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EDITORIAL

A Changing Climate for Scientific Research

A confluence of factors has led to unusual uncertainty concerning support of scientific research. These factors include end of the Cold War, global economic competition, federal and state budget deficits, loss of faith in basic research as a key to prosperity, and diminished public esteem for academic research. The latter is due to publicity about fraud in science and a few instances of faulty bookkeeping of grant overhead charges.

The end of the Cold War, by diminishing funding in the defense industry, is causing major federal laboratories to scramble for support by undertaking civilian R&D. In response to the recession and global competition, many companies have engaged in "restructuring." This has often included a curtailment of efforts in basic research. Federal and state budgetary deficits, combined with diminished faith in basic research as the key to prosperity, have attenuated congressional enthusiasm for support of peer-reviewed research grants.

A significant recent development involves the Committee on Science, Space, and Technology of the House of Representatives. The committee's membership totals 53. George Brown, Jr., its chairman, has seniority and influence and is one of the few members having a degree in science. He has long been an advocate of federal support for basic research. That his position has evolved is evident in his favorable comments about a report* on the health of research prepared for him by the committee's staff. Some quotes from the report follow: "Research policy designed forty years ago may no longer be suitable..."; "...maintaining the world's preeminent (and most expensive) federal research system is not, in and of itself, adequate to insure economic vitality"; and "To create a more rigorous and socially-responsive science policy, a necessary first step is to define goals toward which the research should be expected to contribute."

Evolution of attitudes by others in Congress is evidenced by a huge expansion in non-peer-reviewed, pork-barrel facility legislation. A provision in the Senate bill for funding National Science Foundation (NSF) would have drastically modified its status and would in effect have placed NSF under senatorial micromanagement. Through intervention of George Brown and colleagues the onerous provisions were deleted in the House-Senate conference. Scuttlebutt has it that the current flurry of policy-review activities at NSF is a measure to create a line of defense in the 1994 congressional budget hearings. The NSF policy-makers should be steadfast in defending basic research. If they do so, they will be joined by influential allies in academia and industry.

For the foreseeable future, federal support of scientific research is likely to be conditioned by relevance to societal goals, with Congress having a major role in specifying the goals. Obviously one of these should be to maintain a viable academic capability to produce first-class scientists and engineers. They will be essential as problem-solvers in an unpredictable and dangerous future. Another goal should be to support highly competent investigators. Some function best as members of a team working toward a major objective. But others perform even more magnificently when permitted to follow the dictates of their own intuition and judgment.

As directors of research, congressmen in general have obvious limitations. In addition, they have a short time horizon—usually a few months to no more than 2 years. They are greatly influenced by the media, whose time horizon is even shorter—days to weeks. Many of the great problems that the world will encounter are long term (10 to 50 years). The R&D necessary to facilitate solutions for such problems also often will require steady support for a decade or more. There is need for a mechanism to help politicians to choose to provide steady support for important long-term goals.

A recent report† by a panel of the Carnegie Commission recognizes the need for such a mechanism and names 12 major long-term policy areas that should be part of a national agenda. Included are health and social welfare, economic performance, and energy supply and utilization. The report proposes creation of a long-lasting, nongovernmental forum that would interact with the political system. The membership in the forum would include a "broad based and diverse group of individuals who are critical and innovative who can examine societal goals and the ways in which science and technology can best contribute to their achievement."

Philip H. Abelson

*"Report of the task force on the health of research to the Committee on Science, Space, and Technology" (102nd Congress, 2nd session, Government Printing Office, Washington, DC, 1992) †"Enabling the future. Linking science and technology to societal goals" (Carnegie Commission on Science, Technology, and Government, New York, September 1992).