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THOUGHTS RESPONSIVE TO
"TWO CULTURES IN THE LABORATORY"

I will start off agreeing with the last paragraph of "Two Cultures." Under no circumstances should an academic scientist be subjected to pressure from administrators to select product-oriented problems. We can help avoid such situations by stipulating in institutional patent agreements that the institution's patent office must be removed administratively from the scientist and must have no connection with promotion committees or other committees that deal with a scientist's career.

On the other hand, awareness of the potential of patents on the part of the scientist who is described by Hans as spending a morning in ". . . developing an instrument or method so that he can apply it to a research problem in the afternoon . . ." may be helpful to the university and to him. A notable example occurred here when Sid Udenfriend developed the fluorospectrophotometer. I don't know if the instrument would have been developed by a commercial firm without an exclusive license. I do think that it benefited investigators in that field by having the instrument become available to them.

There are many crossovers between science and technology. As Hans points out, people in academe do both. Also, many of the projects that NIH supports are not basic research, but applied. Indeed, we are currently engaged in an exercise to try to classify "basic" and "applied" by asking

executive secretaries and study section members to put the projects they review into various classes, clinical vs. non-clinical, mechanism-oriented or treatment-oriented. We are trying to classify contractual projects similarly, including development.

Publications and patents are not antithetical. A paper can be submitted to a journal and a patent application can be filed at the same time. There is not much lost by doing both, except a little time. The patent advocates say that the patent is another method of disclosure of the results of research, and they claim that the patent, if properly administered, assures further effort in the development of an invention to practical use.

I am not so much interested in seeing that individual scientists are rewarded for inventions through patents as I am in providing additional funding for their institutions and, even more important, that the products of research are exploited for the benefit of the general public, who after all pay for the support of research.

The advocates of the patent system state that failure to patent inventions results in failure to have useful products or methods developed to the point of application, because investment capital is not available for development when there is no assurance that there will be a return on the investment. Private capital flows where there is some protection of the investment by a patent or a license. Otherwise, when there is no such protection, competitors may come in and exploit the development when it is achieved. This type of situation, it is claimed, results in potentially useful inventions sitting on the shelves.

When asked to give examples of inventions that were not exploited because they were not patented and fell into the public domain, the advocates of patents say that they cannot prove the negative. They would rather give examples of the development that followed the issuance of patents under the Federal patent policy that went into effect in the Kennedy era. A list of patents that led to development is attached. Here again, it is a judgmental appraisal of costs of development and market potential when we try to decide if the work would have been done without a license.

The perception that I have is that antipathy to patents is a phenomenon of the biomedical research community. Certainly chemists and physicists in universities have been alert to patents for years, particularly the chemists. It is a matter of the way the biomedical research culture regards itself. However, I see no harm in making biomedical research investigators aware of the patent route to development.

As I stated at the outset, the principal danger, that investigators may be pressed into an orientation towards patents, can be averted by various means. I am not so sure, either, that the better investigators can be pushed that way. They are the better investigators because of their curiosity and their intuition. When, either as a result of an intuitive approach or a serendipitous observation, they make a discovery that can lead to a beneficial product if it is developed, they can benefit their instituions and society as a whole.