

about creationism and the "human life bill" that is now being debated in Congress. On the former, Keyworth says simply, "Creationism is not a scientific theory but one based on faith." Ducking any statement about the political implications of that view, he said only, "Whether it should be taught in the

schools is a question beyond the scope of this office." Likewise on human life, "The question of just when life begins is a moral, not a scientific issue," he affirms.

Still regarded as very much an outsider by the science policy establishment, which is used to knowing the scientist in the White House before he comes to

Washington, Keyworth is devoting hours to meetings and dinners that will remedy this perceived deficiency. In this regard, it is worth noting that, in 1980, that very establishment included him in its ranks when he was elected to the Cosmos Club. That ought to count for something.—BARBARA J. CULLITON

Reagan Officials Discuss Science Budget

But they avoid answering questions about some controversial cuts in education, social sciences, and international programs

The broad themes of the Reagan Administration science budget were explained at the recent AAAS colloquium on federally funded research. Murray Weidenbaum, chairman of the Council of Economic Advisers, told an audience of several hundred scientists from government, industry, and academia that basic and applied research efforts will continue to receive the Administration's support in future years, but that a sharp line will be drawn at funds for commercial development of new inventions.

"Commercialization can best be done commercially," Weidenbaum said. He said he thought industry should assume a greater responsibility for research and development in the future, and noted that the federal share of R & D spending has dropped from 56 percent in 1972 to 47 percent in 1981, while industry's contribution has risen from 41 percent to 49 percent. "That is a trend that I and my colleagues in the White House would like to see continued," he said.

Weidenbaum and Glenn Schleede, associate director of the Office of Management and Budget, also explained how the scientific community might benefit from portions of the Administration's recent tax proposal. The bill, which is still under debate in Congress, would permit accelerated depreciation of equipment used in research and development, and would also allow a tax credit for firms that hire more scientists than are now employed. Schleede also noted that scientists will share in the economic benefits from a lower rate of inflation, magnifying the effects of the small budget increases for a few areas of research.

At one point, Weidenbaum declared that "good budgeting is a uniform distribution of dissatisfaction." Evidence that the policy had met with success was plentiful at the colloquium, where re-

searchers queued in long lines at a microphone to assail the Administration for some of its budgetary cuts.

The Washington audience was clearly concerned about the Administration's plans to cut \$100 million from the education, social sciences, and international budgets of the National Science Foundation and other agencies during fiscal year 1982. Scientists from several fields made forceful arguments about the contribution of education to the nation's future productivity, and about the importance of maintaining ties with researchers outside the United States. "Someone has described the cutbacks in economic research and development as vindictive, arrogant, and ignorant. Would you care

lower priority than continued funding for basic research in the physical sciences," which will receive a modest budget increase. Both officials said that the need to prepare the budget in haste after Reagan's inauguration had limited discussion. Michael Telsin, an aide to Representative Jim Jones (D-Okla.), chairman of the budget committee, told the scientists that in his view political priorities—and not principled decision-making—were behind the science cuts.

Several in the audience were skeptical about the importance of the Administration's tax proposals. Robert Shriner, director of Washington operations for Chase Econometric, says that interest rates have more influence on private

"Good budgeting is a uniform distribution of dissatisfaction," said Murray Weidenbaum, chairman of the Council of Economic Advisers.

to comment on that?" an economist asked Weidenbaum. He smiled and replied that the cuts were neither arrogant nor vindictive, and said he had not been involved in the decision. He also said he is doing nothing to discourage his professional colleagues from writing their congressmen.

For many in the audience, it was the first opportunity to voice their discontent. For the officials, it was an opportunity to see the depth of the research community's concern.

Both Weidenbaum and Schleede avoided saying exactly why the cuts were made, and at whose specific direction. Schleede remarked simply that "it was the judgment that these were of

spending for research than taxes do, and that as long as interest rates remain high, research will remain an unattractive investment. Several scientists noted that in any event the President's tax credit proposal will not be available to firms that hire social scientists and behavioral researchers, and thus it does nothing to mitigate the impact on that group of the budget curtailment.

No one was cheered by the prediction of Elmer Staats, former controller general of the United States, that fiscal pressures on scientific research will only increase in coming years. Staats noted that the Administration intends to continue its buildup of defense and sustain the reduction in taxes, while also striving

to balance the overall federal budget in 1984. Willis Shapley, author of a AAAS study of the science budget,* said, "We have to face the fact that there will be pain around."

During an afternoon session, Richard DeLauer, the under secretary of defense for research and engineering, outlined in broad fashion some of the major research efforts under way at the Pentagon, which include major research on the MX missile and a new strategic bomber; efforts to improve WIMEX, the military's worldwide computer network; and changes at the Advanced Research Projects Agency to make sure that its work is more closely tied to the

*Willis H. Shapley, Albert Teich, Gail Breslow, *Research and Development AAAS Report VI* (AAAS, Washington, D.C., 1981).

needs of the individual military services.

There is obviously a good deal of interest in the Administration's plans to move research funds from the civilian sector to defense. Shapley raises a concern in his book that "the defense budget, instead of being simply a means for achieving substantive defense objectives at least cost, has taken on a life of its own and become an end in itself. . . . Fully responsible judgments on the size of the Department of Defense budget for R & D or its major constituent parts demand an understanding of the program that is both comprehensive and detailed. . . . To acquire this is frustratingly difficult, and perhaps impossible, for anyone except those actively engaged in central management or review of the program."

Still, George Riedel, a staff member on the Senate Arms Services Committee, provided a summary of defense procurement plans and problems. He questions whether the Administration's goals for defense can be met within the estimated costs, noting that the Navy's plans to organize a fleet of 600 ships could cost as much as \$25 billion a year over the next decade, and that the Air Force's new bombers might cost an additional \$25 billion during that period.

George Rathjens of MIT, a longtime adviser to the government on defense, offered a critique of the Reagan plans, but in general the plans ignited far less debate than the \$100 million cutback for programs in education, social sciences, and international budgets.

—R. JEFFREY SMITH

Court Upholds Controversial Regulations

But the Administration's regulatory reforms can continue

The Reagan Administration has considerable leeway to continue deregulating the workplace and the mining industry, despite three recent Supreme Court decisions upholding stringent mining and occupational health rules. The decisions—resulting from disputes on cotton dust, lead, and strip-mining—have been widely interpreted as inimical to the Administration's plans, but close examination reveals that they will have little if any adverse effect.

The decisions are similar because in each one the Court upheld stringent health and environmental requirements in the face of evidence that they would be costly to the affected industries. The requirements were imposed during the early days of the Carter Administration, when there was a general reluctance to consider these costs, or certainly to consider them important. The Reagan Administration has reversed this position, and is taking steps to ease many environmental and health rules. So-called cost-benefit analysis has been embraced with patriotic fervor at the Office of Management and Budget, and agencies such as the Occupational Safety and Health Administration (OSHA) have been ordered to conduct such comparisons and scrupulously abide by the results.

The Supreme Court, in the cotton dust

decision on 17 June, says explicitly that OSHA must ignore the results of any cost-benefit comparison when setting a standard for worker exposure to a hazardous substance. Justice William Brennan, writing for the court's five-person majority, said that "Congress *itself* decided the basic relationship between costs and benefits by placing the 'benefit' of the worker's health above all other considerations" when it wrote the law in 1970. Yet the agency cannot require exposure controls that are impossible to achieve, nor can it bankrupt an entire industry, Brennan wrote. He concluded that consideration of anything besides

these questions would be inconsistent with Congress's direction.

The opinion settles a long-standing grudge between unions and industry. Byssinosis, or brown lung disease, is one of those that the OSHA law was passed to prevent, and the agency had labored for years before fixing the exposure standard in 1978. The opinion also repudiates an attempt by Thorne Auchter, OSHA's current administrator, to withdraw the standard and submit it to the cost-benefit analysis that the previous administrators had scorned. Auchter had specifically asked the Court not to rule on cotton

(Continued on page 188)

Cotton dust decision

Settles grudge between unions and industry



Earl Dotter/American Labor