

Threat to scientific unity

As the most fundamental of the natural sciences, physics underlies and—in the face of increasing specialization—unifies much of science. It is appropriate that physicists should be particularly sensitive to threats to that unity. The current federal budget exercise represents such a threat.

I am convinced that the great majority of physicists—and of American citizens—are entirely sympathetic to and supportive of President Reagan's goal of turning around our economy. Indeed this is long overdue. But it is possible to support the broad goals of this Administration without agreeing with all the components of its program.

Physics in FY1982, and beyond, clearly has problems; funding for many areas is well below what had been anticipated and no new construction has been approved in a field uniquely dependent upon such long-term investments. But physics, the physical sciences, mathematics and engineering have been treated relatively well in this budget process, reflecting an Administration conviction that these areas can make particularly important contributions to economic regrowth, to innovation, to national defense, and to the national well-being. Few physicists would disagree.

In dramatic contrast, however, the social, economic and behavioral sciences are scheduled for brutal cuts in federal support in FY1982 and thereafter. From all indications, this different treatment reflects decisions made at levels well above the individual agencies.

It bears emphasis that in many of the most pressing national problem areas, the science and technology are largely in hand. Thus, for example, energy, environment, and health care delivery are widely seen as problems whose solutions can rely on existing physical science and technology. What we lack is adequate understanding of the social, behavioral and economic costs of different possible courses of action.

If we are to make progress in addressing these national problems, it is essential that we maintain support for excellence in *all* the sciences—social, behavioral and economic, as well as natural. It bears emphasis that these social, behavioral and economic sciences are creations of this country; we have set the style and pace in them, and we will turn our backs on them only at very considerable peril.

It would be easy for physicists to take a detached attitude here. We are apparently appreciated and understood while our colleagues in other areas are not. But what of next year?

It must be emphasized that none of us are arguing for support of activities that do not measure up to the

best standards of their field, whatever field it may be. But we do argue for support of excellence in *all* the sciences. We are all in this together and the time is long overdue for us to recognize this interdependence in a more tangible fashion.

It is important—this year in particular—for natural scientists to speak out in support of their social, behavioral and economic colleagues. Only by keeping all of our sciences strong can we hope to address our major national problems effectively, and only by working together can we hope to serve as effective partners in the search for national solutions.

There is yet another aspect of the current budget exercise that should be of particular concern to physicists. Science is the only truly international community, and physicists have always been at the forefront of international activity. Current budgetary forecasts in the National Science Foundation—the agency that has responsibility for much of US activity in the international community—would require massive curtailment of US participation in activities of the International Council of Scientific Unions, the International Union of Pure and Applied Physics, and a great many other international organizations.

At a time when our foreign colleagues, in many areas of physics, have been able to mount salients competitive with—if not, indeed, ahead of—our own, we can ill afford to shut our windows on the world.

I raise these matters because they are of special concern to all physicists. As citizens, and as physicists, expressing these concerns to our elected representatives could have an important impact on our future effectiveness, both within our own country and within the international scientific community.

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