lasers offer the surgeon the capability to destroy, with great efficiency and pinpoint accuracy, selected areas of diseased tissue in a patient's body. . . . Another anticipated use of these lasers is in long distance (e.g., interplanetary) communication. . . .

Many of the professors express complete agreement with the DDC statements of their project's applications, and some decline comment. Some praise their sponsors, and one, A. London, in mechanical engineering, comments simply, "What is good for technology is good for the Navy."

However, William E. Spicer, in electrical engineering, reacted violently to the DDC description of his work on amorphous semiconductors, which related them to "improved photocathodes" in "night viewing devices," with the following comment:

> The DDC statement . . . is a misstatement of the facts. As can clearly be seen from the proposal . . . absolutely no connection can be made between the studies being done here and "The ability of their materials to effect the emission of electrons through radiation which is a crucial function of the materials used as photocathodes in night viewing devices." Whoever wrote this statement was as ignorant of the work involved as he is of the use of the English language.

(Since the report's appearance, Spicer has reconsidered this position. He now maintains, in an addendum to the report, that the DDC statement was "garbled by the computer" and that it is only "very doubtful that our work will contribute to night vision.")

Another approach was taken by some professors who declined to make any connection between their work and the DDC statements of military relevance. George Herrmann has an Air Force grant titled "Dynamic behavior and stability of solids and structures." The DDC statement links the work, among other things, to "weapon delivery and reconnaissance. . . . Also knowledge of landing fields and silo interaction with missiles are of vital importance. . . ." However, Herrmann also remarks, among other comments, that

> As far as I know the justifications of the funding agency shift from year to year and are related to various missions. . . . My work is so fundamental and general that it is quite far removed from any type of immediate application, whether military or nonmilitary. . . .

Another professor, R. N. Bracewell, who performs radio astronomy work funded by the Air Force, says, among his general comments on the merits of advancing astronomy, the following:

> In my opinion, the Air Force does not know what applications my work may have. This opinion is based on conversations with contract monitors, on contracts written before the Mansfield Amendment, and on the performance of civilian panels advisory to military agencies supporting research in astronomy. . . .
>
> The funding agencies justify particular research projects in different ways according to the background of the inquirer, who may be a layman, a taxpayer, a scientific advisor, an Air Force general, a budget officer, and so on. . . .

The students also found discrepancies in the titles. One contract, carried out by P. G. Zimbardo in psychology, is "Individual and group variables influencing emotional arousal, violence, and behavior." But the DDC title suggested its military relevance: "Personnel technology factors influencing disruptive behavior among military trainees."

The report explains that the discrepencies are due to the Mansfield amendment, passed in 1969. Today, the amendment is worded differently and no longer in force as such. However, for a year, it did bar DOD from funding research that did not have a "direct and apparent relationship to a specific military function or operation." It forced DOD, early in 1970, to make a review of its sponsored research and terminate about $8 million in projects judged to be irrelevant. (This cut was small compared to the $64 million slash that Congress made in the DOD research budget that year.)

But the SWOPSI report found that "the Mansfield amendment . . . did not significantly affect the nature of the work being done at Stanford under DOD sponsorship." The report listed some projects that even the principal investigators said were more useful in the civilian than in the military sphere. For example, S. J. Kline, describing to SWOPSI uses for the Air Force of his work "Basic structure and stability of turbulent shear flows," "estimates the ratio of nonmilitary to military applications to be ten to one or greater."

The report also listed one study of Chinese politics and regionalization in a future, post-Mao period whose primary relevance to DOD's mission might be questioned. An Air Force

David Cultivates the Grass Roots

President Nixon's science adviser, Edward E. David, Jr., has been barnstorming the country off and on in recent weeks, conducting a round of briefings for scientists and engineers on federal science policy. The unpublicized colloquies, which have ranged from Washington to Boston to the West Coast, have given David a chance to deliver pep talks on the Administration's R & D budget to a wider cross section of the scientific community than ever before. And a free exchange of views during the briefings is said to have helped him "crystallize his understanding of the community's concerns."

John Lannan, a special assistant to David, said the main objective of the briefings is to sound out the views of scientists and engineers in preparation for the President's upcoming message to Congress on R & D. Lannan said the meetings, about a dozen of which have taken place so far, have been "extraordinarily helpful" in illuminating gaps in Administration policies.

Guest lists for the briefings have included leading lights from the major scientific societies, industrial laboratories, and colleges and universities. One group also included about 30 of the 51 state and territorial science advisers. The free-wheeling discussions have ranged from the problems of jobless scientists and retrenchment in industrial research to the difficulties of expanding the role of universities in civilian technology.

"There's nothing very complicated about these meetings," one White House aide said. "David is reaching out to his 'constituency.' They're getting essentially the same briefing, with the same charts, that the press got before the '73 budget was released."

Despite an obvious theatrical format, White House sources say that the meetings have enabled the Office of Science and Technology, which David heads, to reach beyond the established science advisory groups and to "make contact with a younger set of guys who haven't had much exposure to the Washington scene. They seem impressed that David is coming to them."—R.G.