Letters

Grant Administration

William A. Calder (Letters, 14 Dec. 1973, p. 1085) implies that the indirect cost allowance taken by institutions administering government grants is to cover the expense of "the paperwork." However, it also covers the use of space and facilities of the institution not specifically provided for in the grant. This may include equipment ranging from high-energy accelerators, amino acid analyzers, electron microscopes, and ultracentrifuges to Xerox machines and pencil sharpeners. It also includes services, such as vacuum lines, gas, electricity, distilled water, and so forth. Even if Calder is engaged in research that does not require the physical facilities of a laboratory, he must require the usé of a research library, telephone equipment, and an office that is heated, lighted, and provided with janitorial services.

The burden of the institution for off-campus research is reduced, and the indirect cost rate is lower; but even for those projects, in addition to the paperwork, a good deal of administrative staff time usually goes into the discussion and preparation of the grant proposal. At my institution, many hours of my time and often the time of the president and the deans go into discussion, preparation, and negotiation with the granting agency before a grant is received. None of that cost is covered by the grant; such administrative functions are normally expected of the institution, and the indirect cost allowance is a mechanism for recovering at least a portion of this. The amounts recovered through the indirect cost allowance are often less than the cost to the institution for the service provided. If there are cases where the allowance amounts to more than the services provided, such excess recovery serves only to redress some of the losses in other cases. Institutions where grant research is carried on are much more likely to come out with less than full cost recovery, rather than more.

The implication in Calder's letter that the universities are ripping off the granting agencies is unfair and could be damaging to institutions where a heavy burden of sponsored research is being administered with diligence, competence, and honorable intent.

VIRGINIA P. WHITE
Office of Sponsored Research and Program Funding, Graduate School and University Center, City University of New York, 33 West 42 Street, New York 10036

Concerning Calder's comments on the administration of grant funds, my article "Government-university financial arrangements for research" (*1*), particularly in the section entitled "The problem of overhead," contains a fairly careful description of overhead, otherwise called indirect costs. The overhead associated with a research grant is not primarily, nor even predominantly, to cover the expense of "paperwork." Computation of overhead rates is a very complicated procedure. There are a whole host of expenditures involved, including those for operation and maintenance, departmental administration, and library and general administration, to name only a few. The differences in indirect cost rates among institutions result primarily from the fact that some institutions treat as indirect those costs which other institutions charge directly to the research grants; they are by no means an indication of relative efficiency.

For those who are interested in more information on this subject, the American Council on Education published in 1969 an excellent little brochure entitled "Direct and indirect costs of research at colleges and universities" (*2*).

RAYMOND J. WOODROW
University Research Board, Princeton University, Princeton, New Jersey 08540

References

1. R. J. Woodrow, *Science* **176**, 885 (1972).
2. Commission on Federal Relations, *Direct and Indirect Costs of Research at Colleges and Universities* (American Council on Education, Washington, D.C., 1969).

Energy and the Environment

Luther Carter's report "Environment: A lesson for the people of plenty" (News and Comment, 28 Dec. 1973, p. 1323) illustrates an attitude toward the energy problem that should not go unchallenged. Carter writes that environmentalists are encouraged by the "wholesome changes in life-styles" that may result from persistent energy shortages. However, it does not appear that environmentalists are concerned about solving the energy problem.

In his energy message of 25 November, President Nixon said,

> As we look to the future, we can do so confident that the energy crisis will be resolved, not only for our time, but for all time. We will once again have those plentiful supplies of inexpensive energy which helped build the greatest industrial nation and one of the highest standards of living in the world. The capacity for self-sufficiency in energy is a great goal, and an essential goal. We are going to achieve it.

In contrast to this, Carter quotes John R. Quarles, deputy administrator of the Environmental Protection Agency, as saying:

> We can face up to the bitter tasks of reordering our national economy and imposing discipline over our patterns of personal consumption. Or we can maintain our pursuit of progress and, as in some wild form of pyramid game, continue with ever-more-frantic efforts to keep one jump ahead of the ultimate collapse.

Who is right, Nixon or Quarles? The pages of *Science* contain many articles proposing various means of solving the energy problem by getting a supply of energy sufficient to support several times our present rate of consumption for hundreds or thousands of years. The authors of these proposals differ about what is the best way, but agree that the problem can be solved. Most of them take it for granted that the problem should be solved.

My own taste differs from that of the environmentalists. I like cars, and I think the present comfort of American life is an advance from previous hardship. The advantages of this kind of life are wanted by even more people, and there are further advances to be made. Some of these will require additional use of energy. I think this energy can be obtained at an acceptable environmental cost.

It seems to me that the environmentalists have exaggerated environmental dangers and the difficulty of getting more energy, because they would like

us to live differently for quite different and still unstated reasons. This tactic has been successful in getting rigid environmental laws passed, and has succeeded in stalling many measures for getting more energy. But, as the congressional vote on the Alaska pipeline showed, environmentalists cannot get us to change our life-styles without really convincing us that the changes are desirable or necessary. Unless this happens, we'll stick with Nixon.

JOHN MCCARTHY
Department of Computer Science, Stanford University, Stanford, California 94305

The University Department

I am sure that most department chair(wo)men were not indifferent as they read "Departments and disciplines: Stasis and change" (30 Nov. 1973, p. 895) by Robert Straus. He presents a dilemma in that any field of knowledge judged to be of value to society and of interest to scholars and students requires both resources (personnel, equipment, space, and money) proportional to its importance and an organized system of authority and responsibility (a department) to assure that these resources are applied efficiently. The dilemma stems from the fact that no sooner have such resources been allocated than obsolescence sets in because both the goals and the means by which they should be reached have changed. The French have expressed this in their ancient proverb, *Il faut chercher pour trouver, mais pas pour trouver ce qu'on cherche* (One must seek to find, but not to find that for which one seeks).

Nevertheless, I don't perceive the situation to be as serious as Straus suggests. Every department chairman should heed Sir Eric Ashby's advice (*1*) that academic administration is a *necessary evil*, but with the emphasis upon the qualifier. As our new medical school at the University of California, San Diego, has moved through its adolescence, I have been delighted by the emergence of an explicit committee structure—"Ad Hocracies" in the sense of Toffler and Braunwald (*2*)—as a means, not only of curtailing the power of departments, but also of dealing with "academic future shock."

These committees control important interdisciplinary courses, research, and service functions. Most have a half-life of only 2 to 3 years, although I am sure that some will evolve into groups (perhaps institutes) as large and conservative as any department. They also can serve effectively as buffers to protect the more abstract functions of the university from intense social concerns (as, for example, the Jet Propulsion Laboratory at the California Institute of Technology and the Applied Physics Laboratory at Johns Hopkins University).

The best way to handle most dilemmas is to learn to live with them, and I offer the following advice for those who may wish to add it to their "academic jungle survival kit."

1) Large and multifaceted departments are much more adaptable than small ones, as it is easier both to prune them and to graft on to them. The best way to Balkanize (or Middle-Easternize) a university is to create a series of small departments, each of which may serve as little more than a primping platform for some academic prima donna.

2) Periodic (every 5 to 7 years) institutional (and, perhaps, public) review of both departments and their leadership is essential as insurance against senescence.

Finally, I believe Straus exaggerates the impact of society at large on the university. Society has both the right and the responsibility to help define both the long-range goals and the more immediate objectives of its universities. However, it should resist the temptation to "legislate" new departments into existence or to delete old ones. Universities have every right to continue to resist this kind of irresponsible tampering.

JOSEPH STOKES III
Department of Community Medicine, School of Medicine, University of California, San Diego, La Jolla 92037

References

1. E. Ashby, *Sat. Rev.* **47**, 58 (21 Nov. 1964).
2. E. Braunwald, *N. Engl. J. Med.* **286**, 103f (1972).

Straus describes university departments as political units and suggests change. Why not accept the reality of this situation and profit from it?

When Woodrow Wilson was asked where he had learned politics, he replied that the campus had been his best school. The situation is no different today. The art and science of politics is displayed at all colleges and universities; the tragedy is that students are barred from observing that display and learning from it.

In Wilson's time, the amount of politics at the elementary and high-school level was minimal. Teachers were kept busy in the classroom and had little time to seek power individually or collectively. The institutions were operated on a lord-and-master basis, with almost total authority in the hands of the superintendent or the principal. Currently, teachers are banding together, and dictatorship of the chief administrator is becoming a rarity.

Who teaches and what is taught at the elementary and high-school level is hardly ever controlled by the teachers. Final authority rests with the elected boards of education, who, in practically all cases, relinquish their authority to the hired chief executive officer. Teacher committees operate in the realms of curriculum and personnel, but, alas, the maneuvers and discussions are not for students.

At most colleges and universities, the faculty selects personnel and determines curriculum, but the process of selection and decision—as political as any in a state legislature—is closed to students. Even a cursory view of methods would be illuminating to the neophyte, as well as instructive to the parents who pay the bills.

The young man or woman who has gone through the obstacle course of acquiring a Ph.D. applies to the head of a department for a position. A pleasant conversation ensues, while the department chairman fingers the references, college transcripts, and notations of other members of the department. The latter may be called in for more questioning of the aspiring professor. If a candidate is adroit in one-to-one or one-to-several situations, he may get the job, even though he is a stumblebum before a class or really hates teaching.

Departments seek to fill their rosters with Ph.D.'s from prestigious institutions who have research programs or scholarly publications under way. These become minor considerations when the candidate is warmly recommended by a friend of the department head. The form of patronage is thus similar to that in local, state, and federal governments.

Once employed, the college teacher has no real supervisor. Given the task