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Sources for New Scientists

Government reports can be hazardous to one's wakefulness. Many seem to consist of mountains of glittering generalities, interrupted only by murky and distantly related statistics. The recent Office of Technology Assessment report on scientific manpower* is an exception. It has real numbers that relate directly to the words in the text. For those of us who heard warnings only a few years ago that the United States was overproducing scientists, the report causes instant alertness.

The long-term demographic trends described point to a shortage of scientists. The peak in the 18- to 23-year-old age group of approximately 30 million occurred in 1982; there are expected to be 24 million in that age group in 1995. This could lead to a 12 to 16 percent decrease in college enrollment. The problem will be compounded if, as many believe, the future need for scientists becomes more acute. Since women and minorities are underrepresented among practicing scientists, it would be both advantageous for those groups and prudent for the country to consider ways to increase not only the number of young people entering college but also the ratio of those choosing science as a career.

Two model programs are addressing the need to expose disadvantaged youths to careers in science. One is Project Seed, sponsored by the American Chemical Society. This program, admirably stripped of bureaucratic red tape, allows chemists around the country to receive approximately $750 for the hiring of a disadvantaged high school student for a 10-week laboratory job. More then 200 students took part in this program last year and that number is growing steadily as foundations and private donors provide additional funds. A National Science Foundation program in the division of biological sciences allows professors to receive small grant supplements for the same purpose. This project, too, requires a minimum of red tape: since the scientist is already accredited by having received an NSF grant, only a brief request containing minimal information is required for a stipend similar in size to that of Project Seed.

These programs should be expanded in other agencies and with other sources of funds. Government agencies could well follow the NSF formula; private groups could pattern programs on Project Seed. Let us scientists not wait, however, but lead the way with good programs without red tape.

The opportunity to give disadvantaged students exposure to science in a friendly environment can be effective at an early and formative stage in their lives. My participation in a local disadvantaged youth program once resulted in the challenge of devising an appropriate summer program for a junior high school student in a working biochemistry laboratory. Many tasks necessary in a laboratory designed for graduate students become boring, but can be a revelation for a junior high student. Our young co-worker toiled diligently beside us throughout the summer, and everyone in the laboratory enjoyed recalling past excitement as we saw old chores through his eyes. At summer's end the student said, "Now I understand why one should work to get good grades in high school." These words have affected my thinking ever since, because many students from disadvantaged homes do not realize the importance of academic performance until it is too late.

Those who want to contribute to the current efforts can contact Project Seed at the American Chemical Society or the National Science Foundation. Often local organizations provide similar opportunities. Also, professionals with experience in this area say that the head of a laboratory can simply phone a local high school, speak with the principal or a guidance counselor, and select an appropriate student, even in the absence of a formal sponsoring organization.

The NSF and ACS projects are not the only programs of intervention occurring, nor are they a substitute for improved instruction in the public school system, but—for simplicity and effectiveness—they deserve encouragement. They can be implemented almost instantly without the need to work through large supervisory machinery. In an era of emphasis on "more bang for the buck," the output in this case could be a very big bang for some very small bucks.—DANIEL E. KOSHLAND, JR.

*Office of Technology Assessment, "Demographic trends in the science and engineering work force" (OTA-TM-SET-35, Government Printing Office, Washington, DC, December 1985).