

STANFORD UNIVERSITY
MEDICAL CENTER
PALO ALTO, CALIFORNIA

DEPARTMENT OF GENETICS
School of Medicine

January 24, 1961 ^DAvenport 1-1200
Cables STANMED

**Dr. Jerome Wiesner
Science Adviser to the President
The White House
Washington, D.C.**

Dear Doctor Wiesner:

May I first offer my congratulations for your recent appointment which will serve the country well. I also have to commend your recent task force report on the national space program which I hope will be translated into an even more energetic concentration on serious tasks by NASA. (In defense of many good people in NASA, I should also comment, privately, that some of the shortcomings in the present program might be traced to public and legislative pressure and the remedies will have to include a good measure of education on the ends and means of serious work in space.)

The main point of this letter is a thought about some implications of the seemingly indefinite duration of the cold war. Even its mitigation by some form of arms control is not likely to reduce the economic burden of global defense. Even more important, as PSAC itself could well illustrate, a large part of our creative scientific and engineering talent will continue to be preoccupied with defense. The commitment of this resource likewise, is unlikely to decrease. All of this, if evil, is doubtless necessary. But the context of our defense effort for the past decade has still been that of an acute diversion of our resources and we should be learning how best to accommodate it on a chronic basis, how to adapt to the necessity, perhaps even make a virtue of it.

If I may leap to a concrete proposal it is to add a new mission to the existing tasks of the military services as the basis on which we can afford to devote so much of our national income to the defense for the indefinite future. This mission is the systematic search for productive civilian applications as by products of military research and development and perhaps ultimately, production. Of course, this kind of by product development is going on all the time without the benefit of a specific policy and it is particularly operative in the AEC. However, I do not believe that there is any systematic mission for by product development in the Services. This mission could be properly accomplished only if there were a specific office in the DOD or in the respective services that was pointedly charged with this responsibility and had the authority to obtain the requisite information. I am not speaking to the desirability of military support of basic research which has been recognized as an indispensable program

COPY

STANFORD UNIVERSITY
MEDICAL CENTER
PALO ALTO, CALIFORNIA

DEPARTMENT OF GENETICS
School of Medicine

Dr. Wiesner, cont. 2

DAvenport 1-1200
Cables STANMED

January 24, 1961

In certain fields for some time. I am rather referring to the importance of the most economic exploitation of military research and development to help support its tremendous expenses over a long period of time. I believe that mission responsibility is the main thing needed to implement this program although it can be anticipated that the question may arise as to the economic pros and cons of declassifying some particular items sooner than might be desirable on strictly military grounds. In some instances, by product exploitation might entail some additional investment in military projects, but could be a way of getting a much larger total return. For example, the investment in the activities of the Biological Warfare Laboratories at Fort Detrick might be recaptured much more fully and promptly if these laboratories had an office specifically charged with looking for developments that would be useful in public health. I am confident that you would be able to recite many more explicit examples from your own experience.

While additional expenditures might sometimes be needed, the promulgation of a systematic by product-utilization policy itself might have useful returns. For example, the Services now engage many scientific consultants to bring civilian science to bear on specific military problems. These same consultants, if appropriately instructed, might most appropriately search out the possibilities of by product application since they would, in any event, have had to familiarize themselves with detailed military advances. The adoption of this principle may be expected to have a beneficial effect on the morale and also the inventiveness of military science.

The advantages to the civilian economy of exploiting defense by products may come, not merely from the huge overall scope of the defense effort, but also its justifiable history of gambling funds in a way that might be difficult to defend in the civilian economy.

These remarks are addressed primarily to the benefits of research and development but with some forethought the same considerations might apply to some aspects of military production. In place of the present shambles of "war surplus" distribution, we might plan for the obsolescence of some classes of military matériel with its assimilation to civilian uses.

In some instances, a dual purpose program might be justified by its total yield where it would not be if it had to depend uniquely on its military or civilian application. This is a tangent from the previous discussion but I would like to suggest that the support of vigorous development work on Automata would fall in this category. In the context of our need to greatly improve our resources for "limited warfare" the large scale extension of infantry power by "automatic soldiers" would add a new and (in fact, humanizing) dimension to our military policy. From all I have been able to learn, there has been only

COPY

STANFORD UNIVERSITY
MEDICAL CENTER
PALO ALTO, CALIFORNIA

DEPARTMENT OF GENETICS

School of Medicine

Dr. Wiesner, cont. 3

Davenport 1-1200

Cables STANMED

January 24, 1961

desultory interest in developing the sensory and motor components that can be visualized as the essentials of such a system. Even if the investment were an unsatisfactory gamble from a purely military standpoint, the economic yield should make it more plausible.

My chief concern in writing this letter is that the pursuit of its premises to a logical conclusion might be intolerable. It will be an important relevant task to work out a procedure whereby the extraction of by product returns does not entail the total involvement of the defense services with every aspect of our science, education, and economy. The ultimate subordination of the defense program as the means to protect our civilian interests rather than an end in itself is, and should continue to be, well established as part of our system and I would hope that by product development can be, in fact, implemented as an aspect of this policy.

Quite possibly the addition of this task to the service missions might appear to weaken their primary function. However, this extension may make it possible for us to afford the level of defense expenditure, by making it less wasteful, that we need for our own security.

Yours sincerely,

Joshua Lederberg
Professor of Genetics

COPY

STANFORD UNIVERSITY
MEDICAL CENTER
PALO ALTO, CALIFORNIA

DEPARTMENT OF GENETICS
School of Medicine

Dr. Wiesner, cont. 4

Davenport 1-1200
Cables STANMED

January 24, 1961

P.S. Some of our economist friends might be wary of the very success of such a program if it deprived us of an opportunity to drain off our "capitalistic surpluses." If it came to that we could always buy more space!

COPY