service—a failure that becomes more serious as science becomes more complex. Second, agencies are funding programs on the basis of their political support, circumventing the peer review process that establishes scientific merit. Most importantly, instead of doing some things well, the country is doing many things poorly.

Calling for more federal research funding will not by itself arrest the decline in scientific quality. Even if Congress were to find additional money—which is unlikely—it would not help much if inefficient research management persists. With this faltering federal stewardship, the scientific community must help restore excellence by placing greater emphasis on wiser spending, not more spending.

The Defense Department, for example, should centralize its basic and exploratory research planning to reduce duplication of work by the different services. Central control would also prevent the diversion of basic research resources into near-term development projects, which are chronically short of money. And the quality of research would improve if DOD upgraded and shrunk its in-house laboratories. For its part, the NSF should limit itself to programs its budget can support rather than rely on cost-sharing arrangements.

The present problem suggests the need for more action by the president's science advisor. This individual's most important task is to counsel the president on such issues as productivity, education, and the environment. Toward that end, the science advisor should work to assure the appointment of technically qualified people at the assistant secretary level in agencies with a technology mission. But the science advisor should not act as a special pleader on behalf of particular science programs and cannot take responsibility for wisely implementing agency programs.

The scientific community should help Congress and the public assign priorities to projects and fields that are competing for available resources. Physicists, for example, must reach a consensus on the value of the \$8 billion-plus supercollider relative to other areas of physics.

Perhaps the best opportunity lies in the federal advisory committee structure, where scientists help decision makers allocate resources and gauge the consequences of alternative courses of action. The Department of Energy relied upon such committees for years. A departmentwide energy research advisory board reviewed the recommendations of committees that focused on particular disciplines, such as magnetic fusion.

Establishing this type of formal mechanism more broadly would strengthen the influence of scientists in the allocation of resources. In the NSF, for example, an advisory committee on mathematical and physical sciences would help set research priorities among fields, while a panel of experts in, say, chemistry, would offer guidance on where to fund research in that field.

In the past, scientists have relied upon the wisdom of the sponsoring agency and the random legislative process to reach such judgments. But as the complexity of the scientific enterprise grows while the technical competence within federal agencies declines, and as Congress progressively views big

science as big pork, the need for the scientific community to intervene becomes more critical.

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