

Capital investment in university research

As the budgets for the agencies funding science begin to take shape for FY 1985, we hope that the Administration, in spite of the large deficits now anticipated, will continue to give priority to funding for basic research. However, it is becoming clearer that, in addition to these annual budgets devoted mostly to operating expenses, there are needs for large investments in capital renewal (new instrumentation, facility rehabilitation and manpower development) that must soon be faced (funding of this kind was cut off in the early 1970s).

In August a year ago on this page, George Pake expressed concern about the growing obsolescence of scientific instrumentation at the universities. He quoted an estimate that at least \$1 billion and perhaps as much as \$4 billion would be needed to modernize university instrumentation. More recently, at the AIP Corporate Associates Meeting, John Crowley of the Association of American Universities identified an even larger problem—the obsolescence of the research facilities themselves. In a survey of 15 universities, AAU found that a total of \$0.75 billion would be needed to put the research facilities of these universities alone back into acceptable condition. The price tag needed to rehabilitate or replace outdated facilities at *all* universities could then easily run in the neighborhood of \$15–20 billion.

Scientific manpower is another area requiring capital investment equal in priority to the need to modernize instrumentation and rehabilitate facilities. Funds are needed to bolster undergraduate instruction in science and engineering and to improve graduate-student support and the development of young faculty careers.

Although funds on the order of \$20 billion for capital renewal might seem out of the question in this era of high deficits, the Federal government is now providing \$7 billion every year in operating costs for basic research. To reap the full benefits to the nation from this research expenditure, we have no choice but to raise the funds needed to rehabilitate our research facilities.

Although some funds have been included in the FY 1983 and FY 1984 Federal research outlays for the specific purpose of modernizing equipment, it is clear that a new, comprehensive strategy for capital investment is needed. This is the conclusion reached by Senators John Danforth (R.-Mo.) and Thomas Eagleton (D.-Mo.), who have proposed such a strategy in the form of a bill, S 1537, the University Research Capacity Restoration Act of 1983. The bill proposes a \$1 billion increase annually for a five-year period to be spent on capital improvements (including manpower development). The money would be distributed through the six agencies that provide 95% of Federal support for university research (NIH, NSF, DOD, DOE, NASA and USDA). The total of \$5 billion would obviously not solve the whole problem; nevertheless, it would put the Federal government in its proper leadership role. The money the bill targets for facility rehabilitation, for instance, would be provided on a matching basis.

Danforth and Eagleton do not expect their bill to become law; rather they regard it as "a blueprint for a course of action to be achieved through separate amendments to the authorization and appropriation bills for the six agencies involved." They have been working to recruit a broad bipartisan support from their colleagues for the goals embodied in their bill, and they have already met with encouraging success.

Their efforts deserve the strong support of the physics community. In particular, each of us as individuals should discuss with our Senator and Congressman the importance of S 1537 and the need to support its goals.

Harold L. Davis