lishment generation do this? If so, how could such a policy be instituted? These are questions that scientists, no less than others, should seriously consider.

References and Notes

1. The term "youth activism" is used in a general and somewhat ambiguous way to refer to demonstrations of a variety of kinds that were carried out primarily by college and university students, but not always at an educational institution. For example, the march-for-peace demonstration in Washington, D.C., in 1962 is regarded as an instance of youth activism. Most (but not all) of these demonstrators were students, but their protests were not directed at their colleges or universities. In contrast, the "flower children" demonstrations in California in 1967 and 1968 are not treated as instances of youth activism. We have no systematic studies of the people who took part in these demonstrations: it is believed that most of them were not students. For reasons that will become clearer as we go along, the activism represented by the hippie movement is contrasted—rather than identified—with the youth activism that is the principal focus of this article.
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44. We thank Peter Benson and one of the referees who reviewed this article for *Science* for suggestions and criticisms. To a considerable extent this article is based upon work done in a seminar on the psychology of student activism, which was given by J.L.H. at Casper College, Casper, Wyo.

NEWS AND COMMENT

Unemployment: What Nixon Is/Isn't Doing to Help Jobless Scientists

The plight of some 60,000 unemployed scientists and engineers received high-level attention in Washington last week, but there was no indication that the Nixon Administration intends to launch a major program to put the jobless professionals back to work.

Top federal officials held a day-long working conference on 3 March with leaders from professional societies, industry, and the universities to discuss plans for alleviating the unemployment crisis caused by cutbacks in the aerospace and defense industries. The only new announcement made at the meeting was that the Departments of Housing and Urban Development and of Labor will conduct a $1.2-million pilot program to put some 400 to 600 unemployed scientists and technicians to work on urban problems. If the program is successful, it will be expanded to serve upward of 2000 persons.

President Nixon himself was scheduled at one point to drop in on the conference, but this manifestation of high-level concern fell through at the last minute. Nevertheless, there were enough top administrators on hand to satisfy most participants. The conference was chaired by Edward E. David, Jr., the President's science adviser, and it was opened by Secretary of Labor James Hodgson. Late in the afternoon David and another key participant—Malcolm J. Lovell, Jr., assistant secretary of labor for manpower—were whisked over to the White House to summarize the thrust of the conference at the daily 4 p.m. briefing for White House correspondents. Judging by the lack of coverage accorded the matter in some of the nation's top papers, the press corps was not greatly excited by the story. But David sought to underline the Administration's de-

sire to help alleviate the misery of unemployed Ph.D.'s by announcing: "The meeting was called at the initiative of the President, who is very much concerned about unemployment generally, but also about unemployment among scientists and engineers."

The conference was billed as an "informational" effort to make the scientific and engineering communities more aware of federal employment programs that are already under way or are in the planning stages. One of the key points that became apparent as the conference wore on was that the Administration does not propose to provide emergency "handouts" (beyond the normal unemployment compensation program) earmarked specially for unemployed scientists and engineers. Nor, according to some participants at the closed sessions, does the Administration plan to put much "pump priming" money into the economy in an effort to encourage private or public employers that don't now use many scientists or engineers to expand their research and development efforts. Instead, the government's effort will center on disseminating job information, counseling unemployed professionals on how to find a job, and funding various demonstration training programs aimed at converting the unemployed professionals to new careers. As Lovell expressed it in a speech prepared for the conference: "Providing engineers and scientists with solid information about job opportunities, job requirements, job locations, and job trends—where the action is—is the most important thing that we can do for them in the long run. Because, in the final analysis, these are educated and intelligent men who can take care of themselves once they have the facts to work with."

Figures were presented to the conference indicating that unemployment in the technical communities has grown rapidly worse, but that the numbers involved are still very small compared with the nationwide unemployment problem. Lovell said the unemployment rate for engineers increased from less than 1 percent in November 1969 to more than 2.5 percent in November 1970—a period when overall unemployment jumped from 3.5 to 5.8 percent. He estimated that some 50,000 to 65,000 engineers, scientists, and technicians who formerly worked in defense and aerospace jobs are now out of work—a relatively small slice of the approximately 5 million people from all occupations who are currently jobless. The chief problems, Lovell said, seem to be located in about 12 areas where defense and aerospace engineers have been displaced—namely, Seattle; Los Angeles and Orange Counties in California; Long Island, N.Y.; Wichita; Cape Kennedy; Huntsville; St. Louis; Boston; Atlanta; Philadelphia; and Dallas.

The chief causes of unemployment among scientists and engineers are fairly well known. As Labor Secretary Hodgson put it: "Defense and space spending has declined as the nation reorders its priorities. . . . Colleges and universities, caught in an economic squeeze, have slowed down on hiring faculty members—or have sometimes reduced their staffs. And all this has happened at a time of economic slowdown that has affected employment in all sectors of the economy." The particularly devastating effect of the defense cutbacks associated with the alleged winding down of the Vietnam war was described by Barry J. Shillito, assistant secretary of defense for installations and logistics. Shillito said that between June 1968 and December 1970 the number of jobs directly attributable to defense dollars decreased by 1.9 million and the number of civilian "support jobs" dropped by 1.6 million, for a total decrease of 3.5 million. Since the increase in unemployment for the nation as a whole was only 2.1 million, he said, this gives "a significant indication of the impact that defense expenditures have on the labor market."

Administration Remedies

What's being done to alleviate the problem? According to Science Adviser David, in remarks made at the press conference and in a recent speech, the Administration is trying to provide placement and retraining services; it is "trying to cut back on the rate of increase of the pool of scientists and engineers;" it is trying to increase the rate at which activity is shifted from defense and aerospace to civilian problems; and "most important of all, we are putting a good deal of additional funds into the R & D efforts of the country in FY '72 so that the base of R & D activities will expand. We think that is the most fundamentally best way to cure this problem."

Much of the conference was devoted to description of specific federal programs aimed at finding jobs for, and sometimes retraining, unemployed scientists and engineers. The Labor Department reported that there are already a number of job openings available if the right candidates can be matched up with them. As of 31 January, Lovell said, state employment agencies reported 5023 unfilled openings in scientific and engineering occupations—hardly enough to satisfy the total demand for jobs, but still a significant chunk. In an effort to help displaced professionals find work, the Department of Labor has set up a National Registry for Scientists and Engineers (in cooperation with the National Society of Professional Engineers and the State of California Human Resources Development Agency) to provide a central clearinghouse for applications and job openings. The Labor Department, in cooperation with the American Institute of Aeronautics and Astronautics, is also supporting workshops in 34 cities which provide counseling in job search methods and information on job opportunities. And the Department, in cooperation with state employment services, has established "job banks" in 60 areas of the country which provide daily computerized listings of job opportunities. Information on these, and other government programs aimed at assisting jobless scientists and engineers, can be obtained by writing to the nearest local office of the state employment service or to various professional societies. Still, even federal officials acknowledge that their efforts are "not nearly enough." As Lovell expressed it at the press conference: "I think one of the problems we face, frankly, is that nobody really does have any foolproof, sound ideas." However, he added hopefully that, "We have probably reached a point where the layoffs of engineers and scientists are about ended in terms of the defense and space effort. So we don't see the problem getting any worse."

The relatively small number of scientists and engineers who are out of work has raised questions as to why the federal government should do anything more to help them out than it is already doing for other groups. Reporters attending the press conference indicated they thought some aspects of the Administration's program to help scientists amounted almost to special class legislation. One reporter, for example, suggested that the new $1.2 million program to help scientists is "philosophically at odds" with President Nixon's drive to reduce categorical aid programs. (The very next day,

in fact, Nixon suggested that $2 billion be spent for manpower activities under his proposed new revenue-sharing plan in order to rescue manpower programs from "a thicket of narrow categories.") The answer the reporter got was that revenue-sharing is not yet here, so the Administration will continue to act in the meantime under a centralized system. Another reporter noted that there seemed to be a "job bank" for scientists and engineers and he wondered if there were any for "the ordinary working Joe." He was told there were not.

The reason for aiming special help at the scientists and engineers, according to federal officials, is that they are employable, in contrast to many of the unemployed; they have skills which should be put to use on crucial problems; they are unaccustomed to being out of work and hence don't know how to find a job; and their services will be badly needed in the coming decade. The Labor Department estimates that some 1.5 million engineers will be needed by 1980—a jump of 50 percent from today's level. Thus the existing talent must be put to work and additional talent must be attracted into the profession. As Lovell told the press conference: "We anticipate over the next decade a need of probably 70,000 to 80,000 scientists and engineers every year to meet the basic needs of the economy as it grows. We are producing currently at the rate of about 35,000 a year from college. So we are facing a shortage situation that would just be tragic if young kids start making career decisions on the basis of the current situation which is not a permanent situation."

That analysis, which was seconded by Labor Secretary Hodgson and Science Adviser David, raises the interesting question of why the Administration, if it really believes there will be a shortage of talent later in this decade, has nevertheless sharply cut back on the number of traineeships and fellowships for science and engineering students. The answer to that, according to David, is that the Administration has not cut back its support of students—it has simply changed the mechanism of support, from traineeships and fellowships to research grants. "We estimate that we will be supporting as many students, graduate students, next year through research assistantships, fellowships, and traineeships, and so forth as we were this year," David claimed, "even though we have shifted funds from traineeships and fellowships into research." David said it is "very appropriate that people go into the fields in which research is being done in universities—this is a way of steering them into the places, into the fields where there is important work to be done." The fields in which David expects a particular need for trained manpower to develop over the next decade include computers, health, educational planning and technology, and energy.

Some representatives of professional societies who attended the day-long conference said later that they were unhappy with the Administration's apparent unwillingness to spend much money to spur conversion of aerospace talents to domestic needs. Some of these professionals are no doubt pinning their hopes on legislation introduced in the Senate by Sen. Edward M. Kennedy (D–Mass.) and in the House by Rep. Robert N. Giaimo (D–Conn.) and Rep. John W. Davis (D–Ga.). The legislation would appropriate some $450 to $500 million over a 3-year period to finance retraining programs, provide grants to small businesses, fund research and planning of conversion programs, and establish nonprofit community corporations which would hire unemployed professionals and put them to work on domestic problems. Although similar legislation was bypassed in the closing rush of the last Congress, sponsors claim it has a much better chance of succeeding this year.

—PHILIP M. BOFFEY

M.I.T.: Wiesner to Succeed Johnson in Presidency, Office Restructured

In electing Jerome B. Wiesner as its 13th president, M.I.T. has chosen a man who is preeminently an insider. Wiesner moves up the final rung to the presidency from the office of provost after an association with M.I.T. which dates back to World War II. And in the world beyond Cambridge Wiesner, who was President Kennedy's science adviser, has figured prominently in the group of university scientists that has influenced science policy and science politics for more than two decades.

Wiesner, 55, will succeed Howard W. Johnson, who has served as M.I.T.'s president since 1966. Johnson and Wiesner were generally regarded as an effective partnership in dealing with a succession of student protests in recent years in a style described by one faculty member as "conciliatory but firm."

Simultaneously with the announcement of Wiesner's election came word of the selection of Paul E. Gray to a revived M.I.T. chancellorship. Gray has served as an associate provost and had recently been named dean of engineering. His role is described as deputy to the president, and creation of the post denotes a restructuring of the M.I.T. presidency to distribute the increasing burden of the office. Wiesner and Gray will take office on 1 July when Johnson will become chairman of the M.I.T. Corporation succeeding James R. Killian, who is retiring.

Wiesner's career provides the ingredients for an archetypal résumé of the publicly involved scientist-engineer of his generation. Born in Dearborn, Michigan, he won his bachelor's, master's, and doctor's degrees at the University of Michigan. At the beginning of World War II Wiesner joined the staff of the Radiation Laboratory at M.I.T. and occupied jobs of ascending responsibility in radar development work. In 1945 he went for a year to Los Alamos, and after the war he returned to M.I.T. to teach electrical engineering. By 1952 Wiesner was director of the Research Electronics Laboratory, successor to the Rad Lab and an important model both for interdisciplinary research and for university involvement in government-sponsored R & D work.

Wiesner's work in microwave theory established his professional reputation —he was elected to the National Academy of Sciences in 1960—and he was a founder of one of the high technology companies that were spun off from