# Letters

## Overhead and Accounting Methods

It was refreshing to read the simply stated recommendation of the National Academy of Sciences Committee on Science and Public Policy that overhead costs for federal contracts and grants be "based on application of essentially the same formula in both instruments" (20 Mar., p. 1302). Unfortunately, the subject of overhead, particularly as it applies to so-called nonprofit institutions, has taken on a mystique totally unrelated to reality.

What many seem unable to comprehend is that overhead consists of real expenditures. . . . By definition an overhead item is one not directly related to a specific project or task. Thus, when a person is taking an earned vacation or is on sick leave, he is not working on a specific project; salary paid to him during this period would normally be considered an overhead or indirect cost (such costs can be very high when employees are on a 9- or 10-month work year). Similarly, contributions to pension plans would be considered overhead.

This general rule seems clear, but accountants, not wishing to disturb unduly the arrangement of an organization's financial records, are also willing to agree with any "generally acceptable" system of accounting if the institution applies it uniformly to all activities. They will accept sick- or annual-leave costs as direct charges to contracts or grants if it is the institution's general practice so to treat such costs. The two accounting methods may appear to be completely contradictory, but the receipts of the institution may be roughly the same.

Arbitrary overhead ceilings imposed across-the-board for all recipients of grants or contracts make little sense. If unrealistically low ceilings are applied, they simply create a bookkeeping reaction by which more and more items of expense are treated as direct charges: depreciation on office or laboratory equipment, a proportion of office space, cost of leave, contributions to pension plans, secretarial expense, and in extreme cases heat, light, and maintenance. As a result, standardized payments for overhead have the contrary effect to that intended; they bring about changes in bookkeeping methods that may lead to "profits" from unused funds in the overhead category, establishment of "contingency funds," and the like.

Studies of overhead costs at a number of educational institutions show that as a percentage of staff salaries they are, understandably, high, frequently exceeding 100 percent. Yet these same institutions have contracts or have received grants in which budgets have been computed as though overhead were 25 percent or less. This is possible by making most of the charges direct costs.

The Academy of Sciences committee in recommending uniformity in treatment of overhead is, in effect, appealing to both reason and reasonableness. In order to accomplish such uniformity, publication of a detailed system of accounts, showing precisely what costs are to be included, is required. Could an "Accounting Commission" be established that could do this task? Unless a practical step of this sort is undertaken, there will continue to be charges and countercharges (in an accounting sense as well) on the overhead issue.

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In recent years scientists have been writing letters (such as Mather's letter in *Science*, p. 764, 21 Feb.), testifying before congressional committees, and making judgments as advisers to federal agencies with regard to overhead (more properly called indirect costs). With a few exceptions, the opinions expressed are obviously based upon only the most superficial knowledge of university accounting and finance. A university business officer who attempted to judge the scientific merits of a research proposal would find his opinion given no weight at all. Why do scientists expect, and many times even receive, serious attention for opinions and judgments outside *their* fields of competence? University accounting and finance are a highly complicated and specialized field. It requires each year a 110-page printed analysis, based on countless working papers, for the computation of indirect-cost rates at Princeton University. . . . The regulations under which the computation and audit are conducted are contained in *Bureau of the Budget Circular A-21*, a government manual which describes in detail how indirect costs are to be computed and what costs the government will accept a share of. And government auditors are assiduous in disallowing any costs not properly ascribable to government-sponsored research. As stated in Circular A-21:

> Indirect costs are those which, because of their incurrence for common or joint objections, are not readily subject to treatment as direct costs of research agreements or other activities.

In 1962 the National Science Foundation conducted a study (*Reviews of Data on Research and Development No. 32*) of the indirect costs of research and development in colleges and universities. The range, expressed as percentages of total direct costs, was from less than 18 to more than 50 percent, with an average of 28 percent for institutions with a substantial volume of government-sponsored research, or 32 percent for those with a relatively small volume. (Expressed as percentages of direct salaries only, which is the way most institutions compute indirect-cost rates, the percentages can be more than twice as high. Note that in order to compare rates one must first know the base used in each case.) The indirect costs of a grant are no less than those of a contract, if Circular A-21 is followed. See, for example, "Grant or Contract—Indirect Costs Are Just as Costly," *College and University Business*, March 1962; for a further analysis, "Grants vs Contracts," *Industrial Research*, April 1964.

It is a complete myth that university research will be more efficiently and less expensively performed if indirect-cost rates are kept as low as possible. Proper administration and management, adequate personnel benefits, good laboratories and libraries and stockrooms, and the host of other services required cost money, and the research benefits from them. Neither grants nor contracts from the federal

government are "aid to education." The funds appropriated by Congress are based on the expectation that the country, whose taxpayers are footing the bill, will derive benefits from the research commensurate with its cost. There is a true *quid pro quo*.

Like any organization, universities must recover the costs of the things they do. Student tuitions should certainly not be raised to help pay for government-sponsored research. Endowment income, which is becoming a smaller and smaller fraction of every institution's total income, generally is restricted by the donor of the principal so that it is available only for certain other purposes, such as teaching salaries, instructional materials and supplies, and student assistance. Alumni, private foundations, and industry, the other primary sources of income for private institutions, cannot be persuaded to give money for the purpose of sharing the costs of research undertaken through government grants and contracts. As Warren Weaver very well put it [*Science* **132**, 1521 (1960)], it is absurd to insist that these costs "should be provided by 'the institution itself' out of its 'own funds,' as though colleges and universities kept printing presses in the basement."

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## Experimental Cancer-Cell Implants in Patients

Your account entitled "Human experimentation: Cancer studies at Sloan-Kettering . . ." (7 Feb., p. 551) leaves the impression that certain facts have been deliberately concealed at the Jewish Chronic Disease Hospital (which cooperated on one stage of the research). Permit me to provide you with more complete information about "what happened in Brooklyn" so that you and your readers may appreciate more fully the true nature of the problem.

At the outset, I may remind you of a very important biologic fact which is not mentioned in your article, namely, that the implanted "cancer cells" represented homologous tissue, and that such tissue is regularly rejected by the recipient unless he is of the same genetic makeup as the donor (for example, an identical twin) or has been exposed to x-radiation or certain drugs that impair the immune mechanism. In view of the tremendous difficulty of transplanting organs from one human being to another, you will agree that the Southam test is about as safe as any of the routine clinical procedures of comparable nature, for example, the Menthoux test for tuberculin sensitivity or vaccination for smallpox or for typhoid fever. Indeed, the test compares favorably in potential hazard with some commonly used diagnostic procedures known to be associated with occasional serious and even fatal reactions, such as the measurement of circulation time by intravenous injection of decholin, saccharin, or ether, the BSP test for liver function, or the intravenous pyelogram. There was no practical possibility of untoward results to the patients who received injections of homotransplants consisting of tissue-cultured cancer cells derived from other patients. In addition, it should be pointed out that the three lines of cells which were used in the study at our hospital were derived from human tumor tissue 4 to 12 years ago. After such periods of growth in the laboratory, these cell cultures represent standardized biological agents having a high degree of uniformity and predictable reactions.

The injections were given by our senior resident under Southam's supervision after Southam had demonstrated the technique on three patients. Both he and his research fellow witnessed each patient's interview by the resident and found the consent satisfactory.

In accordance with standard procedure adopted earlier by the Sloan-Kettering group, the word "cancer" was not used in the explanations given to the patient. This procedure, approved by top-level executives of Sloan-Kettering Institute and Memorial Hospital, appeared justified because of the potentially deleterious effect which the dreaded word "cancer" may have upon the patient's well-being, as it may suggest to him (rightly or wrongly) that his diagnosis is cancer; and because it was irrelevant in regard to both the principle of the test and the patient's welfare. Many other scientists have endorsed this point of view. Thus, George E. Moore, Director of the Roswell Park Memorial Institute in Buffalo, was reported as fully supporting "the action taken by Dr. Southam in not using the word 'cancer' . . ." (New York *Times*, 22 Mar. 1964, p. 53). Indeed, this action was taken in compliance with conventional procedure in clinical practice. The facts that smallpox or poliomyelitis vaccines contain "live virus," that exposure to radioactive substances may increase the risk of contracting leukemia, or that the injection of certain iodinated compounds (used in renography), of bromsulphalein, or of penicillin may, on occasion, result in severe illness or even fatality, are usually not imparted to patients before they are subjected to any of these procedures.

What happened in Brooklyn was simply an extension of the Sloan-Kettering research, conducted by Southam with the same techniques used at Memorial Hospital. The medical staff of the Jewish Chronic Disease Hospital unanimously endorsed continuation of the study.

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All Mandel's comparisons are with established clinical procedures such as vaccinations or routine treatments such as penicillin. True, these procedures also carry risks. But they are designed to help the patient. What went on at Sloan-Kettering and at the Jewish Chronic Disease Hospital was not treatment of patients but experimentation on them. It seems to me that this distinction ought to be maintained, and that researchers ought to bear it in mind both when they consider the possibility, practical or theoretical, of "untoward results," and when they are judging whether a patient's consent is or is not "satisfactory."

—ELINOR LANGER

## Science as News

The difficulties of covering AAAS conventions enumerated by Raymond A. Bruner (21 Feb., p. 763) may be symptomatic of a trend science is taking—it is becoming more integrated itself and also more integrated with life-in-general. Synthesis and unity may be the dominant underlying movement of this age. One aspect is brought out in a statement, attributed to Defense Secretary McNamara, I think, about the necessity of making facts manageable. In this process, many "shining nuggets of achievement," to use Bruner's phrase, may be lost or momentarily held in suspension, or even, as Bruner seems to imply, discouraged. . . .

It may be that more manpower, planning, and publication outlets are