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ACTION:

Federal Technology Transfer Act of 1986—Conference Report: Senate agreed to the conference report on H.R. 3773, to amend the Stevenson-Wydler Technology Innovation Act of 1980, to promote technology transfer by authorizing Government-operated laboratories to enter into cooperative research agreements and by establishing a Federal Laboratory Consortium for Technology Transfer within the National Science Foundation.

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FEDERAL TECHNOLOGY TRANSFER ACT—CONFERENCE REPORT

Mr. STEVENS. Mr. President, I submit a report of the committee of conference on H.R. 3773 and ask for its immediate consideration.

The PRESIDING OFFICER. The report will be stated.

The legislative clerk read as follows:

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 3773) to amend the Stevenson-Wydler Technology Innovation Act of 1980 to promote technology transfer by authorizing Government-operated laboratories to enter into cooperative research agreements and by establishing a Federal Laboratory Consortium for Technology Transfer within the National Science Foundation, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses this report, signed by all of the conferees.

The PRESIDING OFFICER. Without objection, the Senate will proceed to the consideration of the conference report.

(The conference report will be printed in the House proceedings of the RECORD.)

Mr. HOLLINGS. Mr. President, the conference report now before the Senate is a truly historic piece of legislation. At a time when the U.S. economy faces unprecedented foreign competition, the Federal Technology Transfer Act will help government, industry, and academia work together to maintain America's technological leadership.

The Federal Government spends tens of billions of dollars annually on research and development. Federal laboratories alone spend some $18 billion and employ one-sixth of the Nation's scientists and engineers. Of course, the Federal Government makes this huge investment to serve public needs, particularly in the areas of defense, health, and space. But in the process, laboratory scientists and other federally supported researchers create a wealth of unclassified inventions and ideas which, if properly used, could be of enormous help to State governments and American industry. Yet, historically, legal barriers and lack of communication have prevented the private sector and the States from taking full advantage of this important national resource. With international competition so strong, we can no longer afford to ignore this technology.

The Federal Technology Transfer Act is the latest in a series of bipartisan initiatives to reduce these barriers. In 1980, the Stevenson-Wydler Technology Innovation Act directed Federal laboratories to create offices to assist in the transfer of Federal inventions and expertise. That same year, the landmark Bayh-Dole patent amendments gave small businesses and nonprofit organizations, including universities, the right to own and develop inventions that result from federally funded research. Until those amendments, most Federal inventions sat on the shelf, never used by American companies or universities. In 1984, these patent rights were extended to those nonprofit organizations that manage federally supported national laboratories. Already, these new laws are resulting in new products that help industry and benefit the American public.

The bill before us today is an important series of amendments to the original Stevenson-Wydler Act. This bill gives Federal agencies the authority to let their "Government-operated" laboratories—that is, laboratories operated by civil service personnel—enter into cooperative R&D work with industry, State government, universities, and others. For the first time, the Nation's almost 700 Government-operated laboratories will have clear authority to work side-by-side with industry and the States to better utilize unclassified Federal inventions and ideas. The agencies and laboratories will decide for themselves how much, and what kinds, of cooperative work to undertake.

This bill in no way reduces national security controls on classified Federal technology. Nor will it cost the taxpayers an additional dime. Any funds for cooperative research will be provided by the non-Federal partner. In fact,

this new law will make money for the Government. When a Federal laboratory licenses an existing or new invention to a company, the laboratory may negotiate royalties. Even today the Government receives about $1.6 million per year in royalties from licensing inventions such as the new AIDS blood test. Royalties to the Government should increase under the new legislation.

Besides allowing Government-operated laboratories to work with non-Federal partners, the bill also has several other valuable provisions. It provides modest, stable funding for the existing network of laboratory technology transfer officers. This Federal laboratory consortium allows a businessman or State official to call their nearest Federal laboratory and, through the network, find out which Federal laboratories throughout the United States have expertise in a given area of technology. The FLC's modest funding is provided not through new expenditures but rather through a small set-aside from the Federal research agencies whose laboratories benefit from the network. The National Bureau of Standards will provide administrative support to the consortium.

The bill also provides that agencies will share some of the royalties earned from Federal inventions with the scientists and engineers who created them. This provision is designed both to reward important work and to provide an incentive for scientists to report patentable ideas which may benefit the country. Agencies are allow great flexibility in designing their royalty-sharing programs.

Finally, the bill contains various conforming and miscellaneous amendments to the Stevenson-Wydler Act.

Mr. President, this conference report results from a remarkable bipartisan effort. The House version of H.R. 3773 passed that body unanimously; its prime sponsors were a Democratic committee chairman and the House Republican leader. A bipartisan group of Senators introduced our version, which later passed this body unanimously. Both the Senate and House have benefited greatly from the work done by the Commerce Department's Office of Productivity, Technology, and Innovation.

Mr. President, all of us who have worked on this legislation see it as a vital step toward better utilizing our national R&D resources in an era of intense foreign economic competition. I am pleased to be an original cosponsor of the Federal Technology Transfer Act, and I urge my colleagues to support this conference report.

Mr. RIEGLE. Mr. President, I am delighted that we and our House colleagues have reached agreement on a conference report for H.R. 3773, the Federal Technology Transfer Act. This important legislation will allow our Federal laboratories to contribute more fully to American industrial innovation and State economic development. At a time when many other countries are challenging our technological leadership, we no longer can afford to ignore the great amount of technology created by the Nation's 700 Federal laboratories.

Federal laboratories exist, of course, to do research in support of Government missions in areas as diverse as agriculture, space, health, and defense. But in the process of serving the Government, Federal scientists and engineers also create a great deal of unclassified technology that could benefit American industry and State development efforts. Over the years, however, less than 5 percent of the almost 30,000 patents granted to personnel in Federal laboratories have been developed into commercial products.

We on the Commerce Committee's Subcommittee on Science, Technology, and Space have long supported efforts to transfer more Federal technology to the private sectors and States. Work on this particular bill began 2 years ago, when it became clear that many Government-operated laboratories—that is laboratories operated by Federal civil service personnel—lacked clear legal authority to enter into cooperative research projects with companies, State agencies, universities, and others. Yet never before have we seen such interest in working with Federal laboratories to commercialize new inventions, to undertake joint research, and to utilize the great expertise of Federal scientists and engineers. Clearly, we needed to reduce the legal barriers that prevent such cooperation.

The conference report before us today is the result of that work. It provides clear authority to Federal agencies to allow their Government-operated laboratories to enter into cooperative research and development agreements with non-Federal partners. It will, in my opinion, open up an entirely new era of American research—one in which Government, industry, and the States work together instead of in isolation of each other.

This bill has several notable features. It gives agencies and laboratories greater flexibility in deciding when to enter into cooperative research ventures, while stating Congress' view that preference should go to ventures which benefit both small business and companies that manufacture within the United States. The bill continues all existing protections for classified information while encouraging our laboratories to share unclassified technology.

This bill will not increase Federal expenditures. The cost of these joint research projects will be borne by the non-Federal partners. In fact, this bill could generate money for the Government by making it easier for Federal agencies to collect royalties on the inventions they license to industry. The legislation also provides rewards to Federal inventors whose ideas result in commercially successful products.

Mr. President, this is an important step toward the better utilization of the taxpayer's investment in Federal technology. The bill enjoys broad bipartisan support, and I urge our colleagues to vote for the conference report.

Mr. BAUCUS. Mr. President, I congratulate the Senate conferees for bringing this conference report to the floor. It is an extremely important bill, because it will do a lot to increase U.S. international competitiveness.

Each year the Federal Government spends $18 billion on research and development conducted at over 700 Federal laboratories. We employ one-sixth of our Nation's scientists in this effort. Yet, 95 percent of the work product of their efforts is unavailable for commercial development.

The Federal Technology Transfer Act of 1986 implements one of the recommendations of the Young Commission Report on Industrial Competitiveness by making it easier to transfer technology out of the Federal labs and into the marketplace.

This bill grants blanket authority to all Federal laboratories to set up cooperative research-and-development agreements with businesses. As Timothy Smith reported in the Wall Street Journal on October 1, 1986, "It will provide money to expand a communications system linking Federal labs, and giving businesses centralized access to a smorgasbord of government research."

Most importantly, the bill will create incentives for Federal researchers to stay on the job by requiring agencies to share at least 15 percent of the royalties received from their patents.

Mr. President, in his book "The Zero Sum Solution," economist Lester Thurow stated that the essence of comparative advantage is not static relative factor endowments or natural resources, but the creation of dynamic technological or efficiency advantages.

Comparative advantage is not something inherited. It's created—as the Japanese are doing now, and as America has done in the past.

The United States used to have the technological edge. It no longer does. While countries like Japan and West Germany coordinate ressearch and development between the public and private sectors and then share the information with their businesses, American policy is to bottle it up and fail to coordinate its use.

The Federal Technology Transfer Act is a major step toward strategic coordination of our research and development that will improve our industries' performance in world markets. I urge my colleagues to support this bill.

Mr. ROCKEFELLER. Mr. President, I am pleased to join my colleagues from the Commerce Committee in urging final passage of H.R. 3773, the Federal Technology Transfer Act.

This measure is about technological innovation, and about the process of turning inventions into marketable products and services. It recognizes that Federal laboratories represent a promising resource and provides a way to strengthen the links between government scientists and researchers in the private sector.

The Stevenson-Wydler Technology Innovation Act of 1980, which this bill amends, attempted to focus national attention on the issue of technology transfer. Regrettably, it was never fully implemented. But despite the administration's opposition to the act's central feature, a network of government-industry research centers, progress was made within individual agencies to encourage commercial applications of technology developed under their auspices.

Building on this fledgling effort, H.R. 3773 would facilitate cooperative research projects by Federal laboratories and private companies. The Government invests approximately $18 billion on research by Federal laboratories, and much of this work leads to patentable inventions. Yet only a small fraction of these Federal patents are licensed by private industry for commercial use.

In contrast, other countries—particularly Japan—are blazing the trail in the area of technology transfer. They encourage cooperative government-industry research efforts, and actively look for ways to translate the results of promising lines of research into commercially viable products. Japan has been exceptionally adept at identifying technology with commercial potential. And the inventions with commercial promise—the raw material of this process—often comes from us.

This country should be concerned about the implications of a one-way flow of technological information. The current imbalance in the international flow of knowledge is a real threat to our competitive position in a wide range of industries. America's comparative advantage has always been superior technology—our ability to innovate and invent. But we are no longer self-sufficient in technology: without access to technology developed elsewhere, major advances will pass us by.

I am very pleased that the final version of H.R. 3773 incorporates a Senate amendment, which I jointly sponsored with the distinguished majority leader, to improve U.S. access to technology developed with the help of foreign governments. Under the bill, foreign applicants will have opportunities to acquire technology developed in our laboratories—and we think our companies and researchers should get equivalent treatment by other countries in return.

Federal laboratory directors are empowered by this legislation to approve cooperative R&D arrangements and licensing agreements with private industry. Where applications to enter into these agreements come from foreign parties, our provision would permit the laboratory directors to take into account whether or not the countries involved permit U.S. agencies, companies, or other parties to participate in similar arrangements. It would apply to U.S. subsidiaries of foreign companies, as well as to other persons and organizations subject to the control of a foreign government.

We hope, by giving this discretion to our Federal laboratories, to open doors for our corporations and researchers to the work in foreign government-supported laboratories. By making reciprocal access a consideration, we should increase our leverage with foreign research organizations—and gain access to much valuable technical information. If foreign scientists, engineers, and other researchers can have relatively unrestricted access to path-breaking research at NIH or NASA, it's only right to expect comparable opportunities for our researchers in exchange.

In closing, I consider this legislation an important element of what should be a comprehensive, determined effort to improve the competitiveness of our industries. It will encourage industry to draw on the impressive technological resources and expertise of our Federal laboratories. It will strengthen our national investment in R&D—and help this country gain access to pioneering research and technology developed elsewhere. I'm proud to have worked on this measure and hope it will encourage us to address other aspects of our competitiveness problems with the same imagination and vigor.

Mr. STEVENS. Mr. President, I ask the Senate to adopt the conference report.

The PRESIDING OFFICER. The question is on agreeing to the conference report.

The conference report was agreed to.

Mr. STEVENS. I move to reconsider the vote by which the conference report was agreed to.

Mr. BYRD. I move to lay that motion on the table.

The motion to lay on the table was agreed to.