

SCIENCE

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EDITORIAL

Scientific Research in Universities

An important feature of the recent AAAS annual meeting was the keynote address entitled "Some Reflections on the Commonwealth of Learning" by Hanna Gray, President of the University of Chicago. She presented a multidimensional perspective on universities that included their past, present, and future roles as homes for scientific research. The treatment was and is particularly timely, for we seem to be at a major period of transition in relationship between government and the universities. Those who tend to be gloomy have much to talk about. President Gray listed some of their concerns, including: (i) a constriction of resources in a period of rising costs; (ii) a perceived decline of regard for the value of the scientific enterprise; (iii) controversies over indirect costs; (iv) issues of scientific integrity; (v) breaching of peer review (in pork-barrel allocations of facilities). In addition, she cited deep anxiety about the future of the partnership of 40 years between government and universities in behalf of scientific research. "... We are confronted once again with the problem of whether advanced scientific research has a natural, or enabling, home in the university and whether the university is in turn the beneficiary or the pawn of this relationship and its consequences."

In seeking to understand the present circumstances, historical perspective is useful. During World War II, academic scientists involved in defense research were remarkably effective. Subsequently the rationale provided by Vannevar Bush's concept of an endless scientific frontier, combined with Sputnik and the cold war, led to a great expansion in support for basic research. Scientists at universities were urged to make grant proposals, which were funded. Support for graduate fellowships, equipment, and buildings was readily available. Summer salaries were provided. Faculties expanded.

The expansive beneficence slowed in about 1968. Funds for fellowships, equipment, and space were curtailed and have not been adequate since. With time, a burdensome and complex federal regulatory structure was created that required an increased fraction of grant money to be devoted to indirect costs. Professors came under institutional pressures to obtain grants to pay for part of their salaries plus those of graduate students and postdoctoral fellows. Funds for equipment and facilities were scarce.

The current recession has eroded support for both private and public universities. For some, the reduction of allowable rates for indirect costs will impose the necessity of drastic remedies. In her talk, Hanna Gray offered the following comments:

At this time our universities have arrived at a stage of maturity burdened by too many tasks and too many demands and too great a confusion of expectations, by the consequences and distortions of excessive growth and over-dependence on sources of support that may come to exercise too large an influence, and by the illusion that comprehensiveness is necessary for institutional distinction. In short, universities have been over-responsive to those who seem to think that they should carry out every function and address every concern that might be of interest to citizens in general. They need to return to the criterion that measures what they can do, and do well, that other institutions cannot do, or do as well, and stick to their own special purpose, or it will be lost.

President Gray also stated:

In the triad of universities, science, and government, it is not enough to ask for a rewritten contract which places a greater share on the universities or expects them alone to make up already unfunded liabilities. Contraction of external resources and significant reduction in the definition of overhead reimbursement for scientific research will simply mean less research conducted in a university setting and a more selective approach to academic research as well as fewer university facilities and centers of research activity.

I think that in the future less research will take place in a university setting; more in other kinds of institutes, laboratories, and centers, both private and public, some of these affiliated in varying ways with universities. Yet I think the role of the university will become, paradoxically, more rather than less important for the total enterprise. I do not believe that the ideal of the university as an institution devoted to the missions of both research and education will disappear or become impossible of fulfillment; I do think that universities will have to become more differentiated among themselves and that there will be a greater division of labor and of special areas of strength among them.

Philip H. Abelson