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TESTIMONY OF
DICK THORNBURGE, GOVERNOR
COMMONWEALTH OF PENNSYLVANIA

ON S. 2171

THE UNIFORM PATENT PROCEDURES ACT OF 1983

BEFORE THE
SENATE JUDICIARY SUBCOMMITTEE ON PATENTS,
COPYRIGHTS AND TRADEMARKS.

ROOM 226

DIRKSEN SENATE OFFICE BUILDING
FIRST STREET AND CONSTITUTION AVENUE, NE
WASHINGTON, D.C.

10 a.m.

March 27, 1984

Mr. Chairman, Members of the Subcommittee:

Thank you for the opportunity to testify before you today in support of S. 2171, the Uniform Patent Procedures Act of 1983. As Governor of the Commonwealth of Pennsylvania and Co-Chairman of the Subcommittee on International Competitiveness of the Committee on International Trade and Foreign Relations of the National Governor's Association, I am very much aware of the need to strengthen the competitiveness of American business in the international marketplace. This legislation, if enacted, will be of great benefit in achieving this end through its encouragement of increased commercial application of the research and development work of our federal laboratories.

The history of this country has been one of harnessing the latest in technology to our economic needs -- whatever they might be. The current situation is no different. If we are to maintain our economic leadership and maintain our economic competitiveness with other countries, we must do all within our power, as government leaders, to facilitate the transfer of knowledge and research to new applications, new products, and new processes.

S. 2171 recognizes government's legitimate catalyst role in a number of ways. It would:

*Permit university ownership of inventions resulting from research in agriculture.

*Permit university ownership of inventions made while those universities are managing government-owned laboratory facilities.

*Permit ownership of inventions by contractors who manage government-owned laboratory facilities.

*Maintain reporting procedures that minimize red tape and bureaucratic confusion.

*Permit federal agencies to waive any of the conditions that attach to ownership of university inventions when in the public interest, such as a co-venture, in order to create greater flexibility in university-industrial collaboration.

*Repeal the five-year cap on the grant of exclusive licenses to an industrial concern.

*And, perhaps of greatest significance, establish within the United States Department of Commerce an overall responsibility to oversee and report on this Act, and to exercise a leadership role in creating a climate favorable to commercialization of the results of federally-funded research.

There are over 380 federal laboratories in the United States. The eight in Pennsylvania are performing research in areas ranging from coal and forestry to food quality. We should be certain that we are taking maximum advantage of their resources and results to stimulate economic growth in this country. Although these laboratories perform a significant amount of the research taking place in our nation today, they have not always been as aggressive as they might in transferring their technology from the laboratory to the private sector.

S. 2171 will create stronger incentives for industry, inventors and federal laboratories to work together. This collaboration assumes an even greater importance when you realize that, for the past four years, the private sector has paid more of the cost of research and development in this country than the federal government. Overall in 1983, the federal

government spent \$39.6 billion and the private sector \$44.3 billion on research and development. Most private sector funds, however, are spent on development, not on basic research. On the contrary, in 1983, the federal government spent \$7 billion on basic research while private industry spent only \$2 billion.

The federal government has been, and in my estimation should continue to be, the most important supporter of basic research, aimed at advancing scientific knowledge. However, where this basic research results in commercial potential, this should and must be capitalized upon and mechanisms must be established to enable the rapid conversion of this potential into actual application in the marketplace.

This legislation provides overdue recognition of the basic principle that we ought to permit the private enterprise system to do what it does best -- produce new products, and thus jobs, which the public wants and needs.

Let me also indicate, Mr. Chairman, that passage of S. 2171 also would complement efforts of the states to foster and encourage technological innovation. As Vice-Chairman of the National Governors' Association Task Force on Technological Innovation, I am aware of the wide range of approaches and techniques that the states are adopting to build improved relationships between our colleges and universities and the private sector. While most states do not have state research laboratories which are the equivalent of their federal counterparts, we do have another resource that is critical to technological innovation: our network of colleges and universities.

States such as Pennsylvania have undertaken a number of initiatives in recent years to utilize the talents and capabilities found in our academic and private research sectors. In February of 1982, for example, I proposed and the Pennsylvania General Assembly approved the establishment of our "Ben Franklin Partnership," named after that distinguished Pennsylvanian who epitomized the roles of inventor, educator, small businessman, and political economist.

In February of 1983, Pennsylvania's Ben Franklin Partnership Board designated four Advanced Technology Centers and we provided the first \$1 million in state funding for their first six months of operation. While our program requires a \$1 match of private and other funds for every \$1 of state funds, we actually received over \$3 in match for each public dollar appropriated. For the current fiscal year, I proposed and the General Assembly provided \$10 million in state funds -- this time matched by \$28 million in other funds, including \$16 million from the private sector.

The current program is funding 219 projects throughout the Commonwealth. Our response has been so gratifying that, for our state's next fiscal year beginning July 1, I have proposed to double state support of this program to \$20 million. All projections are that our private sector response will continue to grow apace.

Each of our four centers serves as a consortium, linking together higher education institutions and the private sector. Involved in these consortia are business, labor, education and other groups and organizations. Each center undertakes three kind of activities:

*Joint research and development.

*Education and training.

*Entrepreneurial development.

Over 1,500 firms are involved and 79 of Pennsylvania's 135 higher education institutions are linked to one or more of our centers.

This is not merely a subsidy to fund additional research. It is job-oriented and designed to foster real economic growth. Unlike traditional university research and development, the Ben Franklin Partnership requires that private sector commitments come first. Where there is a definite private sector interest and need, for example, for research and development, that firm discusses the proposal with the applicable center and develops a joint proposal. Each of our centers is limited to three or four research and development areas in which to concentrate its activities -- areas where there are university capability and expertise along with private sector interest. Contractual and other arrangements are worked out between each center and the private sector participants -- with flexibility being the basic ingredient. Our patent policies are, interestingly enough, very similar to those you are considering in the legislation before you.

In addition to their research and development function, each center undertakes education and training activities to assist in filling what we call "gaps" that cannot be filled by other education and training programs. For example, one of our centers is working with a community college, sharing expensive equipment, redesigning a new course and curriculum, and training the community college faculty to offer courses in areas of future growth.

Regarding entrepreneurial development, each of our centers provides a range of services, from helping an entrepreneur prepare a business plan to approaching financial institutions for loans or venture capital to actually providing "incubator space" in which a start-up firm may locate. Low-cost, low-rent space and shared facilities provide a suitable environment in which a new firm can start, while maintaining close access to a research university. Several such incubators are already in place in Pennsylvania and more are planned.

The Ben Franklin Partnership provides an example of a state initiative in bringing research and the private sector together. Just as you are attempting to do with the provisions of S.2171, we in Pennsylvania are trying to more rapidly commercialize our research and development, either into new firms with new products or into new processes that can help our existing and traditional industries modernize and survive. "Spinning in" technologies to our coal or steel industries is equally important as our efforts to "spin off" new products to create new firms on the leading edge of technology. Examples of research and development projects currently underway through the Ben Franklin Partnership include transfer of robotics technology to eight small machine shops and industries in Western Pennsylvania, application of new technologies to steel firms and glass firms, and redesign of construction methodology with computer-assisted design and manufacturing (CAD/CAM) techniques.

Much of our knowledge in many of the basic sciences has been discovered since 1950. Increasingly, this knowledge affects our everyday lives and is likely to increase further. The extent to which our existing industries apply these technologies to their manufacturing processes and we

are able to move our research and development results into new firms and new markets will determine, to a great degree, the extent to which we can provide new, permanent and meaningful job opportunities for Americans of all occupations.

In less than one year, our Ben Franklin Partnership program has assisted in establishing 20 firms and assisted another seven firms in expanding. We believe the results will be even more dramatic over the long term.

The Congressional Office of Technology Assessment recently released a report indicating that much of the focus for technological innovation in this country was shifting to the states. Legislation such as that before you today will enable states such as Pennsylvania to further our economic development by involving federal laboratories more closely in our technological initiatives.

No new federal dollars are required. All that is needed is a new flexibility to nurture the private sector-university relationships already under way by facilitating their links with federal laboratories.

I appreciate the opportunity to appear before you today, and I would welcome any questions you may have.

Summary

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Testimony before the Senate Judiciary Subcommittee
on Patents, Copyrights, and Trademarks
March 27, 1984

by
John S. Toll, President, University of Maryland

On behalf of the Association of American Universities, the American Council on Education, the Council on Government Relations, the National Association of State Universities and Land-Grant Colleges, and the University of Maryland

I speak in favor of S. 2171, the Uniform Patent Procedures Act of 1983. This bill is a logical and important extension of beneficial provisions contained in the landmark legislation of 1980, The University and Small Business Patent Procedures Act - now Public Law 96-517. That legislation cleared away many of the complicated ownership issues in regard to inventions that result from collaborations between federal agencies and universities or small business. Public Law 97-517 protects the government's rights to royalty-free use of the inventions, but by allowing universities and small businesses clear ownership, the law increased the likelihood that new discoveries will benefit American technology, and shortened the time from discovery to technological application.

America's universities have a long history of fruitful research collaboration with government agencies. Increasingly, universities and industries are establishing research relationships which stand to benefit the development and the application of advanced technology. Unfortunately, when these developments also involve federal agencies, as they often do, exclusion of large business firms from the provisions of Public Law 96-517 constitutes an impediment to commercial applications. Importantly, S. 2171 would preserve provisions that enhance universities' contributions to American technology, while it extends those provisions to all business.

Recently, the University of Maryland, the National Bureau of Standards, and Maryland's Montgomery County entered a formal agreement to establish a Center for Advanced Research in Biotechnology. It will be located in the Shady Grove tract that Montgomery County designated for the nation's first Biotechnology Research Park. High technology industrial firms, already committed to establishing laboratories in the park, enthusiastically plan collaborations with the Center. We anticipate great benefits to the University, to the government, and to industry from this arrangement, but without the provisions of S. 2171, progression of the fruits of university-government-industry collaboration to commercial applications will be slow and extremely complicated.

This example of university-government-industry research collaboration at Shady Grove illustrates the kind of partnerships that are developing throughout the country. Many institutions from the University's associations I represent are developing similar relationships, but their benefits will be slow to emerge unless impediments to technology transfer are cleared away. S. 2171 will go a long way toward removing impediments and I urge its adoption.

March 27, 1984