

Mr. Staats
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ADDRESS BY THE COMPTROLLER GENERAL OF THE UNITED STATES,
ELMER B. STAATS, BEFORE ANNUAL MEETING OF THE COMMITTEE
ON GOVERNMENT RELATIONS OF THE NATIONAL ASSOCIATION OF
COLLEGE AND UNIVERSITY BUSINESS OFFICERS, SAN FRANCISCO,
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THE POLITICS OF KNOWLEDGE

I have chosen the title "The Politics of Knowledge" for my remarks this evening because it seems to express in a few words the problems which confront us mutually. I use the sometimes unrespected word "politics" as meaning the science or art of government in a democracy. The extent that the public funds of the United States are applied to various aspects of costs of operating our colleges and universities is the measure of the public's or the political interest. At the present time about 13 percent of our national budget (exclusive of our war and other military costs in Southeast Asia) is allotted for one purpose or another to universities or colleges. This amounts to over 20 billion dollars of a total budget outlay of some 152 billion dollars. Any time public expenditures reach this level, the management of these funds becomes a matter of political interest. In western societies there is a mandate that the funds be expended economically and efficiently, that the results be effective, and that all of this be publicly accounted for.

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You know the figures just cited. I mention them only to provide us general terms of reference and to remind us all that we have this responsibility of public accountability in the funds that are applied to producing more and more knowledge, just as we have for taxpayers' dollars spent for any other services provided by government at any level. In other words, we in the government and you in the universities and colleges do have a political accountability in being able to affirm to any interested party, be it a citizens group or a congressional committee, that public funds are wisely awarded and prudently expended. This is in part what I mean by the term "the politics of knowledge".

If there is one theme that must consistently repeat itself in your minds day after day it must be that knowledge not only costs money but that every year it costs more money. At the same time the demand for knowledge is always on the increase. This is the treadmill that has brought Federal funds on an increasing scale, in a growing variety of ways, into our educational institutions. And with that rise in Federal participation in the budgets of our colleges and universities--presently over 20 percent of the total--has come increasing congressional attention and interest in how the funds are spent.

This trend will continue and probably rise because knowledge and the need for knowledge is indispensable to a modern society such as ours. With the exception of our fundamental moral ideals,

religious principles, and constitutional foundations--without which mere knowledge could be applied in any direction--knowledge is probably the greatest resource we have. We must have it, it costs money, and so the question continually before us all is simply: How do we get the most knowledge from the money we have available?

This is fundamentally the issue behind the present concern in the Congress as to how costs involved in performing government contracts for research and development by the colleges and universities can best be apportioned. I will have more to say about this and the current work of the General Accounting Office in this area in a few minutes.

The work that the universities and colleges have done for a number of years in the area of research and development, both in basic and in applied research, has produced pearls without price. An article in Science magazine of some months ago by Dr. Charles H. Townes, Nobel Laureate, provides as a convincing an example of what is being done by your institutions as any I know of.

Ten years ago few areas of physics seemed as unpromising from the practical viewpoint as investigations of the interactions between microwaves and gas molecules. Dr. Townes pointed out that since practical applications could not be clearly foreseen to enter on the balance side of the ledger against the expenditures for research in this area, private industrial laboratories left this area primarily

to university researchers. You all know the amazing result. The basic research in some of your institutions produced the laser and the maser which today are revolutionizing many branches of technology and creating an entirely new and fast-growing industry.

This illustrates the difficulty in trying to test proposed expenditures for research and development on a balance sheet before work is undertaken. If potential benefits of a given project had to be foreseen with certainty, accomplishments would be greatly restricted. Both vision and dollars are required for research and development as in running a higher institution of learning generally. But because one out of every five dollars that you spend comes, from one program or another, from the Federal Government, controls to greater or lesser extents are provided by the Congress in the laws passed to administer the programs it supports.

Dr. Lee A. DuBridge, the science adviser to the President, has observed that these controls can be contracted or altered in which ever ways that the public, through the Congress, may demand. This is another way of defining "The Politics of Knowledge." Dr. DuBridge went on to say:

"It is not difficult to set forth in a general way the goals we all seek to achieve in the use of scientific knowledge. In the negative sense, we all wish to prevent or discourage applications of science which are harmful to individuals or to groups of individuals . . . On the positive side we wish to encourage and support those

applications of science which . . . will improve the quality of life in our cities and in rural areas, which will reduce the dangers of wars between nations.

"All this is easy to say--and very hard to accomplish. For example, we all wish to reduce air pollution. One way to do this (in part) would be to prohibit the use of any vehicle which burns gasoline--or to prohibit the sale of gasoline itself. . . . We might also prohibit the operation of any industrial facility which discharges contaminating products into the atmosphere. But such sledgehammer methods are clearly undesirable and unworkable. A better way is to encourage research aimed at the development of better technology for reducing such pollution. And then when better technology is available, to encourage or require its utilization.

"This is indeed being done--though the pace of advance may seem slow. More funds are needed for the support of research in pollution technology and for environmental technology in general. The present Administration in Washington is now seeking new mechanisms to improve and expand our activities in this direction--and new mechanisms for the control and prevention of pollution--such as the recent Santa Barbara oil disaster. New knowledge and new technologies are needed as well as better regulation and management, using existing technologies.

"This is but one example--and there are hosts of others--in which a primary role of government should be a positive and not solely a

negative one. . . Science, throughout the ages, has on the whole been put to enormous beneficial uses--and even greater opportunities lie ahead. Positive measures to enhance our opportunities to capitalize on our knowledge and on our talents can pay great dividends. An important role of government is to remove barriers and to speed progress in many fruitful areas.

"I trust that the great American universities. . . can assist in this endeavor. I hope you can invent innovative ways for organizing interdisciplinary programs for bringing our knowledge and our talents in science and social science to bear on the problems of our society. I hope that private and local funds can be found for these enterprises since Federal funding is bound to be slow and cumbersome and often inhibiting when wholly new and radical approaches are being studied."

STUDY OF INDIRECT COST OF RESEARCH

As most of you are probably well aware, the General Accounting Office recently conducted a study of the indirect cost of research sponsored by the Federal Government at educational and other nonprofit institutions, primarily research performed by colleges and universities. Representatives of The National Association of College and University Business Officers and the American Council on Education were of invaluable assistance to us in planning and carrying out our assignment in the short time allotted to us.

I would particularly like to call attention to the contributions of Howard P. Wile, Executive Director of NACUBO's Committee on Governmental Relations; of John F. Morse and Lawrence Pettitt of the American Council on Education; as well as those of Dr. Lincoln Gordon, Chairman of the Ad Hoc Committee on Indirect Costs, Commission on Federal Relations, American Council on Education.

For fiscal years 1966 through 1968, the appropriation acts of the various Government agencies awarding grants for the conduct of research contained a provision requiring cost sharing by recipients. These acts instructed the Federal agencies that none of the funds provided should be used to pay any recipient of a grant for the conduct of a research project "an amount equal to as much as the entire cost of such project."

C The so-called "Mansfield amendment" proposed by Senator Mike Mansfield to the Department of Defense Appropriation Act of 1969 would have reinstated a practice which had been in effect in the years preceding adoption of the legislative requirement for cost sharing. This was the practice of fixing a percentage limitation on the amount of overhead which an agency could reimburse the holder of a research award. The Mansfield amendment proposed that no part of the funds provided should be used to pay any recipient of a grant or contract for the conduct of a research project an amount for indirect expenses "in excess of 25 per centum of the direct costs."

The Senate passed the amendment after making its provisions applicable only to the Department of Defense rather than to all appropriation acts. The bill approved by the House of Representatives retained the language of previous years' acts.

A conference committee appointed to resolve differences in the bills apparently couldn't agree on either provision and directed that the language of both the House (cost-sharing) and the Senate (25-percent limitation on indirect costs) be stricken from the bill.

The conference committee stated that new and comprehensive studies should be made of the entire area by the General Accounting Office, by appropriate legislative committees, and by the appropriation committees. The studies should be directed toward achieving a uniform formula for the ascertaining of indirect costs on research grants throughout the entire Government. The Government should set the basis for indirect costs based upon sound accounting principles.

The committee report stated that if such allocation between direct and indirect costs is properly made, it would appear that the proper proportion of indirect costs to direct costs should not exceed 25 percent.

The intent of the conference committee was transmitted to the General Accounting Office October 11 by letter from Representative George H. Mahon, Chairman of the House Committee on Appropriations.

APPROACH TAKEN BY GAO

We proceeded within GAO to consider practicable approaches to such a study. It was difficult to clearly identify any widely held viewpoint on the specific problem or problems which triggered the request.

Due to the national election, we were not able to meet with representatives of the appropriations and other committees to obtain their ideas on what should be covered in our study until the middle of November. We then learned that the Committees of the Congress did not plan to conduct any studies of their own; that no congressional hearings were contemplated until after we completed our study; and that the committees were hopeful that the GAO could come up with a realistic approach to the cost sharing/indirect cost limitation impasse.

Probably the most important thing we learned from these meetings was the target date for completion of our study. Neither the conference report nor the letter from Chairman Mahon had specified a deadline. This fact, plus the unpredictability of the schedule of hearings by the House Appropriations Committee upon organization of the new Congress, caused the Committee to request submission of an interim report by March 1, 1969. This directive confirmed our tentative position that we would need to reduce our work wherever possible by seeking the assistance of all agencies and organizations which might have accumulated a body of information on the subject.

ASSISTANCE OF ACADEMIC ORGANIZATIONS

On November 18, representatives of the GAO met with Mr. Dick, Mr. Wile and Mr. Hines of NACUBO and Mr. Morse and Mr. Pettitt of the American Council on Education. This meeting proved to be the springboard for continuous cooperation between our organizations, through the course of our study up to issuance of our report to the Congress.

Mr. Wile made available to us the results of a study conducted the previous year by his Committee on Governmental Relations of on-campus overhead rates of 64 public and private institutions. He obtained permission from certain of the schools to identify rates with particular institutions so that we might use this information in selecting a representative sampling of private and public schools with high and low rates for our study.

The American Council on Education supplied us with voluminous literature on indirect cost limitations and cost sharing on research grants. Upon completion of our study, representatives of NACUBO and the American Council on Education offered constructive suggestions concerning our draft report. Officials of these organizations also met with us in helpful discussions relative to the positions we were considering for our final report to the Congress.

These contributions have enabled us to complete the study within the limited time available and to issue our report.

SCOPE OF GAO STUDY

The Mansfield amendment would have placed an overhead limitation on both grants and contracts for research projects. The conference committee, however, directed that studies be made toward "achieving a uniform formula for the ascertaining of indirect costs on research grants throughout the entire Government." The request received by the General Accounting Office from Congressman Mahon also was limited to research grants.

Federal agencies having authority to contract have been authorized also to make grants for the support of research since 1958. But this authority has been limited to grants with institutions of higher education or nonprofit organizations primarily engaged in scientific research. Accordingly, we conducted our study at 13 educational institutions, two hospitals, and two nonprofit research institutions. Since most of the basic research performed outside of Government laboratories was conducted by universities in fiscal year 1968, we concentrated on the educational institutions. The number of institutions included was limited by the time available.

Because some agencies use the contract instrument for the same type of research that other agencies obtain through use of the grant instrument, we also reviewed research contracts with educational and nonprofit institutions. We did not include development contracts. We met with officials of the six governmental departments and agencies which spend the predominant share of Federal research funds. We also

obtained data on indirect cost negotiations with 190 institutions from agency files.

At the 13 colleges and universities we obtained information on the number and amount of Government research grants and contracts held by the institution; the indirect cost rates each proposed; the bases used to allocate costs to Government research; the audit and negotiation records supporting determination of a final overhead rate; and the extent of participation by the institution in sharing costs of Government research.

We solicited the views of institution officials regarding the impact on research of cost restraints, such as the imposition of a fixed limitation on overhead reimbursement or of a mandatory cost-sharing requirement.

CONCLUSIONS OF GAO STUDY

As you now know, we concluded from our study that a uniform formula, in the sense of a uniform percentage rate to be applied to direct cost or some element thereof, would not result in a realistic determination of indirect cost, based on sound accounting principles. We concluded also that it is not feasible to determine indirect cost by a fixed method or procedure applied uniformly under all conditions. Overhead rates are merely a measure of the indirect portion of the total cost of research and there are a number of valid reasons why indirect cost rates vary.

Some of you may recall examples of this given in our report:

- Heat used for conditioning a laboratory or steam used in conducting an experiment may either be measured accurately and charged as a direct cost of research or charged as an indirect cost.
- The quantity of electrical energy used to light a laboratory or drive a motor attached to a centrifuge could also be measured and attributed to a particular research project.
- The cost of cleaning a laboratory could be determined accurately.

Ordinarily, determinations such as these are not made for joint activities because of the large capital investment required to provide the metering equipment and the added personnel necessary to collect and compile the detailed information.

But, when the research project is conducted as a separate activity, these costs usually are readily available and are charged directly.

There are differences also in the missions of the institutions, the nature of their research projects, their methods of operation, and the manner in which they are organized to perform research. Accordingly, the amount of indirect cost incurred will vary considerably, and properly so.

Fringe benefits, plant repairs, building alterations, and maintenance are handled as direct costs by some universities; others handle them as indirect costs.

At one university we found that salaries for shop foremen, chauffeurs, buyers, programmers, and secretaries whose activities were research related were charged as direct costs. Where research is undertaken in separate laboratories, in separate buildings, or in facilities located away from the main campus, the tendency is to charge more costs as direct because they can be more readily identified to specific research work.

At 12 of the 13 universities, computer operating costs are directly identified to research projects; whereas, at one university total computer costs are charged to overhead.

Some universities charge the faculty members' time to administration, instruction, and research; these universities charge those portions of faculty members' salary identified directly to research and instruction as direct costs and the portions identified to administration as indirect cost. In contrast, other universities distribute faculty members' time solely to research and instruction, although administrative work may have been involved.

From these several examples you can readily see why we concluded that there is not enough standardization among research institutions and projects to permit use of a uniform formula or a fixed method of determining indirect cost.

We did conclude, however, that uniform principles and guidelines can be useful for determining indirect cost, provided they have sufficient flexibility to enable proper application to differing circumstances in an equitable manner.

As a result of our study also, we believe consideration should be given to providing more specific guidance and greater uniformity in the implementation of these principles and guidelines already laid down by the Bureau of the Budget Circular No. A-21. While we do not believe that additional guidance or improved administration will eliminate variations in the levels and rates of indirect costs, they should serve to lessen the differences.

We also obtained information on the practices and policies of agencies and institutions with respect to sharing in the cost of research projects. Both Government agencies and educational institutions are opposed in general to mandatory cost sharing. Both recognize that in some circumstances voluntary cost sharing is appropriate. Both believe that the amount of cost sharing is greater than that which has been identified.

We in GAO concur in the concept adopted in 1966 that cost sharing, to the extent that sharing is required, should be related to the total cost of a project. We believe that consideration of the interests of the Government and the institutions involved make it highly desirable that, within the requirements established by the Congress or the executive branch, the amount of cost sharing be flexible--a matter for negotiation between the responsible Government agency and the grantee institution.

HARRIS SUBCOMMITTEE HEARINGS

In March, a draft report on the information developed by GAO in its study was made available to the appropriations and other interested committees of the Congress. The initial action on the report was taken by the Subcommittee on Government Research of the Senate Committee on Government Operations, which scheduled hearings commencing April 22.

At this hearing, we stated our opposition to the imposition of a uniform formula for determining indirect cost, we noted that there are divergent views on the advisability of continuing the cost sharing requirement, and pointed out that these differing views cause recurring problems.

We testified that if a consistent policy is to be followed by the various agencies there will be a need for guidance from the Congress, or the executive branch, as to whether cost sharing is to be required and, if so, the general level, and the kinds of research programs in which it will be expected, as well as the degree of latitude to be permitted in its administration.

We suggested that perhaps the Harris Subcommittee could go deeply enough into these matters with the Government agencies concerned, and with the representatives of educational institutions, to enable it to formulate the needed policy guidance and to obtain such approval by the Congress or the committees concerned as is necessary to resolve this problem.

As an alternative, if mandatory cost sharing is to be required, we expressed our belief that congressional control over cost sharing could be effectively provided with minimum administrative cost and burden through review by congressional committees in their legislative and appropriation hearings of the cost sharing policies followed by the various individual agencies. On the basis of such review, the agency could be required to make any desired revisions in its cost sharing policies.

CONGRESSIONAL ACTION IS UNCERTAIN

GAO transmitted its final report to the Congress on June 12. As of this writing, the Harris Subcommittee has not released a report on its hearings. The effect the Subcommittee's recommendations will have, if any, on fiscal year 1970 appropriations for grant-type research cannot be safely predicted.

One of the first 1970 appropriation bills to be acted upon by the House provided funds for the independent offices, including the National Aeronautics and Space Administration, the National Science Foundation, and the Department of Housing and Urban Development. This bill, passed June 24 contains a provision that none of the funds provided should be used to pay any recipient of a grant for a research project an amount equal to the entire cost of the project. Thus, the initial congressional action has been to retain a requirement for cost sharing.

Last year's effort to fix an overhead limitation on research grants took place in the Senate, applicable to the DOD appropriation. It remains to be seen whether a similar attempt will be made this year.

SHOULD COST SHARING BE MANDATORY

Apart from advocating the use of cost sharing as a device to reduce the cost of Government research support, any consideration of the merits of mandatory cost sharing must also consider the philosophy of the entire university-Government relationship in research. There is no doubt that the Government needs the universities' research and the university research organizations need the Government's support. Nor is there any question that both have benefitted from their association. But there is a strong difference of opinion as to whether this mutuality of benefit should be translated to mean that the educational institution should share the costs of Government research.

In addition to aiding the colleges and universities in carrying out their research function, proponents of cost sharing cite the fringe benefits received by the institution from Federally-financed research. These benefits accrue in the form of increased prestige and reputations, retained equipment purchased with Government funds, and salaries partially borne by the Government. It is also claimed that cost sharing enables a wider distribution of limited Federal research funds among competent investigators and universities.

Opponents of mandatory cost sharing claim that the commitment of funds to support Federal research necessarily reduces funds available to support overall institutional programs. It is contended that, in some cases, funds are diverted to support scientific research at the expense of research in other academic fields.

The American Council on Education recommended that, except in special circumstances, cost sharing and matching requirements be eliminated, inasmuch as the principal contribution made by an institution to Federally-sponsored research should be its expertise. This recommendation was contained in a paper submitted in connection with our study.

The argument has been advanced also that the matter of research support should be considered as merely one element of the Government's overall involvement in the support of education, that cost sharing on research seems unwarranted in light of the aims of the many other support programs.

COST SHARING ON GRANTS VS. RESEARCH CONTRACTS

Until such time as we have further clarification of policy, we must live with the fact that the Congress for the past three years has required institutions to share in the costs of Government research. The Congress could decide that cost sharing on grant-type research should continue.

In our study we noted that, if there is to be a consistent application of cost sharing (and application is to depend upon whether

a grant or a contract is used), there will be a need for well-defined and uniform Government-wide standards governing the use of contracts or grants for research. Agencies using the contract instrument for research have not been subject to the mandatory cost sharing requirements, although cost sharing was obtained in many instances by these agencies.

The Bureau of the Budget recently completed an interagency study of the policies, procedures, terms, and conditions used for research projects at educational institutions. The results of this study have not been made public. It is known, however, that the BOB-led group examined into the grant vs contract problem and the advisability of using a new instrument, possibly to be called a research agreement.

We believe that there is a need for guidelines on when to use a grant and when to use a contract, as long as the Congress sets a cost-sharing requirement applicable to grants but not to contracts.

UNIFORM CONTRACT COST PRINCIPLES

I understand that there is some interest in the project for determining the feasibility of establishing uniform contract cost principles which we are making and particularly its relationship to institutions of higher education. The law under which this study is being made did not exclude colleges and universities or other nonprofit organizations. We were directed to consider the feasibility of establishing uniform cost principles for use in all Government procurement contracts in excess of \$100,000.

We don't know at the present time just what our conclusions will be--our report isn't due until December of this year--but it does appear that flexibility will be necessary to meet differing circumstances. We hope that much can be accomplished in reducing the wide variety of treatment now accorded similar transactions under existing contract costing principles and generally accepted accounting principles. Extensive data are now being accumulated under this study but has not been fully evaluated.

It seems apparent that the maximum degree of uniformity and consistency of treatment compatible with equity under the varying circumstances would be a highly desirable objective. I do believe, however, that there are basic differences in the relationships in contracting with universities as compared with commercial enterprises which need to be recognized. For one thing, universities normally do not receive a fee or profit on the work they do for the Government, whereas commercial enterprises ordinarily are paid such a fee or profit. This fee or profit allowance permits differences in the cost principles which may be used. For instance, interest in essence represents a cost of providing capital very similar to dividends and since dividends obviously should not be allowed as a cost of contract performance, the usual practice is not to allow interest as an allowable cost. The fee or profit allowed a commercial concern can take this into consideration. However, there isn't a fee or profit provided in contracts with nonprofits and this avenue is not available to

compensate for the disallowance of interest which is generally recognized as a legitimate cost.

The allowability of interest under contract and grants with educational institutions appears to merit further thought. There appears to be some cases in which the schools invest funds specifically for Government research and incur interest cost or lose endowment fund income, yet they can't recover this cost or loss of income under the existing cost principles.

Some consideration of this inequity will be necessary. Perhaps it's a matter for negotiation in individual cases rather than general adoption of allowability of interest. I believe that there would certainly be some problem with any practice of allowing interest generally on all of the capital investment involved in an educational institution. Much of this capital came from rather nonconventional sources in the sense that much of it was donated. The relationship is a bit unique also in the sense that there is some element of mutuality of benefit in these programs. The resulting concept of cost sharing is further evidence that a different attitude toward cost determination may be necessary.

CONCLUSION

All that I have said this evening concerns, essentially the question I raised in the beginning: How do we get the most knowledge from the money we have available for government-sponsored research in the universities and colleges? This is the reason questions are being asked in the Congress--questions as we have

seen sometimes difficult to answer adequately. How do we get more return on each dollar of investment in research? The more astutely you can answer that question the less you will have the Congress inquiring into your activities, as the GAO has been obliged to do recently. In a very real sense, this is the politics of knowledge.

In other words, it is good politics to be sound managers. I wonder, incidently, how many of you think of yourselves as managers. Perhaps, the term "manager" may not sound appropriate for the academic world. Suitable or not, I can assure you it is most important.

In his current book "The Age of Discontinuity" ~~and subtitled~~ the economist and management consultant, Peter F. Drucker, makes this same point. The book is appropriately subtitled "Guidelines to Our Changing Society" and I will close by quoting from it as follows:

"We need something that higher education has never known it needs: we need managers. The several different kinds of people in the faculties have to be organized into one institution. Yet they have to be organized for a variety of functions. Each of these men will have to be able to achieve his own purposes and to obtain his own satisfaction from his work.

"And then students' needs and students' desires will have to be integrated with the other university functions.

"This requires high managerial ability. The university may well offer the most challenging, the most difficult, but also the most needed of all managerial tasks around today."

Thank you all for your kind attention to an overlong talk on such a complex topic. Now I understand that questions are in order and I will be happy to try and answer any you may have.

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