

Reports—Current Topics—Queries

Will Summer Science Training Programs Continue?

The National Science Foundation plans no support for student Summer Science Training Programs (SSTP) after the summer of 1971. This was the decision of the top echelon of the National Science Foundation, as stated by Lloyd C. Humphreys, assistant director (education), a presidential appointee. Should this decision remain unchanged, SSTP, which began in 1958, in the midst of the national scientific shortage after Sputnik, will come to a whimpering end.

The National Science Foundation has said that "by giving science-oriented high school students an experience with college level instruction in research [it] seeks to stimulate their scholarly development. . . ." In 1971, SSTP projects will be offered at over 100 colleges, universities, and research organizations throughout the United States. "A majority offer instruction in depth in one or more subjects such as biology, economics, mathematics, or physics. Others make the student, in effect, a junior member of a team actively engaged in scientific research under the direct supervision of a senior scientist. . . . Many projects combine these two approaches by offering both classroom work and involvement in research-type laboratory experiences," according to NSF. Participation in these programs is a boon eagerly sought by high school students throughout the land. The number of applicants exceeds, by many times, the more than 4,000 appointments available.

SSTP was created to identify talented individuals and win their commitment to a career in science and technology. Productivity of the program lies 10 years in the future. Certainly, it cannot contribute now to a scientific manpower excess, which is one of the reasons given for discontinuing the program.

The students selected are the cream of our nation's youth. Competition for enrollment is keen. Most programs operate for six to eight weeks in the summer and choose mostly students who have just completed their junior year in high school. These young men and women reside on university campuses and attend classes and work in laboratories in areas that are not duplicated in either the student's last year in high school or the first several years of college.

The impact of this experience on the student participant is enormous. For the first time, he sees other people who have exceptional talent. He discovers the real pleasure in academic accomplishment. He becomes committed to using his full talent. He has generally thought that he will seek a career in science; this idea is either strongly reinforced or else he discovers that he would really prefer a career

in a different discipline. This latter discovery is an obvious economic benefit both to himself and the nation, since he can start his college training in that area most appropriate to him, rather than falter halfway through his career, changing his major one or more times.

It is the nature of a democratic society that people are not completely programmed. Citizens who desire to undertake scientific careers must have these options open to them.

The influence of SSTP extends beyond the actual participants. Returning participants spread praises of their experiences in their high school classrooms and encourage their schoolmates to greater achievement and their science teachers to greater understanding.

SSTP has grown, through the years, from three pilot programs in 1958 to more than 100 today. Its growth has been encouraged by pulse-taking to inquire into the influence of SSTP on its participants and their fellow students. The impact of these programs has been found beneficial. Unquestionably, a more definitive and objective evaluation is required and, truly, should be undertaken before a decision on the fate of SSTP is taken, not after its demise. In any event, it is terribly unwise to commit this nation to a policy of deemphasizing the need for well-trained scientists. Our nation need not repeat, 10 years from now, the feeling of scientific inadequacy when Russia lofted its first Sputnik.

Continuation of SSTP requires an expenditure of less than \$2.5 million annually. It is a small investment for the bounty anticipated. SSTP can be continued if Congress were to mandate this support in the NSF budget for the forthcoming fiscal year (beginning July 1971). There is a precedent for this procedure. Some time ago, teacher institutes—the NSF programs that support advanced training for high school science teachers—were similarly threatened. Former science teachers, now congressmen, who had personally experienced the benefits of teacher institutes, prevailed upon Congress to place a mandate upon the National Science Foundation to devote more than \$20 million to upgrading and retraining science teachers. This mandate has been included in the NSF budget for the past several years. The continuation of SSTP by a similar mandate has the validity of prior practice.

The decision to eliminate SSTP was not made on the basis of true education or scientific criteria. It stems from a White House directive to cut back on funds and establish priorities in the National Science Foundation. The NSF higher echelon arrived at this decision without consulting the people administering these programs at NSF or those running SSTP pro-

grams throughout the United States. The decision is unrelated to the conduct of SSTP itself—a program that is widely approved and for which continuation is desired by the NSF staff. The White House and the top echelon of presidential appointees at NSF have rationalized a claim that SSTP leads to science manpower recruitment in a time of excess talent and unemployment in the field.

We have but to remember shortages of scientists and engineers in the 1930s and in the 1950s. A similar crisis might beset us in the 1980s. The present temporary manpower excess is directly related to the abrupt government cutback on space and defense development and production. Continuation of the program now does not seem likely to contribute to the present oversupply of professional manpower. It will, however, help assure the country of the existence of a talented and capable group 10 years from now. A technologic society requires that the best minds be drawn into these endeavors.

The House Committee on Science and Astronautics and the Senate Committee on Education and Labor are the committees that consider the NSF appropriation. These committees should be urged to mandate the continuance of SSTP. Congress, in all likelihood, will pass upon the appropriation bill for the National Science Foundation in June. Sympathetic congressmen have advised that a few letters to each congressman and senator will win majority support for SSTP and a mandate for its continuance.

Certainly, individuals requesting that SSTP continue are making a selfless request. They are not the individuals who will benefit directly from it in future years. This is an educational opportunity requested for others that can only serve to improve the quality of science and the understanding of the interrelationship of science technology and the community. Here is that rare case where government support is urged to help others.

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Beer-Can Project

Grandfather has spoken of yesterdays when a naturalist could walk six hours in the country without seeing a beer can and gaze into a stream unpolluted by trash. Shall such a setting reoccur?

If the involvement of your classes in relevant projects against pollution seems futile, perhaps an interclass aluminum-can contest would achieve some degree of success.

The Adolph Coors Co., Golden, Colo., and Lapeka, Inc., Topeka, Kan., pay 10¢ a pound for the cans. (It is rumored that the price shall increase to one cent per can in the near future.) A pound of Coors cans consists of approximately 20 cans. A few of the Coors warehouses will also accept aluminum ice cube trays and aluminum wrap. Beware of any aluminum “so labeled” can that has seams. Actual

aluminum cans do not have seams and are easily crushed with one hand. Most alloy cans are labeled “aluminum” on the lid to entice the consumer into thinking the whole can is homogenous; however, only the lid is aluminum. Coors will not purchase alloy cans.

A method that can be employed in the project is competition between one or more science classes. Voluntary class secretaries can post the daily results for each class. Perhaps the school paper would supply competitive publicity.

Project funds can be applied to funding for science equipment and supplies, support a school or charitable organization, or perhaps (best yet) contributions to the Wildlife Federation, Audubon Society, Sierra Club, etc.

In eight weeks, 119 general-biology students collected 411 pounds of aluminum cans. How well will your classes fare?

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Mealworms Galore

Teachers always need more mealworms. The demand at the University of British Columbia, Vancouver, has been met by Simon Messer, our chief technician. Remembering from his childhood days in Germany that mealworms seemed more plentiful in wooden containers than in other kinds, Messer designed rearing “drawers” made of plywood. Each drawer measures 15 by 85 by 75 cm and is fitted with a sliding lid. The lid has two 7.5-cm round holes covered with screen wire, for ventilation. The drawer



Mealworm drawers in use, showing storage arrangement.