STATEMENT OF

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ON

ACCESS TO FEDERALLY FUNDED SCIENCE AND TECHNOLOGY

BEFORE THE

SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

UNITED STATES HOUSE OF REPRESENTATIVES

APRIL 29, 1987

Mr. Chairman, on behalf of Secretary Baldrige and Deputy Secretary Brown, I want to thank you for inviting the Department of Commerce to participate in this very important series of hearings on competitiveness. This is an issue that Secretary Baldrige and Deputy Secretary Brown care about very deeply and I know they both regret their inability to be here.

We are particularly pleased that you asked us to discuss the impact of the President's recent Executive Order on access to federally funded research and development. Its impact on American competitiveness can be summed up very succinctly: it will be direct and substantial.

The President's Order should be viewed as a critical part of a comprehensive series of proposals and actions to enhance productivity, to foster innovation, and to improve our standard of living. The President's Competitiveness Initiative includes proposals designed to:

- obtain excellence in education,
- generate new knowledge in advanced technologies,
- expand the nation's talent base in science and technology,
- protect business from unfair foreign competition, and
- increase the protection we give to those who create and those who take risks in bringing those creations to the marketplace.

It is the last aspect that is particularly relevant this morning. While the President's intellectual property proposals are very much concerned with strengthening the protection afforded to intellectual property - that is, the incentives to invent - and the talent base of scientists and engineers - that is, the ability to invent - attention must also be paid to how well we manage what we invent.

Our intellectual property system is one of the finest in the world and clearly provides incentives. The talents of the American people are unmatched and they clearly have the ability. Unfortunately, the management record - in the private as well as the public sector - has not always been as good as it could have been.

For example, the record shows clearly that many firms in the private sector, in their effort to do business on a global scale, were not always as careful as they could have been in structuring their joint ventures, licensing agreements, and marketing, manufacturing or supply arrangements. As a result foreign firms in such fields as consumer electronics often emerged as the principal beneficiaries in technology financed and developed by American companies. We are starting to see signs that American firms are being a lot more careful about protecting their interests.

The public sector is also starting to manage what it produces better. Here the main problem has been that too much of what we do develop as the result of our $55 billion annual federal investment in research and development stays on the shelf and never gets commercialized.

Why should this be? It is not an oversimplification to say that line managers - that is, those who do the work - of the federal scientific establishment have just not had the direction and incentives to do what needs to be done. The President's Executive Order addresses these problems head on. Its various provisions, some of which I will discuss in detail in a moment, all point in this direction: Keep the lines of international scientific communication open but never forget that (1) the federal investment in R&D can lead to new products, new jobs, and new industries, and (2) that the first to stake a claim to these benefits should be American industry.

Let me, then, turn to the Order itself. Three of its themes are: incentives, decentralization, and effective international cooperation. Let me turn to each of these.

First, the President reaffirmed the fundamental principle that if you expect people to invent something, figure out whether it has any commercial applications, and, if so, get it to the market-

place, you had better let them profit from it. Several aspects of the President's order demonstrate this.

- First, the President elevated his 1983 memorandum to agency heads to executive order status. What this means is that the order, together with Public Laws 96-517 and 98-620, gives universities, small businesses, and, to the extent permitted by law, all other contractors the first right of ownership to inventions made with federal funds. This profit motive gives these contractors incentives to report new inventions - thus adding to the store of scientific and technical knowledge - and to develop and exploit their commercial potential.

- Second, it called for the immediate implementation of the Technology Transfer Act of 1986 which permits Government-owned, Government-operated (GOGO) labs to enter into cooperative R&D agreements and allows the federally-employed inventor at these labs and the lab itself to share in the royalty stream from resulting inventions. In fact, the President's order called for prompt implementation of the Act's provisions concerning royalty sharing and cash awards.

The second basic theme is decentralization - that is, keep the ownership of the technology in the hands of the federal contractors who created it, for they are the ones who understand it the

most and are best able to appreciate its commercial potential. Placing control in the hands of universities, small businesses, and other contractors ensures that complex decisions as to whether a new technology should be published, patented, copyrighted, trademarked or held in abeyance would be made by persons with the proper background to judge its value.

The President's Order extended this principle to the government-owned, government-operated labs as well. His order directed agency heads to delegate to the lab directors themselves the authority to enter into cooperative R&D agreements as well as the authority to license resulting investions. This will give the laboratory director the ability to give ownership or control of inventions to those in the private sector who are best able to commercialize them.

In other words, the President's Order reflects the principle established by the earlier statutes and his 1983 Memorandum: the people who create technology are the ones best able to manage it.

A third major feature of the Order relates to international cooperation. Our openness as a society contributes greatly to international scientific progress, but, as the President's order clearly reflects, other nations have obligations of their own and we have the right to expect them to live up to them. For this reason, we were very pleased that the President directed agencies

entering into cooperative agreements with foreign governments to consider whether they protect intellectual property and are willing to include our citizens and public agencies in cooperative research and licensing arrangements.

Between the President's express instructions and the fact that we now have in place a comprehensive series of statutes and orders that give labs strong financial incentives to control the technology they produce, we are confident that the goal of transferring federally financed technology to the marketplace, where it can generate new businesses and new jobs, will be achieved.

Commerce will do all it can to make it so. We have a number of responsibilities under the Technology Transfer Act. These include providing technical assistance to other federal agencies, helping them evaluate the commercial potential of inventions developing a model cooperative agreement on R&D, and keeping the President and the Congress informed as to the progress the Government is making in transferring technology to the private sector. We take these duties very seriously and we are moving swiftly to execute them.

Secretary Bãldrige has formally vested his authority under the Act in our Under Secretary for Economic Affairs, Dr. Robert Ortner, and Bob has already established an Intradepartmental

Committee to assist him. This will enable him to take full advantage of the Department's scientific, technical and management experience. Our Assistant Secretary for Productivity, Technology and Innovation will be represented as will NBS, NOAA, NTIA, and my own shop, the General Counsel's Office.

To ensure we get valuable input from elsewhere in the Government, Secretary Baldrige is establishing an Interagency Committee. It will give us valuable insight as to how we can best make our expertise available for evaluating the commercial potential of inventions and the various commercialization options available to labs.

As provided by the Act, our National Bureau of Standards has agreed to house the new Federal Laboratory Consortium on a reimbursable basis and the Secretary has written to other agency heads asking them for appropriate funding.

In addition, I am pleased to note that last month OMB approved our Final Rule on Patent Rights to Inventions made by Non-Profit Organizations and Small Business Firms. It was published in the Federal Register on March 18.

There are a number of other important features in the Order. I will mention them only briefly because it is too soon to know precisely what direction they will take and because there is

another element of the President's Competitiveness Initiative I want to discuss which has a very direct and important bearing on how we transfer technology from the inventor to the marketplace.

These other features of the Order include:

- an instruction to agencies to try to develop a policy for allowing contractors to retain ownership of federally funded technical data to parallel the current policy regarding ownership of patent rights;

- an instruction to specified agencies to cooperate in developing a Technology Share Program with U.S. industries and universities;

- a direction to agency heads to consider the potential for establishing basic science and technology centers at universities.

As noted a moment ago, I would like to conclude by mentioning one other aspect of the President's proposals that I believe will have great impact on how technology gets transferred. The various bills I mentioned all recognize a basic truth: the inventor is not always the one who has the skill, interest, or resources to commercialize an invention. That often depends on his or her ability to assign or license the patent to those can

fully develop its commercial potential. Whether we are talking about federal labs or private ones, a favorable climate for licensing is essential if inventions are to be commercialized.

Unfortunately, many courts see patents as "monopolies" that conflict with the antitrust laws and have severely limited the patentee's ability to work out satisfactory licensing arrangements. Many courts will automatically condemn certain arrangements as per se violations of the antitrust laws without considering their procompetitive potential.

The President suggested a number of proposals to improve the climate for patent licensing. The Judiciary Committee will hold hearings on some of these tomorrow. I believe this Committee has a very real stake in the outcome of those deliberations.

In sum, Mr. Chairman, we believe the President has devised a comprehensive and workable plan for converting taxpayer financed research into new products, new jobs, and an improved living standard. His plan is fiscally responsible and relies in large part, and appropriately so, on the profit motive and on letting the right people manage the technology.

Thank you, Mr. Chairman. I will be pleased to answer any questions you may have.

Mr. WALGREN. Thank you very much, Mr. Riggs, for that statement. We certainly want to encourage the administration in the directions that are covered by the President's Executive Order.

One of the things that strikes me, though, is that I wonder why it takes so long to get some of these policies translated into actual practice. Correct me if I am wrong, but here we now have OMB, as I understand it, issuing regulations covering patent rights to inventions by non-profit organizations and small business firms.

When did the Congress pass that enabling of patent right retention in those firms?

Mr. RIGGS. 1980 and 1984.

Mr. WALGREN. Didn't we first do small business in earlier years and then later come back and pick up the larger organizations in terms of giving them the standing to retain patent rights?

Mr. RIGGS. As I understand it, Mr. Chairman, the statutes that have been passed have dealt essentially explicitly with small businesses and non-profits. It has not dealt explicitly with what I will call large businesses. In fact, that has been an issue of substantial discussion within the administration as to whether there is statutory authority for large businesses to retain the rights to the technology that has been developed by them under contract.

I think tomorrow you will be hearing from Mike Farrell, the General Counsel of the Department of Energy, and I assume that that would be one of the issues that he will address because obviously the Department of Energy has relationships with very large businesses, in contrast to what we might call small businesses or the non-profits.

We believe that even though there may not be explicit statutory authority, we nonetheless believe that there is authority that would allow this transfer to occur to the smaller entities, and I believe that that matter is one that internally, at least, within the administration is being worked out, satisfactorily worked out.

I might just gratuitously make the observation that it may very well be an issue that the Congress may want to take a look at because it is always better to have something made explicit rather than implicit.

Mr. WALGREN. There are so many circles in our system, and it may be that something that becomes very non-controversial in one circle is not really completely accepted by another, and therefore the deed is not done. But in many groups now that I have had contact with in the Congress, that has been sort of a given for a number of years, and it is disappointing to see it not having been confirmed before.

You indicate that it is important how these departments implement these regulations that apparently now have been

issued by OMB; is that right? Particularly the Department of Energy. I know that we would like to specifically address attention to how they are going to move on that and whether there are any limitations in the completeness with which they will go forward in allowing those patents to be appreciated.

Mr. RIGGS. I think again, obviously for the regulations to have been promulgated in final form in March, there was agreement reached within the administration and that agreement obviously included all the relevant agencies, including DOE. I might point out--again this is a gratuitous observation--that my colleague, Mike Farrell, as General Counsel of the Department of Energy, has taken a very positive role in acting as a broker between his agency and our agency in working out some of these disagreements.

I know that he and Assistant Secretary Merrifield have met on a number of occasions, and I am pleased that, to the extent there were any disagreements, they appear to have been worked out. Clearly the fact that the regulations have been promulgated and are now in force and effect reflect the fact that there has been agreement reached.

The other comment that I would make within this context is that in the last two or three days, obviously, in preparation for this hearing I have had an opportunity to spend a great deal of time with our people at the Department of Commerce, and

it goes without saying that--it is just a restatement of my earlier comment--people in the Department of Commerce are very committed to this concept of tech transfer.

Bruce Merrifield, I think, has criss-crossed this country. I think he has been through this town as thoroughly as anyone can go through this town in putting forth the concept that it is very important to get this information, this technology that is being developed in the Federal labs, out into the stream of commerce. Our people have taken a very aggressive approach in seeing that that policy goal is achieved, and I am impressed by the number of actions that Congress has taken, particularly since the early 1980s.

Then you couple that with the President's memorandum of 1983 and now this executive order, which is very broad and very straightforward. It is very compelling in directing the Federal apparatus what it should be doing.

Mr. WALGREN. You know, in this whole area one of the frustrations is that we can agree on what ought to be done, but unless we measure in some way quite specifically the progress or the change or whatever it is that we are talking about, oftentimes in government you come away with just the words and not any real change.

That strikes me in a couple of ways. For example, Mr. Merrifield's effort in trying to encourage the joint research consortiums. We have been really highlighting the

potential of that kind of arrangement for a number of years now, at least five years, and the question is what is the pickup out there? Is this something that is really going to change people's lives, or is this just a theory that a professor might talk about?

I would like to ask if you wouldn't try to in a later submission measure a couple of things for me, particularly if you can measure the specific actions taken in response to the theory that Mr. Merrifield has been promoting.

You also indicate in your statement that it is clear that the effort to do business on an international basis has been undercut by the failure of our managers to be as careful as they could have been in structuring international joint ventures. Is there some measurement of the size of that failure that you can give us? There are lots of problems internationally, and clearly respect of licensing arrangements is one of them, but I would like to see if we couldn't put a measure on it so that we know that by spending time on that, we are going to catch the right problem.

In the same way, you indicate that the effort in implementing the President's order will be, in your words, direct and substantial. Understanding the limitation of resources, obviously something measurable has to be committed to that, and one of our problems with

Stevenson-Wydler is we never could find the measure of it. We put the principle of the obligation to spend effort on technology transfer in the laboratories, and yet it was largely said, oh, we were already doing that, or something to that effect.

I really wish particularly we now set out a new effort to facilitate collaboration between the laboratories and the state and local governments and universities and the private sector, and the question would be could you detail what resources the Department is going to commit to making that happen to create an effort that we would properly describe as ''direct and substantial''?

I would like to ask you for a submission more on that. I have to respond to the call to a vote on the floor. It will take ten minutes. Do you have ten minutes?

Mr. RIGGS. Absolutely.

Mr. WALGREN. All right. Then let's suspend and I will be right back.

[Recess.]

Mr. WALGREN. Let us resume.

Let me reiterate the effort to ask you to measure the size of the problem that you think we are talking about with respect to the lack of careful attention by American managers to being taken advantage of in international joint ventures.

I would also like to underscore that you say in the testimony how important it is that government-owned, government-operated laboratories enter into cooperative R&D agreements. We have had one that we have been trying to promote for the last three years stemming from the President's Science Adviser's steel initiative, and I am sorry to say we were deferred on year and rescinded another and then unfunded in the next, so to put the meaning to the words, it would seem that that would fit almost hand in glove with that effort that you are making there.

Although that comes through the Department of Energy and might not be directly in your purview, I just want to raise the flag that there have been attempts in these directions before that have really not been met with receptivity.

You indicated that one instruction would be to encourage retention of ownership of Federally-funded technical data by the contractors involved. I would like to raise a concern about that in that some data certainly would best be disseminated through a library-type approach in which it isn't the ownership right of the information that really encourages its dissemination. How would you differentiate between data that might be more fully distributed if it were considered proprietary but the other very broad range of data that really might wind up less widely used if it were held in that framework?

Mr. RIGGS. I think that when you talk about the dissemination of data, and particularly a lot of the data that is developed in government labs, one of the over-arching concerns centers on the national security aspect. Of course, the Executive Order acknowledges that over-arching concern.

I think there is another way of looking at this particular issue, and I think that is that it is in the interest of those of us in the Department of Commerce, and I think increasingly now in the government itself, of trying to move as rapidly as possible into commercialization of federally funded R&D. One of the things that would help that is obviously if contractors are able to retain certain intellectual property that they have developed because there is a tremendous motive that is associated when one has ownership, when one has the ability to have proprietary interest in a particular item.

At the same time, I think your point is extremely well taken that there are other data which may have a greater value if they could be more widely disseminated, as you suggested, through a library-type system.

So what I am suggesting is that there are obviously competing interests on this particular issue. It is one that is going to have to be worked through, but I think that other than this over-arching concern about national security, I think that we in the Department of Commerce would be most

interested in having the route taken that would best ensure the greatest commercialization. If that, in fact, would be one which allows the contractor to retain it in contrast to wider dissemination, then I think we would probably come down in favor of that.

As I said, the bottom line that we at the Department of Commerce are seeking is commercialization. We believe that commercialization is something that is not only good for American business but, frankly, very good for the American consumer.

Mr. WALGREN. Let me add one other request to the idea of submitting some effort to measure these things. We talk about the potential of now this patent availability for small business and universities, and yet there has been some clear patent availability for small businesses and universities since, I believe it was, 1980 in the law, and my concern is that now we are holding out this life raft that may already have been out there for a number of years, and either something or not very much happened.

I would like to ask you if you couldn't try to measure what has happened in response to the 1980 effort to allow small businesses and universities to participate in patent incentives that, as I understand it, has been a matter of law since that time.

Mr. RIGGS. We will do that. I may stand corrected, but I

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am under the impression that it is really the 1984 act. Both acts?

Mr. WALGREN. We would appreciate your pointing us to that and adding your own assessments to it as well.

Let me recognize the gentleman from California, Mr. Brown.

Mr. BROWN. Mr. Chairman, I don't have any questions but I do want to compliment Mr. Riggs and the Executive Branch in total for the initiative represented by the President's Executive Order. I think it is a good step forward. We are not at all clear whether it may need additional effort, but certainly we want to take steps like this and to move them and carry them out aggressively. It appears that you are doing that and you are to be commended for it.

Mr. RIGGS. Thank you.

Mr. WALGREN. And the gentleman from North Carolina, Mr. Valentine.

Mr. VALENTINE. I thank you very much, Mr. Chairman. I don't have any questions.

Mr. WALGREN. On behalf of the committee, we certainly appreciate your coming, and we look forward to interacting with you in hopes of encouraging some of these things to have real life. Thank you, Mr. Riggs.

Mr. RIGGS. Thank you very much for the invitation, and we will respond to these issues that you have put to us. Thank you very much.