

Commission Sees NSF's Future in Its Past

A panel of science and business leaders added a powerful voice last week to a debate that has been raging since early summer over what role the National Science Foundation (NSF) should play in helping achieve national goals such as improving economic competitiveness. The voice, belonging to the Commission on the Future of the National Science Foundation, spoke through an eagerly awaited report, issued on 20 November.* But, like an oracle, it seemed to say different things to different people. NSF director Walter Massey detected a call for change: "The commission has provided a significant input to...our efforts to build on our strengths and pursue new and challenging opportunities," he said. But one well-placed congressional aide got a very different message: "There's no suggestion that [the commission] has any interest in increasing the scope of NSF's activities to pursue new opportunities."

In a sense, both are right. The commission, cochaired by William Danforth, chancellor of Washington University, and Robert Galvin, chairman of Motorola Inc., strongly argued that the foundation should continue to concentrate on its core activities: support of basic research and science education. And it warned that shifting NSF's focus from these activities "would have little or no effect on the U.S. economic position in the near term, but would severely restrict prospects for the long term." The commission didn't just preach business as usual, however: It argued for more attention to interdisciplinary research, a stronger role for industry in shaping NSF's programs, and a more prominent place for the National Science Board—NSF's policy-making body—in developing a national policy for science and technology.

None of this would be in the least bit controversial if it were not for the highly charged atmosphere in which the commission's report was developed. The voltage was raised in July when the Senate Appropriations Committee set minimum funding levels for the foundation's support of manufacturing science and technology, high-speed computing, and interdisciplinary research on the environment, and told NSF to cater more to the needs of industry. Massey stepped up the charge in August with a memo to the National Science Board in which he advocated "an expanded portfolio of programs that would be integrated with ongoing activities and closely aligned with industry and other

government agencies." That set sparks flying among NSF's academic clients, who worried that these new programs would come at the expense of support for investigator-initiated basic research. At that point, the board decided it was time to appoint a commission to take a look at NSF's future.



Cochairmen. Robert Galvin (above) and William Danforth.

The commission was given just 90 days to complete its work. It held three public meetings and canvassed views from the academic community, unleashing a flood of letters (*Science*, 6 November, p. 880). "The vast majority [of the letter-writers] did not want to see NSF in any way decrease its support for basic research, or investigator-initiated research, or the selection of research by merit review," says Danforth. "The report is in line with that vast majority." The report states, for example, that one of NSF's prime goals "is to support first-rate research at many points on the frontiers of knowledge, identified and defined by the best researchers."

As for NSF's role in enhancing industrial competitiveness, the commission, noting that the foundation accounts for a mere 3% of the federal government's R&D spending, warns against expecting too much. Indeed, it questions the very premise behind the argument for more direct involvement by NSF in industrial research: "Failures in the marketplace have not been the result of slow transfer of academic science to industry.... All manner of other more prominent factors, including the stewardship by American business, far outweigh whatever could be traced to the

technology itself or the technologists." It adds that "the universities and NSF should complement rather than replace the roles of those engaged in technology development." Commission member John Armstrong, vice president for science and technology at IBM, bluntly spelled out the implications of those statements when the report was presented to the National Science Board: Changes are needed in NSF, he said, but "saving industry is not one of them."

The report is therefore likely to be widely read as a rebuff to Massey's suggestion that NSF broaden its scope to include more activities of direct relevance to industry. "This is not going to satisfy people who think NSF should be a National Science and Technology Foundation," says one Senate staff member who has been following the debate closely.

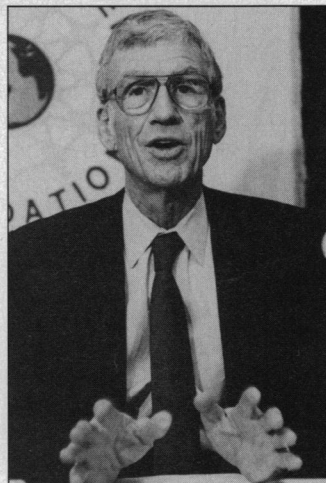
But neither is the report likely to satisfy those who argue that NSF's research portfolio should be determined solely by whatever scientists themselves think are the hottest fields. "In accepting society's support, the scientific community naturally assumes an obligation to be...responsive to national needs voiced by society," the report says. NSF should "develop a balanced allocation of resources in strategic research areas in response to sci-

entific opportunities to meet national goals." One way to achieve this is to "involve the private sector more fully than heretofore in the decisions which affect the classes of research allocation as well as some evaluation of the effectiveness of research expenditures," the report says.

Although the report was commissioned by the National Science Board, its most important targets are the chief advocates for change at NSF: Congress and Massey. In the final version of NSF's 1993 budget bill, approved in early fall,

the appropriations committees said they support a "reallocation of expenditures to strengthen certain priority areas: process research and development; engineering research; emerging and precompetitive technologies; and fundamental research with ties to future industrial interests." But they held off ordering Massey to spend more on such activities until after the commission's report was completed. Massey has until 15 December to send NSF's 1993 operating plan to Capitol Hill, and the appropriations committees have said they expect the plan to reflect their concerns. Massey would only say last week that the commission's report "will be helpful to us in trying to work with Congress."

—Colin Norman



PHOTOS BY RICK KOZAK