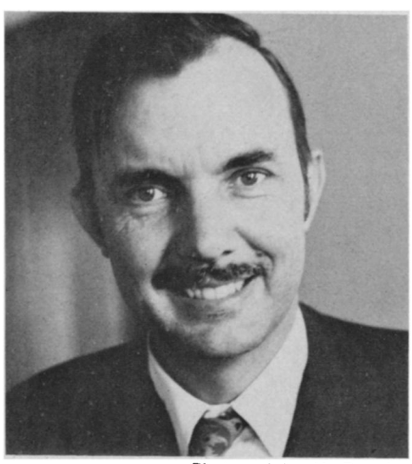
Science policy in the U.S.: A time of transition

The demise of the White House Office of Science and Technology was initially interpreted as a downgrading of science in the Federal hierarchy (SN: 2/3/73, p. 70). The duties of Presidential science adviser fell on the already overburdened shoulders of the National Science Foundation director, H. Guyford Stever, but more direct access to the President seemed open to a shadowy, unofficial group of loyalist scientists led by William O. Baker of Bell Telephone Laboratories (SN: 7/28/73, p. 53). Out of the welter of this courtly by-play is finally emerging a semblence of national science policy; it holds little good news for advocates of pure research or environmentalism.

Stever's "attendance record" with the President is not improving, he told SCIENCE NEWS. The "science adviser," in fact, almost never meets his principle advisee. He does, however, meet with Baker, and said the latter has supported him in what he was trying to do. Stever describes his goal as an attempt to "convince people that basic science is part of the whole structure" of technological development; that so-called "applied science" cannot really exist without it.

But the rush of events has largely precluded such a balanced national approach to research. The energy crisis, in particular, will demand the most immediately practical kind of applied research and may cause the nation to give up some of the progress made in cleaning up the environment. "We might have gone about things a bit more sensibly if the two problems (energy and environmental crises) hadn't come together," Stever says. However, environmental research must continue, and Stever specifically disagrees with the view of Baker, expressed earlier to SCIENCE NEWS, that the Environmental Protection Agency's laboratory facilities should be taken out of that agency. "I personally think EPA needs some research capability," says Stever.



Photos: John H. Douglas

Branscomb: Dismay over defeatists.

Stever: A shift to applied sciences.

David: Harmful loss of credibility.

At a seminar sponsored by the New York Academy of Sciences and the Council for the Advancement of Science Writing, Stever elaborated on the problems facing pure science. "Every major 'voice of science' is getting supported," he claimed; but "pure" scientists can expect some hard times ahead. Funding requests will increasingly pass through the scrutiny of "technology assessment" to see if the knowledge gained can be useful at a later time. The emphasis in applied science will also shift from the "straightforward applications" of new discoveries to military and space programs, to the broader, less defined areas of social needs, such as transportation improvement. The danger, he concluded, is that the country will not recognize the dependence of applied science on pure research.

Speaking at the same New York seminar, the last head of OST, Edward E. David Jr., called the declining influence of science on public affairs "a very dangerous change." Scientists, he said, have too often abandoned their objectivity in order to advocate a cause, resulting in a loss of credibility. Congressional cynics maintain they can find an "expert" to testify on any side of any question. "The market for expert advice is down," David concluded, "because credibility is low." He blamed a disenchantment of youth with science on the same cause.

Already the transitions in national science policy have begun to take their toll of morale in the academic science community. Lewis M. Branscomb, a past director of the National Bureau of Standards and now IBM vice president for research, says he is "dismayed" by the "defeatist attitude" he sees among university scientists. In his view industry has outrun the universities in adapting to policy shifts favoring applied research. But he warns against an overemphasis on pragmatism that could "kill science and get useless technology." Industrial progress depends on discoveries made in basic science on university campuses and the public does not yet understand that technology "cannot be pushed, but rather has to be pulled by scientific research," says Branscomb.

Branscomb, Stever and David suggest that the worst of the funding crunch might be over. "Society cannot avoid for very long facing reality, and science is the expression of that reality," says Branscomb, citing an increasing need for expertise in many areas. Chemistry and engineering, in particular, will require more manpower, according to Stever, and beyond the energy mess, he sees other crises developing in a rush for strategic materials, demand for more plentiful agricultural products and the need for better delivery of health care. Even Watergate may help, according to David, who has formulated a theory of "the conservation of influence": As politicians become discredited the cry for professionalism will rise, benefiting scientific "experts" who are able to separate advocacy from objectivity.

But science in the United States is not yet out of the hole. The most insidious danger, the speakers warned, could be the disenchantment of youth and the turning away of the brightest students from careers in science. Scientific progress, Branscomb says, rises only linearly with money but exponentially with talent. "Brilliant people really do accomplish 100 times more than mediocre people," he said. Disenchantment, too, probably goes only linearly with funding, and much of the lost morale among scientists and science students comes from a perceived downgrading of their discipline at the national level. Returning the formulation of science policy to public view, away from secluded machinations more appropriate to a medieval French court, might help. □