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THE FEDERAL LABORATORIES  
and the  
UNITED STATES ECONOMY

THE FEDERAL LABORATORIES...

From its beginnings, the United States has been committed to the advancement of science. Today, there are over 380 Government laboratories performing research and development to support Federal programs or needs in such diverse fields as health, space, energy, agriculture, and defense. All of the work done by these labs is highly specialized and some of it is classified for national security.

Because these laboratories conduct a significant portion of all R&D performed in the country, and employ about (fraction) of the nation's scientific personnel, recent studies of the labs have recommended that ways be found to increase the flow of technology from them to the private sector.

...ARE LIKE UNIVERSITIES.

Federal laboratories and universities have much in common, including their role of creating new technologies needed by industry. A recent Federal Law (P.L. 96-517), which allows universities to own inventions produced with Federal funds, has led to major changes in the way universities manage research results. They have created special offices to promote and license patented inventions.

More inventions are being reported by researchers. There is closer cooperation with industry. And universities are enjoying substantial new funding, both through patent royalties and industrial support for additional research.

As a result of the Law, university inventors have new incentives to report inventions developed with Federal funding and assist in translating them into new products. Universities have new incentives to identify inventions with commercial potential, obtain patents on them, and actively promote them. Most important, these changes have been accompanied by less Federal involvement.

While these changes have been rapid, and presented numerous issues including the very role of universities, they have proven to be manageable. The fears of some, that industry funding would stifle genuine research have just not been substantiated.

PRESENT LABORATORY PRACTICE...

Today, disincentives inhibit cooperation between Federal laboratories and industry. Old conflict-of-interest regulations limit financial incentives for inventors and isolate them from

firms that need their advice. Management systems cause laboratory directors to view assistance to industry as a diversion of resources from their lab's primary mission. Some labs are required to pay patent application costs, but are not allowed to keep royalty returns. Other labs largely ignore commercial potential when deciding to patent their inventions.

...WASTES VALUABLE TECHNOLOGY...

Present practice has made the Government the largest patent owner in the Country. But most of its inventions are to meet unique Government needs. Few of its patents have commercial value and fewer still of its inventions are used by industry. Too often, the small number of inventions that could make a real difference, fail to come to the attention of the businesses that could best use them.

...AND SHOULD BE CHANGED.

The university experience shows how the Country could benefit from two relatively simple types of changes in the laboratories.

First, there needs to be a clear assignment of responsibility to evaluate new technologies, make patenting decisions on the basis of commercial potential, promote licensing agreements, arrange for inventor support during product development, and arrange for lab/industry cooperation on future research.

Second, stronger incentives for industry, inventors, and laboratories are needed to increase their collaboration.

Industry needs assurance of a continuing right to use a new, Government invented technology. In some cases, this will mean different licensing provisions than are customary today. In other cases, it will mean rights to own the results of future business-lab collaboration. Major investments to develop, manufacture, and market products require the incentive of licenses or patent ownership.

Inventors need financial rewards based on a share of royalties. In some cases, they also need time to advise firms on how best to use their inventions in new products.

Laboratory management systems should reward for cooperating with industry. This can take many forms including favorable performance evaluations of lab directors, citations, and use of royalties for additional research.

This combination of management focus and reinforcing incentives will be the best way to bring about the needed changes without detracting from the ability of the labs to continue to perform their important work.