PUT BASIC RESEARCH UNDER A SINGLE FEDERAL AGENCY

New crises in the Federal support of basic research have arisen with ever increasing frequency over the past few years. In late 1991 the Department of Energy's Office of Energy Research suggested future funding profiles for nuclear science and high energy that evoked strong negative responses from those communities. In mid-1992 the House of Representatives voted essentially to terminate funding for the SSC, an action that was ultimately reversed only after intense Congressional lobbying. More recently the National Science Foundation initiated a study to explore ways in which it might become involved in technology transfer to American industry. This possibility evoked fear and concern that such an initiative would come at the expense of basic research supported by the foundation.

The responses of the scientific community in all instances have emphasized the harm that would result but have not addressed the underlying issue of long-term Federal support for basic research in this country. The fact that the Department of Energy is the nation's leading sponsor of basic research in physics is an unplanned outcome of an evolution that originated with the development of nuclear energy and armaments programs after the Second World War. Today, the department's tasks in cleaning up the unattended problems of radioactive waste disposal command the bulk of its attention.

The nation's agency that is closest to having a primary focus on basic research is the National Science Foundation. Its present role has also evolved, from a beginning that emphasized the modest support of individual investigators. Although the demography and sociology of basic research have changed dramatically over the past 40 years, the NSF philosophy and mode of supporting research have not kept pace. The foundation's relatively modest annual budget does not permit the consideration of many worthwhile but costly programs.

Differing attitudes at the respective agencies have resulted in chaotic patterns of funding. When asked to consider the funding of basic research in particle physics using cosmic rays, DOE tends to respond with statements such as "Such work is not in our mission." Although the emphasis at DOE is on supporting structures such as national laboratories, it steadfastly refuses even to consider the possibility of constructing an asymmetric B factory at Cornell, on the grounds that such a facility is an NSF responsibility. The NSF, in response, tends to iterate that "big science" is not in its tradition.

Probably the fundamental problem in Federal funding is in developing priorities. The Federal funding of research and development is in excess of $80 billion, almost all of which is for Defense Department weapons programs. The SDI component alone exceeds the NSF's total budget by about a factor of two.

With a world that has been undergoing dramatic changes during the past several years, reexamination of past practices is in order. Specifically, the time is at hand to restructure the nation's Federally funded research and development programs to reflect today's needs and opportunities. If a more stable and enlightened approach to the support of long-term basic research in this country is to emerge, thought and discussion need to be given to the development of a Federal agency whose focus and first priority are the health of basic research in this country. Deferring addressing this issue will only result in regular recurrences of the disruptive actions of the past few years.

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How Close Was Iraq to Having the Bomb?

I was disturbed by the material in boldfaced type just below the title of