Accountability: Restoring the Quality of the Partnership

A Report from the National Commission on Research

In October 1978, the independent National Commission on Research (*1*) began to review the problems of the government-university research relationship and to recommend improvements. The central issue of difficulty in this relationship is accountability. The public wants to be assured that the best research is produced and that public moneys are not wasted. The government wants to attain its program objectives and fulfill its stewardship responsibilities. The universities want to conduct research well, avoid diversion of resources to meet unnecessary administrative requirements, and protect the integrity of their operations. Both the universities and the government seek to maintain public confidence in their activities. The specific problems of the government include concerns over stewardship, criticism for intrusion, the resource allocation process, avoiding diversion of federal programs to general university support, and loss of public confidence. Specific problems for the universities include criticism for poor management, reduction of level of research, restrictions on flexibility, and, again, the loss of public confidence.

In this study on accountability (*2*) we received views from government and university officials, as well as interested parties in industry and private organizations. The commission members and a small staff also reviewed previous studies by the government, private commissions, and independent commissions and associations (*3–8*). We analyzed two principal forms of accountability: financial and administrative accountability, which focuses on evidence of financial propriety and regularity and compliance with administrative requirements; and scientific accountability, which focuses on achievement of results or progress toward objectives. Because most federally funded research is in fields of science, the term scientific accountability as it is used here includes research efforts in the social sciences and in the humanities.

Financial and administrative accountability has the goal of assuring that funds are spent within the terms of the research agreement, without diversion, fraud, or waste. It is implemented through expectations and requirements of the sponsor, incentives and reporting, checks and balances in the operating systems of both parties to the research agreement, and subsequent reviews of expenditures and operations.

Scientific accountability is largely self-enforcing without government interaction. In the research community, peers play a major role in deciding what work will be supported, who shall carry out the work, and what is significant. Researchers also file technical reports on their activity with agency sponsors. Such reports are critical in the review of proposals for further support. In some areas, researchers' accountability to the public takes place through public participation in their activity and through lay membership on committees responsible for the planning and oversight of research.

Areas of Concern

Government audits of university activities have repeatedly cited documentation practices that auditors find inadequate. Government officials also contend that universities are inordinately slow in improving their financial management systems and that federal funds are sometimes diverted from one project to another or to unsponsored activities. Recent reports of the Inspector General of the Department of Health, Education, and Welfare (*9*) and of the General Accounting Office (GAO) (*10, 11*) have detailed these difficulties. Although an audit finding does not necessarily mean a final disallowance after the subsequent steps of audit resolution are completed, the size and proportion of these difficulties indicate a lack of agreement about appropriate documentation standards.

The universities contend that fraud and abuses are rare, without condoning their occasional occurrence. The universities point to an escalation of documentation standards that are unacceptable, and oppose their retroactive imposition. The universities chafe at what they believe to be an overemphasis on accounting precision which is meaningless. They believe it falsely engenders security. Increasing indirect cost rates are a concern to many, while university central administration officials lament spiraling energy costs and escalating administrative requirements which cause such increases.

Origins of the Problems

The origins of the problems are deep-seated. They include process and organizational differences between universities and the government, as well as differences between university operations and private enterprise, where the application of fiscal and administrative accountability tools was principally developed. The character of research activity does not align with existing practice for measuring researchers' efforts, and it is unrealistic to expect institutions that are highly diverse to meet a uniform federal standard. The dominant research support distribution system of project grants is highly commendable, but does not fit the ongoing way that research is conducted: finite periods of support do not relate to the continuous nature of research inquiries. Further problems arise from the competition for scarce funds, which makes proposals increasingly specific, notwithstanding the great uncertainty of the research process. Rising indirect costs and the revision of federal principles that govern their reimbursement (*12*) leave many problems unsolved. These continuing disagreements derive primarily from the erosion of a mutual but largely unwritten understanding of the basic nature of the government-university relationship in support of research. Until this understanding is repaired, efforts to agree on a set of appropriate cost principles are futile.

Our review of the evidence indicated that, although certain areas could merit further study, a rigorous analytical approach would be expensive and unlikely to yield isolated causes or universally accepted conclusions. We believe that adjustments to provide significant improve-

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ments in the relationship can be made without awaiting further study, and here summarize our conclusions and suggest a new set of operational principles. On the basis of these conclusions we have made a number of recommendations to improve the government-university relationship for research.

Conclusions About Accountability

Seven conclusions were reached as a result of this accountability study.

1) The research universities and the government are not working together as well as they should. Their relationship has been strained by accusation and distrust, affecting the atmosphere in which research is being done. The quality of the relationship must be restored.

2) The renewal of the university-government relationship should be based on principles and objectives that both partners understand and accept.

3) Because of the diversity of activities undertaken within the relationship, and the diversity of the institutions and sponsoring agencies undertaking them, the activities must be governed primarily by mutually adopted principles, standards, or objectives, not by detailed procedural requirements.

4) The management and accountability procedures employed by the university and its research investigators must be consistent with both the terms of the specific research agreement and the academic environment. The nature and extent of federal constraints and involvement must also be tailored to the type of activity.

5) Academic institutions must regulate themselves more effectively, and the government must reduce its imposition of regulations to only those which are essential.

6) An atmosphere of flexibility within an environment of reasonably stable fiscal support is essential for research to flourish.

7) The government and the university must recognize that current management technology is inadequate for some of the problems involved in accountability for research in academic settings.

Operational Principles

We suggest that the following principles should underlie the conduct and support of research carried out by universities with federal support. They must be recognized and understood by each partner if the relationship is to be effective. They are divided into principles for the universities and principles for the government. The fundamental principles for the research universities are: (i) The pursuit of new knowledge is one of the principal functions of a research university. (ii) Freedom is essential to inquiry. (iii) Research and teaching are inseparable. (iv) Diversity among research universities is a source of strength for the nation's research program. The fundamental principles for the federal government are: (i) Government supports research in the national interest. (ii) Public support demands public accountability. (iii) The government in the United States consists of federated organizations.

From these principles we developed the following objectives to serve as a guide for the government-university relationship.

1) To maintain, strengthen, and support the competitive processes by which we try to assure integrity, objectivity, and excellence in the pursuit of knowledge. These include fair and courageous use of review processes, full scientific accountability in the selection of research directions and programs to be pursued and supported, and critical evaluation and dissemination of research results.

2) To develop and strengthen the institutional and the human resources that will ensure progress in research, and to attend especially to the responsibility for educating new generations of scientists and scholars.

3) To provide for the productive integration of instruction and research, for the benefit of both and the society they serve.

4) To support and accommodate diversity in both government and the research universities, for the sake of the strengths their diversity brings.

5) To improve the associations between the government and universities, to make them both stable and supple.

6) To achieve informed general recognition of both the necessity for adequate accountability and the primary measure of accountability, namely value received for investment.

7) To make joint efforts to find productive and nonintrusive ways of providing accountability.

8) To recognize that both government and universities have other constituencies whose needs have to be balanced along with those arising from their association in research.

9) To recognize that both government and the universities should share equitably the responsibility of supporting the nation's research enterprise, each in its own way, using its resources prudently.

10) To establish and maintain the nation's research capability at the highest level, capable, if need be, of responding to a national emergency.

Recommendations

The commission made the following recommendations.

1) *Overcoming suspicion.* Research universities and the government should make vigorous, concerted efforts to overcome the mutual suspicions, ignorance, and misunderstandings which strain their relationship and weaken the nation's research enterprise. Under the present system, neither the government nor the universities assure that their people understand properly the complexities of the relationshp. It is therefore suggested that: (i) Federal officials, university presidents, and other officers responsible for the research enterprise need to examine together the fundamental principles and issues of the government-university research relationship and the system in which it operates. (ii) The government and the university should each provide basic information about the government-university relationship to all new personnel responsible for research support and management, including faculty. (iii) Both government agencies and universities should provide continuing education in research program management for their staffs and faculties. (iv) Faculty researchers should be kept informed about federal developments relevant to research performance and management. (v) Educational and research management associations should explore ways to bring fundamental issues in federal-university research relations into public forums for constructive discussion and debate. These should include Congress, the press, and national public radio and television.

2) *Tailoring accountability to the nature of the sponsored activity.* Research universities and the government should develop a new system for accountability tailored to the nature of the activity being sponsored and based on a set of minimum core requirements applicable to all research agreements. The core requirements would be sufficient for all basic research and for some applied research; further requirements would be added only for activities of a pronounced procurement character.

Federally sponsored research in universities covers a wide range of activities. This includes generation of new knowledge in a general discipline or

group of disciplines; research in a specific area targeted on federal objectives; development, testing, and demonstration; and manufacture or service characterized by provision of a specific product. The government-university relationship for these activities varies from a support (or assistance) mode to a procurement mode, but all the activities are currently burdened with a set of financial accountability requirements appropriate for procurement of specific deliverable items. Much of the university-based research does not need the hard edge of the procurement policies and will never be amenable to such requirements.

The Grants and Cooperative Agreements Act (Public Law 95-224) could be one starting point for evolving a better system for federal research support. In implementing the act it will be important not to overlook the influence of long-established agency attitudes and traditions about the type of agreement the agency uses to support research (*13*).

The system of accountability that we propose would contain core requirements sufficient to avoid fraud and diversion from the purpose of the activity, broadly defined. These core requirements, which would be applicable to all research universities, would be in the form of principles or standards rather than specific procedures, thus allowing for the diversity of the universities' organizational structures and accounting systems. These core requirements would be the only requirements for basic research and some applied research, whether or not the work were undertaken in support of a specific federal mission. Additional sets of requirements would be coupled with the core requirements when closer government oversight of scientific or fiscal matters was consistent with the nature of the activities and agreement.

We recommend developing a very limited number of such additional sets of requirements, with the requirements being selected according to the nature of the activity, not the title of the agreement (grant, cooperative agreement, or contract) or other kinds of labels such as basic research, applied research, or mission-oriented research.

3) *Revising federal cost and management principles*. The Office of Management and Budget (OMB), in consultation with the federal agencies which sponsor research and the universities, should revise the federal cost principles (*9*) and the federal management principles (*11*) as soon as possible, but certainly within 3 to 5 years. The revision should ensure that these guidelines for financial and administrative accountability (i) incorporate features that not only control against abuse but also facilitate and encourage effective management, (ii) are fully consistent with the nature of the research process, (iii) take into account the academic environment in which they must operate, and (iv) are based on better mutual understanding of the purposes of the government-university research relationship.

The cost and management principles outlined in OMB circulars A-21 (*12*) and A-110 (*14*) do not provide the optimal principles for federally sponsored research agreements with universities. Whereas some government representatives believe the principles provide inappropriate latitude and inadequate control against waste or abuse, university representatives believe they incorporate requirements that are unproductive, intrusive, and counterproductive, or out of proportion to the risk of federal funds. The commission believes that these differences arise because the principles imperfectly accommodate the nature of the government, the nature of the universities, and the nature of the activity involved, and because there are significant differences in expectations regarding the purposes of the government-university research relationship.

4) *Reviewing of draft and audit findings, and linking the technical review and financial audit*. The OMB should, as a minimum, institute new procedures to allow an opportunity for research funding agencies to comment on draft audit findings covering their university projects. This arrangement would be roughly parallel with current practices involving draft GAO management audit reports, and would provide relevant information for the audit agency. As an optimum, agency program officers should supplement their review of final scientific reports with advisory observations concerning the reasonableness, from a research standpoint, of the expenditures for personnel. The records of sponsoring agencies would subsequently be useful for the independent financial audits. This would link the technical review and the financial audit, an important linkage now missing.

A major cause of stress in the government-university research relationship is the extent to which auditing and research program management are separated. Better arrangements are therefore needed that would narrow the separation without either compromising the independence of the audit or subordinating research management responsibility to the fiscal audit.

Federal agency program officers should accept responsibility, in the course of their appraisal of progress of final scientific reports by investigators, for documenting their views on the reasonableness of deviations from originally planned research protocols, and expenditures for personnel. Independent postaudits, which normally occur long after the completion of the project, would take all such information into account. In this way, the auditor would have the benefit of both the programmatic appraisal of the investigator's work and a timely judgment by the technical officers as to the context of applied effort and variances from proposed research patterns. Because such a review would be costly and might not be feasible with current program officer staffing, new procedures should be introduced to provide for research funding agencies to comment on draft audit findings covering university projects they have sponsored. Thus at least some input from those best able to determine scientific accountability would be made available for use in the ultimate audit resolution.

5) *Institute self-regulatory methods*. A simpler and less costly method of effort reporting based on responsible self-regulation should be instituted. Thus the government should accept certifications by individual investigators that direct salary charges to their research agreements are reasonable and fair, provided that each certification is accompanied by the federal program officer's review of the reasonableness of these expenditures for the work undertaken. There are recurring disagreements about documentation for salaries and wages charged to federally sponsored agreements. The government standard has been the industrial model of frequent time or effort reporting on an after-the-fact basis. As the magnitude of funds involved has increased, the government has sought more comprehensive and more detailed reports. Although the new federal cost principles (OMB circular A-21) state that "reasonable accurate approximations" are sought, they require documentation of any apparent change in effort distribution, whether or not that change is significant. Universities, however, operate on a work assignment basis. Hours worked or effort expended are not used as performance measures for professorial or professional personnel. There is not, nor should there be, a standard work week for these individuals. The activity of professional personnel in universities has a complex, multipurpose, joint product character. The level of precision sought by the federal reporting requirements ex-

ceeds what can honestly and usefully be accomplished.

The new method instituted should both fit the nature of the research organizations and provide accountability for public funds. To this end, there should be a new approach for documentation of direct salary charges. In lieu of effort reporting, the documentation would consist simply of (i) reports by the university of the salaries charged to the sponsored agreement; (ii) explicit certification by the investigator that the direct expenditures for salaries and wages are fair in terms of the research agreement; and (iii) assessment by the federal program officer of the reasonableness of these expenditures for the work undertaken. The program officer's acceptance of the reasonableness of these expenditures would constitute the formal determination of their allowability. Periodic audit of the institution's payroll system would be undertaken by federal auditors or independent auditors to assure that the system had adequate controls against fraud. This approach would reflect the actual work assignment process, use information from those most knowledgeable, provide for checks and balances within the institution, and provide for independent audit of the payroll system.

6) *Allowing for a percentage of indirect costs.* Government agencies and universities should jointly construct an option, analogous to the "standard deduction" in income tax calculation, to charge activity which is treated as indirect costs under sponsored agreements. The fixed percentage would be negotiated. It might either be uniform or vary from institution to institution. Some universities would not receive full credit for their allowable indirect costs. However, accountability would be fully served and both government and universities would reduce the burden of detailed accounting and audit.

Faculty effort devoted to activities charged as indirect costs, such as departmental administration and research administration, is especially difficult to document. This is because this effort tends to be a relatively small percentage of an individual's total assignment, it is usually intermittent, and it may fluctuate throughout the year. However, the annual and institutional aggregate of such faculty effort is sizeable.

The current and revised cost principles already provide an option for "small" institutions. The commission recommends the introduction of another option by which institutions could elect a modest fixed percentage recovery for the indirect cost component for faculty administrative work allocable to organized research. This fixed percentage charge would be used in lieu of full recovery based on full documentation and would allow some simplification of the present burdensome documentation requirements.

When coupled with the simplified approach for documenting salaries charged as direct costs (see recommendation 5), the "standard deduction" option would provide good accountability. It would use methods more appropriate to the research environment and less costly for both the government and the universities.

7) *Reviewing of financial management systems.* University presidents should review their financial management systems. Universities should invest sufficient resources to ensure adequate control and accounting for the expenditure of research funds. These systems must provide timely and accurate financial information necessary for effective research management by research investigators. In turn, research investigators must meet the responsibilities and obligations that accompany their use of public funds.

This recommendation may be stating the obvious. Some universities have not adequately adapted their financial management systems to accommodate all the special requirements imposed by the use of public funds. One aspect that is most often addressed inadequately is the fact that timely and accurate financial information is necessary to university researchers for prudent management of research programs. Without such information other accountability problems inevitably follow.

In universities the individual researcher has the primary operational responsibility for both the scientific and fiscal project management of federally sponsored research. The universities must ensure that their researchers recognize and meet this responsibility and therefore must provide them with the management information they need to do so; for example, current expenditure and cost encumbrance information. Most universities have tried to shield their researchers as much as possible from the burdens of administrative work. A new balance must be struck to promote more informed and effective collaboration between researchers and administrators in universities. This will be fostered by improved federal accountability requirements that are productive and appropriate to the research process.

8) *Providing flexibility in fund management.* The government and universities should develop revised financial and scientific accountability processes that increase the flexibility and incentives for investigators to manage research funds in a scientifically prudent manner. Improved accountability for public funds will not emerge from imposition of tighter controls no matter how rigorously they are enforced. The present rules erect artificial and unnecessary barriers to resource sharing, economy measures, and rebudgeting to respond to research or management opportunities.

The approaches taken by National Institutes of Health (NIH) in delegating certain prior approval authority to grantee institutions and more recently by the National Science Foundation (NSF) in its experiment in postaward administration should be expanded in scope and adopted by other agencies. Recommendations 9 through 11 suggest how these objectives can be accomplished.

Some institutions are overly cautious in their responses to federal requirements, while others must contend with state regulations that are complex and may also conflict with the federal regulations. The result can be institutional interference with research not required by federal provisions. Thus all institutions should examine the necessity of their own restraints on the flexibility of the investigator.

9) *Delegating authority to the universities.* Agencies should delegate to the universities more authority to make budgeting and management decisions under sponsored agreements. During the period of a sponsored agreement, changes in the original budget or management plans may become necessary. For most agencies, certain changes require the written prior approval of the agency. Such approval is almost always forthcoming, but the approval process introduces delays and paperwork. Delegation of the authority to give prior approval to an institutional prior approval system (as NIH and NSF have done for certain changes) makes the university responsible for enforcing the government requirements using the government's criteria for making the decision. Such delegation places the responsibility in the hands of those who have the information for prudent judgments and reduces both paperwork and delays in obtaining decisions.

The key elements in an institutional prior approval system are: (i) Local decision-making structures tailored to the particular institution and designed to preclude conflict of interest. (ii) Accreditation of an individual institution's prior

approval system by a single federal agency. (iii) Delegation of the same decision items by all participating agencies. (iv) Reservation by the government of prior approval authority for change in project director, significant change in project director's level of effort, significant change in scope of work, or change in the institutional prior approval system itself. These reservations, together with overall cost limitations, protect agency control over major budget elements, such as large equipment acquisitions. (v) Documentation of decisions made within the institutional prior approval system. (vi) Provision of information about delegated decisions to the funding agency program manager. (vii) Periodic audit of the institution's compliance with the charter of its accredited prior approval system.

Widespread use of institutional prior approval systems will increase the productivity of government research funds and will reduce the administrative work of sponsoring agencies. Such an approach would not be new. The NIH system of limited delegation of prior approval authority has operated successfully for about 15 years. The current NSF experiment with greater delegation has been judged highly successful in its preliminary evaluation. Thus the commission is recommending the expansion of a concept that has already been tried. Widespread and successful operation of such systems should lead to expanded responsibility and flexibility for the universities, with greater accountability and cost savings for both parties.

10) *Aggregating research projects.* Congress should authorize arrangements for aggregating individual research projects for administrative purposes. Related research programs funded under several agreements or by several federal agencies need arrangements for postaward aggregation of their administration. This would also streamline the administration of multiple awards from the same agency to investigators in a single department or other university unit. The narrow focus of many individual research agreements has introduced unnecessary barriers to good management and has created cost transfer problems. Aggregation for postaward administration would (i) facilitate effective use of funds by reducing the necessity of cost transfers among related projects; (ii) allow efficient pooling of resources; (iii) eliminate the pressure for end-of-year spending associated with 1-year continuing grants; and (iv) simplify effort reporting for individuals whose projects are contained within the aggregate.

Aggregated awards would allow for both scientific and financial accountability. Aggregation would not jeopardize the control by the individual investigator because the project director must approve movement of funds from his project within the aggregate. Scientific reporting would be done as it is now, with each investigator responsible for reporting to the sponsoring agency on each award received. The integrity of congressional authorizations and appropriations is carefully maintained, because aggregation occurs after the funds are awarded and all reporting is maintained on a project basis.

The administrative efficiencies of aggregated arrangements would benefit investigators, universities, and the government. The strong incentives investigators have for controlling the resources they have developed, and the institutional authorized prior approval system (described in recommendation 9) provide the checks and balances necessary for ensuring that the sponsoring agency's intent is preserved. Some efforts toward aggregation are already being made, for example, mechanisms provided by the Joint Funding Simplification Act, and the recent NSF Master Grant Experiment with selected chemistry departments.

11) *Eliminating constraints on timing.* Government agencies should improve the management of research funds by eliminating unnecessary constraints on the timing of expenditures. Specifically, institutions should be authorized to approve preaward expenditures up to 90 days prior to the effective date of awards and for carry-over of surpluses or deficits to the following contractual period, at least up to a specified percentage of the total award for that period. This provision would facilitate equipment ordering and recruitment of personnel for new projects and would enable continuing projects to proceed without interruption. Although provision would entail some risk management by the universities, because the awards they anticipate receiving are sometimes not finally funded, it would involve no risk or commitment by the sponsoring agency.

Expenditures incurred prior to the effective date of an award or beyond its expiration date are not usually allowable. These restrictions assume that research can be forced to operate within an annual cycle. This underestimates both the likelihood of uncertainty and the importance of continuity in the research process.

Project directors should also be permitted to carry over surpluses (or deficits) to the following contractual periods, at least up to a percentage ceiling. This provision would eliminate some of the impetus for cost transfers, reduce inefficient expenditure patterns, and reduce administrative costs. Limiting carry-overs to a fixed percentage of overall expenditures would provide safeguards for the government while allowing needed flexibility for research.

12) *Ensuring sound accountability practices.* Congress, the agencies, and the universities should ensure that the processes of accountability themselves meet the tests of accountability. The processes should yield results that justify their cost. One important application of this principle would be the elimination of the documentation now required by legislated cost-sharing on research grants.

The practice of accountability is not free. The universities and the government are both prepared to pay for sound accountability practices. Where there is little or no return for the accountability effort, those accountability requirements should be set aside. The distinction between fitting and gratuitous requirements can be a difficult matter of judgment, involving careful consideration of the balance between the cost and the benefits of the requirements.

A clearcut example of a gratuitous requirement is documentation of legislatively mandated cost-sharing in research grants to universities. Specific documentation of the cost-sharing now required by statute or regulation for research grants has virtually no effect on the amount of research support the institutions provide. The documentation does impose a costly paperwork burden on the institutions while exacerbating the effort reporting problem by adding another category of faculty effort.

Despite recommendations to eliminate the general cost-sharing requirement by the Government Procurement Commission, by the Interagency Task Force which studied the recommendations of the Procurement Commission, and by the Federal Paperwork Commission, the requirement remains in force. The time has come to rescind it.

Another example of nonproductive documentation is provided by the current effort reporting methods discussed under recommendations 5 and 6.

Toward Improvements: An Evolution

In his March 1979 science message (*15*), President Carter called for "renewed attention" to the partnership between universities and the government for research. Comptroller General Elmer Staats has acknowledged the strains in

the partnership and suggested that steps be taken to ease them (*16*). Popular media have presented information on these problems, some of which has been out of context and without balance. Congressional committees have received a significant body of testimony evidencing administrative problems of academic researchers caused by government reporting requirements (*17*).

We believe that what is needed is a bridging process through which the concerned parties on both sides can see the relationship as a whole, and guide its evolution in directions that assure its strength and vitality. Although we have not yet settled on a solution, we offer for discussion the following preliminary suggestion: The creation, as an experiment for 5 years, of a new, independent forum whose purpose would be to watch over the university-government research relationship and to guide its evolution.

Such a forum should provide a nonadversarial setting. Here persons from the public, Congress, universities, and the federal agencies would address the major policy issues and problems in the research associations between the universities and the government. They would derive effective responses in terms of the objectives of the relationship and its overall role in the national research enterprise.

Such a forum should not be a debating society. Nor should it be a substitute for the organizations that deal with the day-to-day problems in the government's sponsorship of research in universities.

If convened by a highly respected nongovernmental or quasi-governmental organization or by a private foundation with a strong interest in the national research enterprise, perhaps such a forum could accomplish what present structures have been unable to do.

References and Notes

1. The members of the National Commission on Research are: W. D. Carey, Executive Director, American Association for the Advancement of Science; P. P. Cohen, Professor Emeritus, Department of Physiological Chemistry, University of Wisconsin Medical Center, Madison; D. R. Corson, President Emeritus, Cornell University; E. E. David, Jr., President, Exxon Research and Engineering Company; C. Kaysen (Consulting Member), Vice Chairman and Director of Research, The Sloan Commission on Government and Higher Education; D. N. Langenberg, Professor of Physics, University of Pennsylvania; I. C. Lieb, Professor of Philosophy, University of Texas, Austin; C. A. Mosher, Fellow, Woodrow Wilson International Center for Scholars; R. L. Orbach, Professor of Physics, University of California, Los Angeles; C. J. Pings (Director), Vice Provost and Dean of Graduate Studies, California Institute of Technology; W. H. Sewell (Chairman), Professor of Sociology, University of Wisconsin, Madison; M. C. Throdahl, Senior Vice President Monsanto Company; L. S. Wilson, Associate Vice Chancellor for Research, University of Illinois, Urbana. Members of the commission staff are: G. Fusco, Executive Director; C. P. King, Staff Associate; M. Kowalczyk, Staff Assistant; J. G. Blackwell, Administrative Assistant. The commission was founded late in 1978 by the following organizations: Association of American Universities, American Council on Education, American Council of Learned Societies, National Academy of Sciences, National Association of State Universities and Land-Grant Colleges, and Social Science Research Council.
2. The full report on accountability and subsequent reports are available from the commission at 2600 Virginia Avenue, NW, Suite 1003, Washington, D.C. 20037.
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9. Office of Inspector General, Department of Health, Education, and Welfare, *Annual Report*, 1 January–31 December 1978 (Government Printing Office, Washington, D.C., 1979).
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11. *Need for More Effective Audits of Higher Education* (Government Printing Office, Washington, D.C., 1979).
12. Office of Management and Budget, Circular A-21 (6 March 1979).
13. The Office of Management and Budget solicited public comment on the draft working papers for a study, as mandated by Public Law 95-224. The commission submitted extensive comments on their working papers; copies of these comments are available from the commission.
14. Office of Management and Budget, Circular A-110 (30 July 1976).
15. The Science and Technology Message of the President transmitted to Congress, March 1979.
16. E. B. Staats, *Science* **205**, 18 (1979).
17. Senator Edward Kennedy, speech introducing the Health Science Promotion Act of 1979, *Congressional Record*, 23 April 1979, pp. S4471–S4486.