TOWARD GREATER PUBLIC-PRIVATE COLLABORATION IN RESEARCH AND DEVELOPMENT: HOW THE TREATMENT OF INTELLECTUAL PROPERTY RIGHTS IS MINIMIZING INNOVATION IN THE FEDERAL GOVERNMENT

HEARING

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

FIRST SESSION

JULY 17, 2001

Serial No. 107–90

Printed for the use of the Committee on Government Reform

Available via the World Wide Web: http://www.gpo.gov/congress/house
http://www.house.gov/reform

U.S. GOVERNMENT PRINTING OFFICE

81–424 PDF WASHINGTON : 2002

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

COMMITTEE ON GOVERNMENT REFORM

DAN BURTON, Indiana, *Chairman*

BENJAMIN A. GILMAN, New York
CONSTANCE A. MORELLA, Maryland
CHRISTOPHER SHAYS, Connecticut
ILEANA ROS-LEHTINEN, Florida
JOHN M. MCHUGH, New York
STEPHEN HORN, California
JOHN L. MICA, Florida
THOMAS M. DAVIS, Virginia
MARK E. SOUDER, Indiana
JOE SCARBOROUGH, Florida
STEVEN C. LATOURETTE, Ohio
BOB BARR, Georgia
DAN MILLER, Florida
DOUG OSE, California
RON LEWIS, Kentucky
JO ANN DAVIS, Virginia
TODD RUSSELL PLATTS, Pennsylvania
DAVE WELDON, Florida
CHRIS CANNON, Utah
ADAM H. PUTNAM, Florida
C.L. "BUTCH" OTTER, Idaho
EDWARD L. SCHROCK, Virginia
JOHN J. DUNCAN, JR., Tennessee
HENRY A. WAXMAN, California
TOM LANTOS, California
MAJOR R. OWENS, New York
EDOLPHUS TOWNS, New York
PAUL E. KANJORSKI, Pennsylvania
PATSY T. MINK, Hawaii
CAROLYN B. MALONEY, New York
ELEANOR HOLMES NORTON, Washington, DC
ELIJAH E. CUMMINGS, Maryland
DENNIS J. KUCINICH, Ohio
ROD R. BLAGOJEVICH, Illinois
DANNY K. DAVIS, Illinois
JOHN F. TIERNEY, Massachusetts
JIM TURNER, Texas
THOMAS H. ALLEN, Maine
JANICE D. SCHAKOWSKY, Illinois
WM. LACY CLAY, Missouri
DIANE E. WATSON, California

BERNARD SANDERS, Vermont
(Independent)

KEVIN BINGER, *Staff Director*
DANIEL R. MOLL, *Deputy Staff Director*
JAMES C. WILSON, *Chief Counsel*
ROBERT A. BRIGGS, *Chief Clerk*
PHIL SCHILIRO, *Minority Staff Director*

SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

THOMAS M. DAVIS, Virginia, *Chairman*

JO ANN DAVIS, Virginia
STEPHEN HORN, California
DOUG OSE, California
EDWARD L. SCHROCK, Virginia
JIM TURNER, Texas
PAUL E. KANJORSKI, Pennsylvania
PATSY T. MINK, Hawaii

EX OFFICIO

DAN BURTON, Indiana
HENRY A. WAXMAN, California

MELISSA WOJCIAK, *Staff Director*
VICTORIA PROCTOR, *Professional Staff Member*
JAMES DECHENE, *Clerk*
MARK STEPHENSON, *Minority Professional Staff Member*

CONTENTS

TOWARD GREATER PUBLIC-PRIVATE COLLABORATION IN RESEARCH AND DEVELOPMENT: HOW THE TREATMENT OF INTELLECTUAL PROPERTY RIGHTS IS MINIMIZING INNOVATION IN THE FEDERAL GOVERNMENT

TUESDAY, JULY 17, 2001

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2154, Rayburn House Office Building, Hon. Thomas M. Davis (chairman of the subcommittee) presiding.

Present: Representatives Tom Davis of Virginia, Jo Ann Davis of Virginia, Turner, and Mink.

Staff present: Melissa Wojciak, staff director; Amy Heerink, chief counsel; George Rogers, counsel; Victoria Proctor, professional staff member; James Dechane, clerk; Mark Stephenson, minority professional staff member; and Jean Gosa, minority assistant clerk.

Mr. TOM DAVIS OF VIRGINIA. Please be seated. I will swear you in, but we have opening remarks first. So we will try to be quick.

I would like to welcome everybody to today's hearing about intellectual property and Government-funded research and development. R&D collaboration between the Government, commercial companies, and universities is widespread. Such collaborative R&D projects have a long history in the United States with major initiatives in pharmaceuticals, petrochemicals, synthetic rubbers, and atomic weapons being launched during World War II. Similarly, university-industry research collaboration was well established in the U.S. economy of the 1920's and 1930's and contributed to the transformation of the U.S. chemicals industry. There is no doubt that public-private collaboration makes an important contribution to the technical and economic well-being of U.S. citizens. Indeed, statistics show a substantial correlation between research, innovation, and U.S. economic prosperity.

Throughout the cold war years, the Government in general and agencies such as the Pentagon and the Department of Energy, drove R&D. However, the Wall Street Journal has reported that the private sector's share of total R&D spending in recent years is soaring, while the share of Government is declining. In 1960, for

example, private sector R&D spending amounted to roughly one-third of the country's total. In 1999, private sector R&D was two-thirds of the total. Over the same period, the military's share dropped from 53 percent to 16 percent. The Journal also notes that three-fourths of the country's top 75 information technology companies will not do research for the Government, citing the difficulty in contracting with the Government and treatment of intellectual property in R&D contracts. Thus, at the same time that Government is no longer driving technological innovation, many commercial firms that invest billions in R&D every year are refusing to do business with the Government. This has serious implications for the well-being of the United States.

Intellectual property rights are the most valued assets of leading-edge technology companies. The Government is challenged today to find ways to entice commercial industry into collaborating with it on vital R&D efforts. While acquisition legislation in the 1990's, such as the Federal Acquisition and Streamlining Act and the Clinger-Cohen Act, greatly improved the contracting process, many companies still refuse to undertake R&D projects because of concern over how intellectual property rights will be treated. The Department of Defense, in its recently issued guide for the acquisition community entitled, "Intellectual Property: Navigating Through Commercial Waters," has recognized the priority of improving the treatment of intellectual property rights as a precursor to ensuring its access to the very best technologies.

Today's hearing is going to address one of the several barriers to acquisitions and sourcing by the Government: the treatment of intellectual property in R&D funded by the Government. The goals of this hearing are to gather information about the nature and scope of intellectual property law and regulation as it relates to Government-funded R&D. Going past the legal framework, this hearing also will investigate the actual practice of the Government in R&D contracts with both commercial industry and universities.

How the Government treats intellectual property has a profound impact on the competitive environment for R&D. It is axiomatic that competition increases innovation in an effort to offer more attractive options to the consumer at lower prices. Yet many innovative companies find themselves in a difficult position trying to negotiate with a Government that believes it must have all available intellectual property rights rather than only those rights that they need. The paradigm has changed—Government is no longer the leader in innovation; now it must respond to its new role as partner in innovation by adopting policies for the treatment of intellectual property that are consistent with commercial practice.

Efforts at addressing the difficulty that the Government has had in attracting innovation in its R&D will be looked at, including existing mechanisms for flexible contracting and whether there is a need for training of the acquisition work force on intellectual property issues. Finally, reform efforts currently underway in agencies and proposals for regulatory and legislative change will be examined.

Intellectual property rights are the lifeblood of commercial firms and are vitally important to universities. Working to improve the Government's treatment of intellectual property rights must be a

priority in order to ensure the ability to access the very best technologies for our future civilian and military needs. I look forward to the testimony of the witnesses today, and thank you for participation in this important hearing.

I will now turn to our ranking member, Mr. Turner, for any comments he would like to make.

Mr. TURNER. Thank you, Mr. Chairman. As you have stated, this hearing today is for the purpose of examining the nexus between intellectual property and procurement practices. Hopefully, we will learn whether the current intellectual property laws and practices, including those governing patents, trademarks, copyrights, and trade secrets, prevent the Federal Government from gaining access to the best and the most up-to-date technological advances, and if they do, what solutions might be available to us to allow more flexible contracting in this area.

As you mentioned, Mr. Chairman, the Federal Government's share of R&D funding has decreased since the eighties. The Federal Government still spends close to $80 billion on research and development. So we are a significant player in that area.

It is important for us to explore ways that the Federal Government can be more flexible in contracting the use of so-called "other transactions" at the Department of Defense, and the recently published guide on intellectual property seemed to address just this concern. I believe, however, that we must be cautious as we approach this somewhat complicated issue. Current law and regulation was designed to strike a delicate balance between the needs and the rights of the Government, as the representative of the public, and those of private industry. We need to keep these sometimes conflicting priorities in perspective as we examine these issues today.

I look forward, Mr. Chairman, to hearing from each of our witnesses. Thank you.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Ms. Davis, do you have any opening statement?

Mrs. JO ANN DAVIS OF VIRGINIA. No, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. OK. I would like to now call our panel of witnesses to testify. We have Mr. Jack Brock, the Managing Director for Acquisition and Sourcing Management at the General Accounting Office; Ms. Dee Lee, the Director of Defense Procurement at the Department of Defense; Mr. Eric Fygi, the Deputy General Counsel of the Department of Energy; Mr. Richard Carroll, president of Digital Systems Resources, Inc.; Mr. Richard Kuyath, the counsel to the 3M Corp.; and Dr. Chris Hill, the vice provost for research and professor of public policy and technology, George Mason University.

It is a policy of this committee that all witnesses be sworn before they may testify. If you have supporting individuals with you from your agencies that may be answering questions, they should also stand with you and be sworn.

[Witnesses sworn.]

Mr. TOM DAVIS OF VIRGINIA. To afford sufficient time for questions, pleae try to limit your testimony to 5 minutes each. I have read everybody's testimony, believe it or not. So we are ready with

questions, but we would like you to kind of summarize in 5 minutes, and your total testimony will be put in the record.

Dee, I just want to take a moment to welcome you to the subcommittee. As always, your expertise and judgment about procurement issues are noted by the subcommittee and greatly appreciated by me. I look forward to hearing your testimony and to working with you on the many issues facing the acquisition community.

Mr. Brock, I understand you will be testifying for GAO with the assistance of Mr. John Stephenson, who is the Director of Natural Resources and the Environment, as he has a special knowledge on this subject matter.

Mr. BROCK. That's correct.

Mr. TOM DAVIS OF VIRGINIA. OK. I would also note that the GAO has done significant work in several areas related to today's proceedings, but given the timing of this hearing, has not yet conducted specific audits in relation to questions posed by this subcommittee.

You can proceed. Thank you.

STATEMENT OF JACK L. BROCK, MANAGING DIRECTOR, ACQUISITION AND SOURCING MANAGEMENT, GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY JOHN B. STEPHENSON, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, GENERAL ACCOUNTING OFFICE

Mr. BROCK. Thank you very much, Mr. Chairman, members of the subcommittee. Mr. Turner talked about the delicate balance between what the Government wants and what it can get, and you referred to the changing landscape, and that landscape has changed. I think it's appropriate that this subcommittee is, in fact, looking at this question because legislation tends to be static and can grow stale over time and not reflect actual events.

So the situation we're in right now is that, for 30, 40, 50 years, the Government controlled research and development. It was that simple. If you control it, if you have the money, if you control the research, you control the agenda, you have the benefit of all of that. When that balance shifts and more of the research is done in the private sector, and you maintain the same way of doing business, then you find that you don't have the access that you used to do.

So right now we have a situation where the intellectual property—that is, the patents, trademarks, trade secrets, copyrights, etc.—they all represent seed corn, and no farmer wants to give up his seed corn. But, yet, the Government wants access to the processes and results of that property in order to promote research and development activities, which in turn really help address an incredible number of issues, all the way from health to national security, etc.

So you want to protect the Government's interest, and in order to do so, in order to get access to that, then you clearly need to also be in a position of protecting the intellectual property right of companies and organizations that you deal with. If you don't do that, you're not going to get access. It's pretty much that simple.

While GAO has not done an exhaustive amount of work in this area, we have looked at two tools that the Government has available that were designed, in fact, to give them access to information

and to protect the intellectual property right of the contractors or the facilities or the grantees. I'm not going to go into great detail on these. They're in my testimony. I know that some of the other witnesses are covering these.

But the first we've looked at was the Bayh-Dole, which was implemented in 1980 and then subsequently and significantly modified by Executive Order 12591 in 1987, which essentially gives organizations, grantees, the right to maintain the patent rights for inventions that are developed by that grantee and, in turn, gives the Government certain rights to access to that information.

Now we have not looked at Bayh-Dole as it relates to commercial companies, but we've done an extensive amount of work looking at Bayh-Dole as it relates to universities. We have found that, for the most part, the major universities are pretty pleased with Bayh-Dole. That's not to say they like everything about it, but in general they think that Bayh-Dole has allowed the universities to significantly contribute to the intellectual capital of the Nation and has allowed both the universities to profit as well as the Government, and as well as society in whole. So to that extent, it was believed to be fairly successful.

We also found in subsequent work that the reporting requirements were incredibly complex. While this isn't maybe the sole reason, we found that both the agencies and the grantees for the most part did not comply with the reporting requirements. So we have a situation where we have a piece of legislation that people believe works, but we don't have statistics on how agencies are exercising their rights under Bayh-Dole or statistics we believe that are correct or accurate. We've also found that the Government is not always aware of the federally sponsored inventions to which it has right.

So that some of the benefits of the Bayh-Dole Act that would, in fact, accrue to the Government are not largely known by the Government, and so that's a particular problem. We did make some recommendations on matters for consideration of the Congress to clarify some of this. As yet, that has not been clarified.

We've also done work on looking at something that is mostly used by the Department of Defense. DOT and NASA also have availability of it, and DOE is asking for it. This is called other transaction authority, and essentially, other transaction authority for limited use, primarily for basic research and development and for prototype development, gives the Department the authority to waive the normal procurement rules. As such, you can exercise an incredible amount of flexibility to provide protection and assurances to commercial companies while at the same time giving the Department in this case access to technologies that it needs in order to develop new systems, new weapons, whatever.

The Department has not used this extensively. I think when we did our report, they had done I think 97 different agreements, totaling $2.6 billion over 5 years. At the same time the total research budget was about $100 billion. So you can get a sense of the magnitude there.

We found that the Department generally believed that they were able to get access to firms that had previously not dealt with the Government and, as such, thought that they were able to get access

to new technologies. What we also found at the same time, that the Department was really not exercising all of the flexibility that it could and, in fact, frequently was trying to use the same methods and techniques that they had been using under contracts negotiated under the typical FAR provisions. So that, in fact, the Department was not making the best use of the other transaction authority.

We recommended in that report two things. First of all, that better guidance be issued by the Department. I'd like to talk about that briefly in just a moment. Second, that the Department develop metrics on this, so that, in fact, they could determine whether or not there was success being generated from the report. Were you achieving the results and the objectives of the legislation?

So I think the real issue that the Department faces now in this is that it has changed; the landscape has changed. The Government does have flexibility. We don't really know, I think, nor does the Department know beyond anecdotal information, as to whether or not the tools that are available are being effectively used. The Department's guide, which you referred to in your opening statement, is I think very good, and I think you need to be congratulated for the quality of that guide. That's just the very first step.

Developing a guide is relatively straightforward, not trivial, but relatively straightforward. Implementing the guide among literally thousands and thousands and thousands of people who may be in a position to, in fact, negotiate contracts with commercial companies and other grantees is very difficult. We've found in the past that the acquisition community tends to become inculcated in existing ways of doing business, and they've found it difficult to exercise the flexibilities they have. That's a real issue that needs to be addressed before you might consider other alternatives.

That concludes my summary, Mr. Chairman. Thank you.

[The prepared statement of Mr. Brock follows:]

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives

For Release on Delivery
Expected at 10:00 a.m., EDT,
Tuesday, July 17, 2001

INTELLECTUAL PROPERTY

Information on the Federal Framework and DOD's Other Transaction Authority

Statement of Jack L. Brock, Managing Director, Acquisition and Sourcing Management and John B. Stephenson, Director, Natural Resources and Environment

GAO-01-980T

Mr. Chairman and Members of the Subcommittee:

Thank you for inviting GAO to participate in today's hearing on intellectual property. The U.S. government has made significant contributions to the world's science and technology base, both by supporting basic scientific research and by pursuing science and technology missions within federal agencies. At one time, federal agencies largely controlled this research and the patented products and processes resulting from it—known as intellectual property. In turn, this work was used to further a wide range of national interests, such as medical research, economic development, technology advancements, and national defense.

However, the research and development landscape has changed over the past two decades. Most research is being done outside of the government's span of control, and the federal government must now increasingly compete with others to obtain the research and technology it needs. And it must do so amid concerns about the burdens associated with federal controls over reporting, development, and commercialization of the intellectual property created under federal contracts. Further, most intellectual property created through federal research projects is now owned by contractors and grantees. This has helped to foster development of new products and processes and ensure that they are available for commercial purposes and scientific study.

I am here today along with John Stephenson, Director, Natural Resources and Environment, to discuss GAO's work related to two vehicles that have been created to bridge this gap. These are (1) the Bayh-Dole Act, which was passed in 1980 and supplemented by Executive Order 12591 in 1987, and (2) "other transaction" authority granted to DOD. The Bayh-Dole Act and Executive Order 12591 allow federal contractors and grantees to own—with certain restrictions—the inventions they create under federally funded research projects. DOD's "other transaction" authority enables DOD to enter into agreements that are generally not subject to the federal laws and regulations governing standard contracts, grants, and cooperative agreements. DOD has used this authority to increase its flexibility in negotiating intellectual property provisions and to attract commercial firms that traditionally did not perform research for the government. However, our work has shown that DOD needed better guidance to promote more effective use of the authority. DOD has taken actions to respond to our concerns, which I will also discuss.

The Bayh-Dole Act and Executive Order 12591

Prior to 1980, the government generally retained title to any inventions created under federal research grants and contracts, although the specific policies varied among the agencies. Over time this policy became increasingly a source of dissatisfaction. One, there was a general belief that the results of government-owned research were not being made available to those who could use them. Second, advances attributable to university-based research funded by the government were not pursued because the universities had little incentive to seek uses for inventions to which the government held title. Finally, the maze of rules and regulations and the lack of a uniform policy for government-owned inventions often frustrated those who did seek to use the research.

The Bayh-Dole Act[1] was intended to address these concerns by creating a uniform patent policy for inventions resulting from federally sponsored research and development agreements. The act was applicable to small businesses, universities, and other nonprofit organizations and generally gave them the right to retain title to and profit from their inventions, provided they adhered to certain requirements. The government retained nonexclusive, nontransferable, irrevocable, paid-up (royalty-free) licenses to use the inventions.[2]

The Bayh-Dole Act was extended to large businesses by a Presidential Memorandum issued to the executive branch agencies on February 18, 1983. It extended the patent policy of Bayh-Dole to any invention made in the performance of federally funded research and development contracts, grants, and cooperative agreements to the extent permitted by law. In 1984, the Congress amended the Bayh-Dole Act to include contractors operating government-owned laboratories. The 1984 amendments also specified that the act did not preclude agencies from allocating rights to inventions, as provided in the Presidential Memorandum, but that organizations acquiring these rights would be subject to certain requirements of Bayh-Dole. On April 10, 1987, the President issued Executive Order 12591, which, among other things, required executive

[1] The Bayh-Dole Act is the common name for the Patent and Trademark Laws Amendments of 1980 (P.L. 96-517, Dec. 12, 1980).

[2] The act is implemented through regulations issued by the Department of Commerce in 1987 (37 C.F.R. part 401). Similarly, the patent rights policies set out by the act and Executive Order 12591 are embodied in parts 27 and 52 of the Federal Acquisition Regulation. The regulations define the rights and responsibilities of the parties.

agencies to promote commercialization in accordance with the 1983 Presidential Memorandum.

Below are highlights of requirements related to the Bayh-Dole Act and Executive Order 12591.

Figure 1: Highlights of Requirements

- The contractor or grantee must disclose to the appropriate federal agency any invention created with the use of federal funds within 2 months of the date the inventor discloses the invention in writing to the contractor or grantee.
- If the contractor or grantee decides to retain title to the invention, it generally must notify the agency within 2 years of the date of disclosure that it has elected to do so.
- The contractor or grantee must apply for a patent on the invention within 1 year of its election to retain title or within 1 year of the publication, sale, or public use in the United States, whichever is earlier.
- In applying for a patent, the organization must add a government interest statement that discloses the government's rights to the invention.
- The contractor or grantee must attempt to develop or commercialize the invention.
- If the contractor or grantee is a nonprofit organization, it generally must give priority to small businesses when licensing the invention.
- When granting an exclusive license, the contractor or grantee must ensure that the invention will be "manufactured substantially" in the United States.

No single federal agency is responsible for monitoring compliance with the Bayh-Dole Act or Executive Order 12591, although the Department of Commerce was given the responsibility for drafting Bayh-Dole regulations. Rather, the agency responsible for funding the contract or grant that led to the invention is responsible for ensuring that the requirements are followed. If the contractor or grantee does not disclose the invention, does not elect title within the established periods, or elects not to retain title, the agency may acquire title to the invention if the agency makes a written request within 60 days after it learns of the failure of the contractor or grantee to make the proper disclosures or elections. The agency can also require the contractor or grantee to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant under terms that are reasonable under the circumstances if, for example, the organization does not develop or commercialize the invention or if action is needed to alleviate health or safety concerns. This is known as the government's "march-in" right.

Our work on the Bayh-Dole Act has focused on the reporting requirements contractors and grantees are required to follow.[3] We found that contractors and grantees were not always abiding by the reporting requirements and that the royalty-free licenses retained by the government were of little, if any, use in federal procurements. We noted that the Congress might wish to consider standardizing, improving, and streamlining the reporting process under the act and executive order, which we believe would make the process less burdensome and more useful to both the government and its contractors and grantees.

DOD's Use of Its Other Transaction Authority

Over the past decade, both Congress and DOD expressed concern that government-unique procurement requirements—often implemented through specified contract provisions—inhibited DOD's ability to take advantage of technological advances made by the private sector and increased the costs of goods and services DOD acquired. For example, traditional defense contractors reported that they required additional personnel to comply with government financial management requirements, while commercial companies reportedly declined to accept DOD research contracts in order to protect their intellectual property. Many requirements could be waived or tailored through existing contracting procedures, but both DOD officials and potential contractors found this to be difficult and time consuming.

One approach to address these concerns has been the use of "other transactions." Other transactions are not generally subject to the federal laws and regulations governing standard procurement contracts, grants and cooperative agreements. DOD officials believe the use of other transactions provides additional flexibility to negotiate terms and conditions, including those pertaining to intellectual property; and, thereby, helped attract firms that traditionally did not perform research for the government.

There are two basic types of other transactions. The first type had its origins in 1989, when Congress enacted legislation—codified at 10 U.S.C. 2371—to provide the Defense Advanced Research Projects Agency (DARPA) temporary authority to enter into cooperative

[3] These include our May 1998 report, *Technology Transfer: Administration of the Bayh-Dole Act by Research Universities* (GAO/RCED-98-126, May 7, 1998); and our August 1999 report, *Technology Transfer: Reporting Requirements for Federally Sponsored Inventions Need Revision* (GAO/RCED-99-242, Aug. 12, 1999).

agreements[4] and "other transactions" for advanced research projects. The legislation did not define "other transactions," thus giving DARPA flexibility to deal with unique situations encountered when fostering technology, especially dual-use technology. The legislation also required that, to the extent the Secretary of Defense determined practicable, recipients should provide at least 50 percent of the project's funding. In 1991, Congress made the authority permanent and subsequently extended it to the military services. Other transactions entered into under 10 U.S.C. 2371 are assistance instruments, which are used when the principal purpose is to stimulate or support research and development activities for both public and government purposes. Other transactions could only be used when other instruments were not appropriate or feasible.

In 1993, under Section 845 of the National Defense Authorization Act for Fiscal Year 1994,[5] Congress authorized a second type of other transaction to carry out prototype projects directly relevant to weapons or weapon systems proposed to be acquired or developed by DOD; that is, for government-unique purposes. The legislation did not require participants to share in the costs of the project or require that the agreements be used when a standard contract, grant, or cooperative agreement was not appropriate or feasible, two conditions required to use an assistance-type other transaction. These "Section 845 agreements" were initially limited to use by DARPA for a 3-year period; legislation has since been passed to extend their use to the military services and other defense agencies and to extend the authority's expiration date to September 30, 2004.

GAO Findings Related to DOD's Use of Other Transactions

We have reported twice on DOD's general use of its other transaction authority.[6] Overall, while a number of benefits were cited, including the ability to tailor intellectual property clauses and to attract firms that traditionally did not perform research for the government, we also found that DOD needed more specific guidance to help its personnel select and

[4] Subsequent legislative changes enabled DOD to use cooperative agreements as part of its basic authority under 10 U.S.C. 2358 to conduct research.

[5] P.L. 103-160, Nov. 30, 1993.

[6] We have also reviewed DOD's proposed use of an other transaction for its Evolved Expendable Launch Vehicle program, but we did not address intellectual property matters (see *Evolved Expendable Launch Vehicle: DOD Guidance Needed to Protect Government's Interests* (GAO/NSIAD-98-151, June 11, 1998).

structure the instruments appropriately and assess the benefits from using the agreements.

In March 1996, we reported on DOD's use of 72 cooperative agreements and other transactions that were entered into under 10 U.S.C. 2371 between fiscal years 1990 and 1994. We found that the instruments appeared to have provided DOD a tool to leverage the private sector's technological know-how and financial investment, and attracted firms that traditionally did not perform research for the government by enabling more flexible terms and conditions than the standard provisions found in DOD contracts and grants.

As an example, we cited a 1994 DARPA other transaction with a Hewlett-Packard-led consortium to advance the state of the art in the manufacture of more affordable optoelectronics systems and components. Hewlett-Packard had previously told us that it declined to accept government research and development funds to protect its technical data rights.[7] Under the agreement, however, the intellectual property provisions were structured so that

- the consortium had up to 4 months (rather than the 2 months typically allowed) after the inventor discloses a subject invention to his company to notify the government;
- the consortium had up to 24 months (versus 8 months allowed for large businesses) to inform DARPA whether it intends to take title to inventions arising from the agreement after its disclosure to the government;
- DARPA agreed to delay exercising its government purpose license rights to inventions in which the consortium retained title until 5 years after the agreement was completed; and
- the consortium had the authority to maintain inventions and data as trade secrets for an unspecified period of time under certain conditions.

[7] With regard to technical data, DOD generally obtains unlimited rights when technical data were developed or created exclusively with government funds, government purpose rights when the data were created with mixed funding, and limited rights when the data were created exclusively at private expense. These rights differ in the degree to which DOD may provide or authorize parties outside of the government to use the data. Unlimited rights provide the government the ability to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so. Government purpose rights enable the government to allow others to use the data for government purposes, while limited rights generally require the government to obtain the contractor's written permission before doing so.

Further, under the agreement, DARPA did not receive any rights to any technical data produced under the agreement unless DARPA invoked its "march-in" rights. In combination, these terms provided the consortium additional time to commercialize the technology, while limiting the government's rights to that technology.

Overall, we estimated that 42 percent of the 275 firms commercial firms that participated in 1 or more agreements were firms that traditionally had not performed research for DOD. We did not, however, attempt to determine to what extent more flexible intellectual property provisions played a role in each firm's decision to participate or evaluate how each of the agreements addressed intellectual property issues.

We identified two emerging issues that pertained to instrument selection and structure of cooperative agreements and other transactions.[8] First, DARPA and the military services were selecting different instruments and treating specific issues, such as audit requirements, differently, thereby resulting in some confusion among firms that were negotiating agreements with both DARPA and the services. Additionally, we found that there remained disagreement between the military services and DARPA on whether the Bayh-Dole Act applied to other transactions. Consequently, we recommended that DOD provide revised guidance, in part, to promote increased consistency among DOD components on the selection and structure of the instruments. DOD has since issued guidance on several occasions, most recently in February 1999. In general, this guidance established a single class of assistance instruments called "technology investment agreements" to reduce confusion and increase consistency in the types of assistance instruments used by DOD, and clarified that DOD personnel could provide more flexible terms than would be available under Bayh-Dole should the situation warrant it.

In April 2000, we reported on DOD's use of 97 Section 845 agreements that had been awarded as of October 1998.[9] As part of this review, we discussed the extent to which DOD had used Section 845 agreements, for

[8] We also noted that about 10 percent of the recipients' planned contributions was attributable to the value of past research efforts, rather than concurrent financial or in-kind contributions. We noted that this practice may not provide accurate depiction of the relative financial contributions of the parties under the agreement. Current DOD guidance does not allow the cost of prior research to count as part of a recipient's cost-share.

[9] *Acquisition Reform: DOD's Guidance on Using Section 845 Agreements Could be Improved* (GAO/NSIAD-00-33, Apr. 7, 2000).

what types of projects, their dollar value, and the reasons cited by DOD components for using Section 845 agreements, among other things. We also reported on how DOD tailored these agreements to address intellectual property issues and the degree to which DOD attracted commercial firms.

To determine how the agreements addressed intellectual property issues, we compared the agreement's language with the standard contract provisions required under the Federal Acquisition Regulation to assess whether and how they differed. We found that DOD personnel incorporated the applicable standard contract provision governing patent rights in 25 agreements. In the other 72 agreements, DOD incorporated language that varied widely. For example, DOD personnel often provided contractors between 4 to 12 months to notify the government of an invention under Section 845 agreements, compared to 2 months provided in a standard procurement contract. In some cases, the contractor was allowed to maintain inventions as trade secrets; in other cases, the government declined patent rights altogether. Finally, some agreements clarified the definition of an invention to specifically exclude pre-existing inventions. With regard to obtaining rights to technical data under Section 845 agreements, most agreements used tailored clauses, which could involve DOD declining any rights to data or accepting government purpose rights for 10 years.

Similar to what we found in our earlier report, DOD personnel attributed, in part, the participation of commercial firms to their ability to tailor the agreement's terms and conditions, including the intellectual property provisions. For example:

- A small commercial firm submitted an unsolicited proposal to DARPA to develop and demonstrate an unmanned aerial vehicle capable of vertical take-off and landing based on the company's existing proprietary technology. The company, however, was unwilling to work under a standard contract, citing, among other factors, intellectual property concerns. DARPA agreed to not accept any technical data in the $16.7 million agreement; however, the agreement provided DARPA options to subsequently acquire government purpose rights to the data at a cost ranging from $20 million to $45 million or by purchasing 300 vehicles. According to the agreement, the rights would be sufficient to establish a second source for competition.
- In January 1997, the National Imagery and Mapping Agency solicited proposals to develop and exploit commercial information technologies for national security purposes. Contractor representatives suggested that

using a Section 845 agreement would help their consortium attract commercial firms, in part by being able to provide more flexible intellectual property provisions. The resulting Section 845 agreement had a potential value of $75 million. Contractor officials indicated that about half of the work is being performed by business units that for various reasons would not have participated under a standard contract.

Overall, however, we reported that Section 845 agreements achieved mixed results in attracting commercial firms that traditionally did not do research for the government at either the prime contractor or subcontractor level. For example, 84 of the 97 agreements were awarded to traditional defense firms. At the subcontractor level, DOD officials indicated that traditional defense firms attracted commercial firms in 24 of the 84 agreements they were awarded. For the remaining agreements, DOD officials reported that either the prime contractor did not attract commercial firms at the subcontract level (20 agreements) or they did not know whether the prime contractors had attempted to do so (34 agreements). Agreement officers did not provide information on six agreements.

Additionally, we found that DOD analyses supporting these arrangements often did not address why either the standard contract provision or a tailored approach was selected, or discuss the anticipated benefits of the approach selected. In part, this was due to the use of a model agreement that was developed by DARPA and which formed the basis for many of the agreements. Consequently, our review of the agreement officers' analyses found that discussions were often limited to how the terms differed from the model agreement.

At the time of our review, DOD was in the process of developing additional guidance to enable its personnel to both take advantage of the flexibility afforded by the agreements and protect the government's interests. We recommended that this guidance, among other things, provide a framework to tailor the terms and conditions appropriate for each agreement. We also recommended that DOD establish and use a set of metrics, including the number of commercial firms participating in Section 845 agreements, which are measurable and directly related to the agreement's use.

In December 2000, DOD issued guidance that is intended to provide a framework for DOD personnel to consider when using Section 845 agreements. Our initial observations of the section dealing with intellectual property indicated that it does provide various factors for DOD

personnel to consider when structuring and negotiating intellectual property provisions. In general, the guide indicates that DOD personnel should seek to obtain intellectual property rights consistent with the Bayh-Dole Act for patents and 10 U.S.C. 2320 and 10 U.S.C. 2321 for technical data, but notes that they may also negotiate rights of a different scope when necessary to accomplish program objectives and foster government interests. For example, the guide notes that when the government overestimates the intellectual property rights it will need, the government might pay for unused rights and dissuade new business units from entering into an agreement. At the same time, DOD personnel needed to consider such factors as the costs associated with the inability to obtain competition for the future production, maintenance, upgrade and modification of prototype technology, or the inability of the government to adapt the developed technology for use outside the initial scope of the prototype project. The guide also requires DOD personnel to collect information on the prime contractor and commercial firms that participate to a significant extent in the prototype project.

I would also like to note that on April 30, 2001, DOD issued a guide that specifically focused on intellectual property issues. This guide was in response to a September 2000 memorandum issued by the Under Secretary of Defense (Acquisition, Technology and Logistics) that called for DOD to create an environment where industry is willing to share commercially generated research with defense communities so that weapons systems can keep pace with technology. The guide provides a description of the fundamental principles and concepts of negotiating intellectual property rights, a framework of the key aspects of intellectual property and how it is treated in government contracting, a description of the major intellectual property issues that keep some companies from responding to solicitations, as well as possible solutions to attract their involvement. The guide provides DOD personnel another resource to identify ways to negotiate provisions that meet each parties' needs, whether on standard procurement contracts or on other transactions.

Before concluding, I would like to note two recent legislative changes that affect DOD's use of Section 845 agreements that were not related to intellectual property issues, but more to the overall management and oversight of Section 845 agreements. First, Congress passed legislation in October 1999 that required that agreements that provide for payments in excess of $5 million include a clause providing GAO the right to examine

the records of participants.[10] This requirement can be waived under certain circumstances. In recommending the provision, the Senate Armed Services Committee noted that DOD had used Section 845 authority to fund such efforts as the billion dollar Evolved Expendable Launch Vehicle program and a new Navy oceanographic research ship, and had sought legislation to extend the authority to production contracts. Consequently, as the size, costs and complexity of programs being funded using other transactions increased, the committee wanted to ensure that GAO had audit access in relation to the higher levels of spending and risk.

Additionally, in October 2000, Congress passed legislation that required that a Section 845 agreement include at least one nontraditional defense contractor participating to a significant extent in the effort; if not, at least one third of the total cost of the project was to be provided by parties other than the federal government.[11] The requirement for cost-sharing could be waived by DOD's senior procurement executive. The legislation also defined what constituted a nontraditional defense contractor and clarified our audit access rights to exclude commercial firms who had done business with government only under other transactions or through cooperative agreements, and clarified the types of records to which we had access. In recommending a similar provision, the Senate Armed Services Committee noted it would support using Section 845 agreements to attract companies that typically do not do business with DOD, and encourage cost sharing and experimentation in potentially more efficient ways of doing business with traditional defense contractors. The committee also noted that it was important for DOD to have the flexibility to use innovative instruments to provide access to advanced commercial technology, but that there were improvements that could be made in managing and overseeing Section 845 agreements.

Conclusion

The research and development environment has changed dramatically over the past several decades. The government is no longer in the driver seat, yet it still needs access to research and technology advances. At the same time, its effort to compete for access must be balanced against a range of commercial, economic, legal and other interests. The vehicles I've discussed today are among the tools that the government can use to attract new players to the research and development arena and to maintain access to advances. However, effective use of these tools

[10] P.L. 106-65, October 5, 1999.

[11] P.L. 106-398, October 30, 2000.

requires good training and a greater exercise of reasoned discretion among program officials and contracting officers. The Department of Defense has taken a very good first step in developing appropriate guidance. However, the next steps are more critical: providing the training and assurances that the guidance will be appropriately implemented.

Mr. Chairman, this concludes our prepared statement. We will be happy to respond to any questions you or other Members of the Subcommittee may have.

Contact and Acknowledgment

For further information, please contact Jack L. Brock, Jr., at (202) 512-4841 or John B. Stephenson at (202) 512-6225. Individuals making key contributions to this testimony included Timothy DiNapoli, Doreen Feldman, Frank Fulton, John Hunt, Shannon Luik, John Van Schaik, Cristina Chaplain, and Karen Zuckerstein.

Mr. TOM DAVIS OF VIRGINIA. Ms. Lee.

STATEMENT OF DEIDRE LEE, DIRECTOR, DEFENSE PROCUREMENT, DEPARTMENT OF DEFENSE

Ms. LEE. Thank you. Good morning, Chairman Davis, members of the subcommittee. Thank you for the opportunity today to talk about the Department's current practice regarding intellectual property and the initiatives we're pursuing in this area. As has previously been highlighted, this is a very complex area, and we're continuing to learn more and evolve and think about what we really need to do to ensure that our commercial counterparts are able and willing to engage in activities, particularly for the Department of Defense.

As you know, today's intellectual property rights and contracts are largely based in statutes. We have patent laws: the Bayh-Dole Act of 1980 and Title 35. We have copyright laws in Title 17, and we have other various provisions in Title 10 regarding technical data. These intellectual property provisions are intended, just as Mr. Turner said, to really balance some conflicting needs in the Government.

First, the wide distribution of information that has been funded by Government-funded research, we believe it should be widely distributed and shared so all can benefit. The other, second, to provide incentives to individuals and companies to apply their innovative technology to Government work. If we protect their creative work, they are more likely to be willing to share that with us. We're trying to balance that wide distribution with properly protecting rights.

Of course, during all this the Department has to get enough information so that we can create an atmosphere where we can achieve our mission. Examples are, when we have very unique items out on the ship at sea or something, we have to have enough information to be able to maintain it. Where does that meet with commercial rights and departmental information, and how do we control that and make sure we address that properly?

It's difficult to determine the correct balance in every acquisition. As has previously been stated here, in the fifties and sixties our environment has changed. The Government was much more of a leader; now we're not as much in control of their R&D dollars that are invested in our economy.

So what have we done so far? We're taking serious action, looking at intellectual property. We've taken several actions, and we're trying to, No. 1, start just exactly where Mr. Brock recommended, with let's make maximum use of the flexibilities we have today. So we have issued several memorandum in September 2000 and January 2001. So on Department time, it's a relatively new issue that we're addressing, and we've tried to emphasize the need to make sure that people in the field understand. We have to have people willing to participate with the Department, and a key environment of putting that trust forward is ensuring that we can properly protect their data.

As everyone has mentioned, our guide here is kind of the second piece of things that we've put out. In fact, Will Anderson is here in the field, and he's got to get a lot of credit for really honchoing

this through, and he has supported that from putting a guide out. It basically is trying to be an education tool to our people on what their flexibilities are.

We also mentioned the other transactions. We're learning there: How do we use other transactions? As we've been trying to use other transactions, we've also gotten some additional legislation that we believe kind of limits our scope, including some cost-sharing and some other activities. So we're having some challenges in using the other transactions, and we want to also make sure their people use them appropriately, not as a reason to avoid other procurement laws. So that's our current push.

We have some other ongoing initiatives. As was mentioned here, training; we have identified the need for training. Intellectual property is very, very complex. Yet, little training is currently offered, and we recognize that's an urgent need and that we need to look at that.

We're also taking two steps of rewriting part 27 of the FAR. The first, humble step that it may be, is to just try to get it more in plain language. It is now currently written in a very complex fashion. So, again, Will Anderson is helping lead that group. Then, the second step will be to identify ways that we can simplify those regulations as well.

We've also been having numerous discussions with various firms to try to understand what their issues are, and I think you have a good representation here today. We've been meeting with groups such as the ABA to talk about reforming intellectual property rights, and what are their opinions, and there are numerous active communities that are truly looking at this. So we think that's a good way to look to others and get their information.

We are also reviewing input from the subcontractor community, because it's not just the Government to the prime; it's the prime to the subcontractor, and we have to understand how those intellectual property rights are impacted.

So we're certainly welcome to be here. I personally am thrilled with the committee's interest and support in this area. It is a very complex area. So, in closing, I'd like to thank the committee for this opportunity, and we look forward to working with you on finding—and our industry partners—on finding solutions in the area of intellectual property. Thank you.

[The prepared statement of Ms. Lee follows:]

TESTIMONY OF THE DIRECTOR, DEFENSE PROCUREMENT
OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR
ACQUISITION, TECHNOLOGY & LOGISTICS
BEFORE THE U. S. HOUSE OF REPRESENTATIVES
COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY
17 JULY 2001

TESTIMONY OF THE DIRECTOR, DEFENSE PROCUREMENT
OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR
ACQUISITION, TECHNOLOGY & LOGISTICS
BEFORE THE U. S. HOUSE OF REPRESENTATIVES
COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY
17 JULY 2001

Mr. Chairman and Members of the Committee:

I will briefly address the Department of Defense's current practices regarding intellectual property and the initiatives we are pursuing in this area.

Today's intellectual property rights in contracts are based largely on statutes. Congress enacted patent laws, including the Bayh-Dole Act of 1980, codified in Title 35 of the U.S. Code, copyright laws, codified in Title 17 of the U.S. Code, and various provisions codified in Title 10 dealing with technical data. These intellectual property provisions were intended to balance two Governmental goals. The first is the desire of the Government to widely distribute the results of Government funded research efforts in order to generate the maximum benefit from such investments. The second is the need to provide incentives to individuals and companies to be innovative by protecting their creative works and allowing them thereby to profit from their investments. In addition, the laws require that Department of Defense obtain sufficient intellectual property rights under it contracts to ensure that it can achieve its mission.

It is often difficult to easily determine the correct balance in a particular acquisition. In the 1950s and 1960s research programs funded by the Department were the driving forces in expanding and promoting technology solutions and thereby helped promote the U.S. economy. Today, this is less frequently the case. Leadership for developing new technology has shifted to industry which funds the majority of the research and development effort. We have begun the process of determining how intellectual property rights should be handled to ensure industry and government can fully benefit from technology.

Actions Taken.

We have taken several actions to ensure that we use all the flexibility that currently exists in the current laws and regulations dealing with intellectual property. First, we issued policy memoranda dated September 5, 2000, and January 5, 2001, that emphasize the need to create an environment where companies are willing to share commercially developed research with Department of Defense communities. A key aspect of creating such an environment involves protecting the intellectual property rights of the commercial companies with whom we are doing business. We have also issued a guide dated April 30, 2001, entitled, "Intellectual Property: Navigating Through Commercial Waters." As described in the subtitle to this guide, "Issues and Solutions When Negotiating Intellectual Property With Commercial Companies," this guide explains the flexibility available in the current intellectual property rules that may be used when contracting with commercial, non-traditional defense companies.

An example of this flexibility is the emphasis on obtaining supplies and services through the use of performance specifications. Using performance specifications greatly reduces the Governments need for underlying intellectual property.

The Department has special authority pursuant to 10 U.S.C. 2371 to award transactions (commonly called "other transactions") for research projects or prototype projects directly relevant to weapons or weapon systems. This authority provides the Department tremendous flexibility in the terms and conditions negotiated, but there are conditions associated with its use enacted in law. Transactions awarded pursuant to this authority are exempt from the Bayh-Dole Act. Where it has been appropriate, we have made use of this authority.

Initiatives.

We also have several ongoing initiatives. We have identified a need to update current training curriculum to address intellectual property rights. Intellectual property is a very complex area, yet little training is offered. We have established a team to ensure that all future training addresses both the changed business environment and the flexibility that the current laws and regulations provide for dealing with intellectual property rights.

In addition, we are currently pursuing a rewrite of the Subpart 27 of the Federal Acquisition Regulation which deals with intellectual property rights. This is a two-phase effort. First, we have undertaken an effort to rewrite the Federal Acquisition Regulations in plain language so that government acquisition personnel are better able to understand the flexibility that the current laws and regulations provide when dealing with intellectual property rights. The team working on the rewrite has completed an initial draft and this draft is currently under review. Second, we have an effort underway to identify and pursue areas where the regulations can be improved and streamlined.

We also have had a dialogue with various firms that have declined to conduct business with DoD because of intellectual property concerns. These discussions have provided a better understanding of the changed conditions in industry and provided us insight into the need for increased flexibility in dealing with intellectual property rights. We are meeting with groups such as the American Bar Association who are working to reform intellectual property rights to garner their ideas and understand issues. We welcome dialogue with all interested parties, as this is the best way to identify areas of concern and to work for resolution of these concerns.

We are also working to determine whether any legislative proposals relating to intellectual property are necessary to address the changed business environment surrounding how we obtain the advanced technology necessary to meet our needs including evaluating DoDs flexibility to negotiate on a case by case basis. We are reviewing the input obtained from the subcontractor community about their concerns in dealing with prime contractors. We welcome the Committee's support in this effort and would be happy to discuss specific suggestions in this area with the Committee.

In closing, I wish to thank the committee for this opportunity to talk about the issues concerning intellectual property. This is an area of great concern to DoD and I look forward to the opportunity to work with you and our partners in industry in finding solutions to these issues.

Mr. TOM DAVIS OF VIRGINIA. Mr. Fygi.

STATEMENT OF ERIC J. FYGI, DEPUTY GENERAL COUNSEL, DEPARTMENT OF ENERGY

Mr. FYGI. Thank you, Mr. Chairman. I've listened with interest to these introductory remarks as well as yours and Mr. Turner's. The Energy Department's predecessor of the Atomic Energy Commission was distinctive in that its first organic act in 1946 was very substantially directed to intellectual property and, in particular, the allocation of rights to inventions in the nuclear field that first was receiving a statutory charter at that time. That event, and the fact that much of the Department's mission is actually the conduct of basic research itself, which it does through entities like the National Laboratories that happen to be operated by contractors, has resulted in the intellectual property matters being prominent and occasionally controversial in all of the Department's activities.

That had been reflected in a series of statutory charters, beginning with the Atomic Energy Act, extending through the Non-Nuclear Energy Research and Development Act of 1974, in which, contrary to then-emerging trends, we were required to retain Government ownership of all patents as a general starting point, and only thereafter able to have some statutory waiver authority to make the result conform as much as possible to the President's patent policy first issued in the early eighties, to which you've already alluded.

That's the background and, further, that's a factor that further complicates the already intricate statutory matrix that has been overlaid by subsequent enactments such as the Bayh-Dole Act and the Technology Transfer Act of 1989, as has been eloquently attested to by my colleague from the Defense Department.

Whether, however, it's entirely correct to understand the problem as this intricacy comprising an inappropriate impediment to private sector participation and Government-funded research activities raises a somewhat more difficult question, and that is: how one harmonizes what ordinarily would be a perfectly logical business plan and practices held by a private industrial or commercial entity regarding its conduct of its own intellectual property portfolio with the principle that the reason these Government contractors receive public funds is to pursue a public purpose, frequently established explicitly in statutes that may well mandate results at odds with that particular corporate entity's own patent portfolio of intellectual property practices.

It's harmonizing those occasionally competing considerations that is the essence of the task that the subcommittee has described. I very much appreciate the fact that the subcommittee is beginning that task in a careful and measured manner, and we certainly in the Energy Department will contribute in any way the subcommittee should wish in this respect.

[The prepared statement of Mr. Fygi follows:]

STATEMENT

OF

ERIC J. FYGI

DEPUTY GENERAL COUNSEL

DEPARTMENT OF ENERGY

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

COMMITTEE ON GOVERNMENT REFORM

U.S. HOUSE OF REPRESENTATIVES

JULY 17, 2001

Thank you for inviting the Department of Energy (DOE) to participate in this hearing to examine the degree to which the Federal Government and DOE's intellectual property (IP) policies affect the ability of the Government to attract non-federal partners to vital government research and development (R&D) efforts. We welcome the Committee's interest in this subject – not only is R&D at the core of the Department's missions, but the elimination of barriers that might inhibit commercial firms from collaborating with DOE coincides with our own recent initiatives.

Introduction

Before addressing the specific topics identified in your July 9 letter of invitation, a few general comments relating to our IP policies and initiatives are needed to put these issues in context.

The intellectual property policies and contract provisions applicable to government research programs must strike a careful balance of the often competing interests: of promoting broad dissemination of scientific information to spur derivative research by our universities and the commercial sector with the need for exclusivity and trade secret confidentiality as an inducement to private investment to bring the fruits of government research efforts to ultimate public benefit; of protecting taxpayer investment by assuring new technology is further developed with the need of the private sector to limit encumbrances attached to technology developed with government support; and of the need of the Government to itself fully utilize technology developed with government investment with the need of industry to protect its competitive advantage in intellectual property resulting from private investment made prior to and without government investment.

In balancing these interests, DOE's first obligation, of course, is to faithfully pursue its own statutorily-directed missions, each of which may require tailored intellectual property policies and procedures to ensure the accomplishment of the individual mission goals and objectives. For example, basic or fundamental research, which is more likely to involve academic and nonprofit institutions than commercial entities, creates a seed bed of knowledge from which new commercial technologies may ultimately emerge. To maximize the ability to exploit that fundamental knowledge, broad dissemination of the new scientific data and knowledge with minimal private encumbrance is the principle which has governed the Department's historic intellectual property policy in the basic sciences. Conversely, applied research intended to spur, for example, the development and expeditious deployment of alternative energy or energy saving technologies, an area more likely to involve commercial entities, has benefitted from leaving with the creating party maximum intellectual property rights to induce the further private investment of private risk capital necessary to achieve the desired public goal. Similarly, research intended to produce technology for direct use by DOE, such as in our environmental clean-up and stockpile stewardship programs, has led to intellectual property policies that give DOE access to the technologies not available within the Government emerging from the private sector, that spur speedy development and application of new technology needed by DOE, but also assure that long term projects can be completed at minimum cost to the taxpayer and despite changes of contractors. Thus, to further these diverse facets of its missions, DOE believes substantial flexibility to craft and execute intellectual property policies to ensure mission goals is indispensable.

Pursuit of these aspects of DOE's missions has resulted in a series of statutory and regulatory initiatives beginning in the 1970s. A recent example of an administrative initiative is that begun on May 8 of this year to seek critical public comment on DOE's "assistance" – the counterpart of procurement – regulations that govern much of the Department's direct research partnerships with commercial entities. Here the Department's Office of Procurement and Assistance Management, through a "Notice of Inquiry and Opportunity for Public Comment," asked for public comment on a proposed effort to revise DOE's Assistance Regulation as it relates to for-profit organizations, with the goal of "eliminating barriers which prevent these organizations from participating in the Department's Assistance programs." In the Assistance Regulation Notice, DOE highlighted intellectual property issues as an area where simplified procedures and changes to DOE policy might enhance our ability to attract the broadest spectrum of research partners. A copy of this Notice is attached to this statement for the record.

Topics for Discussion

With respect to the specific items identified in the Committee's letter of invitation, we provide the following thoughts:

1. **Training of the acquisition workforce on existing regulations that govern flexibility with IP contract clauses**

The Department's predecessor technology agencies had a long history of dealing with

intellectual property issues, including a statutory framework on patents originating in the 1940's. DOE is well-suited to thoughtfully address intellectual property matters. Organizationally there is an assigned DOE Patent Counsel to assist each DOE contracting office throughout the DOE complex for both pre- and post-award IP matters. The Deputy General Counsel for Technology Transfer and Procurement and the Assistant General Counsel for Technology Transfer and Intellectual Property at Headquarters and the field Patent Counsel provide an expert cadre of attorneys that is capable of assisting contracting personnel to assess the often competing intellectual property objectives and the legal requirements governing the Department. The Department's contracting personnel are trained to recognize intellectual property issues, then to consult Patent Counsel, and to work together with DOE program officials to ensure constructive resolution of issues and concerns.

Recognizing that the subject of intellectual property is a rather complex matter, the Department has provided guidance to its contracting officers in the form of a DOE Contract Administration Handbook. There is a chapter in the Handbook which contains a detailed discussion of intellectual property matters, including an explanation of DOE's standard contract clauses and their application. The guidance also includes a discussion of the importance of addressing intellectual property matters in the negotiations leading to contract award to mitigate the impact of issues that may arise after contract award. To ensure that contracting personnel are aware of their responsibilities in the award and administration of our contracts, including responsibilities associated with intellectual property matters, DOE has provided training to its field contracting activities. In addition, DOE Headquarters and field Patent Counsel frequently provide

specialized IP training to their assigned contracting offices. Finally, in a series of rulemakings between 1995 and 2000, the Department has revised and updated its patent and data regulations to ensure the regulations correspond to current law and reflect appropriate flexibility such that the Department can encourage, rather than impede, technology transfer.

2. The application of IP clauses to previously developed IP, background inventions, and trade secrets

Background IP is IP that has been developed by a partner at private expense outside of an agreement with the Government. Background IP clauses are currently used by DOE in two circumstances. First, these clauses are used in agreements for the direct benefit of DOE, such as in contracts for the operation of a DOE facility or a clean-up project. Here the background clauses provide the Government with the right to continue to use any technology incorporated into the facility or project, but only for continued operation of that facility or continuation of the Government's project. In this case the background clauses contribute to seamless and cost minimized operation with minimal disturbance to government operations occasioned by a change of partner.

Secondly, background clauses have been routinely included in research arrangements intended to develop technologies for commercial application. Here, the background IP clauses are analogous to an insurance policy, allowing DOE to require the partner to license third parties at a reasonable royalty to the extent a license to the background IP is necessary to practice the results

of the research effort. Such a clause would only be invoked if the partner has abandoned, or is not meeting market demand for, the technology developed in the government-sponsored research program. DOE has never invoked these background clauses in research agreements in the 25 years of their use. As the Assistance Regulation Notice indicates, DOE is reconsidering the routine use of background clauses in the research arena in an effort to better balance the safeguards these clauses provide against the price of potentially discouraging commercial entities from partnering with DOE.

3. Retention of patent rights by contractors vis-a-vis subcontractors

A discussion of this issue must start with an understanding of the legal framework governing patent rights arising from government-funded activities. The Bayh-Dole Act (35 U.S.C. 200 *et seq.*) and Executive Order 12591 establish the general principle that, in a funding agreement (contract, grant or cooperative agreement) and subcontracts thereunder, the party making an invention should be the owner of the invention. The Federal Acquisition Regulation further adds at section 27.304-4(c) that a contractor may not use its ability to award subcontracts as economic leverage to acquire rights to itself in inventions resulting from subcontracts. DOE generally follows these principles. However, through the exercise of our authority to waive title to inventions that otherwise are required to be owned by the Government under section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182) and section 9 of the Federal Nonnuclear Research and Development Act of 1974 (42 U.S.C. 5908), DOE has allowed contractors providing substantial cost sharing to obtain rights in inventions made by their subcontractors. This right to

obtain rights in subcontractor inventions has not been extended to cover subcontracts involving small businesses, universities, nonprofits and DOE national laboratories that are the protected group covered by the Bayh-Dole Act. We understand that contractors providing substantial cost sharing are often troubled by their inability to be guaranteed a royalty-free license to inventions made by the protected group where the invention was substantially funded by the contractor.

4. Rights in technical data, including commercial and noncommercial items, and noncommercial computer software and its documentation

DOE respects the ownership rights of its partners in technical data and computer software developed at private expense outside of a government agreement. DOE only obtains license rights in proprietary data as necessary to satisfy its mission requirements. With respect to technical data and computer software first produced under an agreement with the Government, DOE has traditionally interpreted a variety of its enabling statutes as requiring the Government to obtain unlimited rights in such data and not allowing partners to obtain any preferred right. In recent years, DOE has come to treat first-produced computer software somewhat differently reflecting the trend in Government contracting to view application software more akin to a machine for manipulation of information rather than as scientific information. To further the technology transfer mission of DOE laboratories specified by the National Competitiveness Act of 1989 (Public Law 101-189) laboratory contractors have been permitted to copyright and license computer software first produced in the performance of their contracts. New technical data regulations issued in 1998 provide guidance as to when a similar right might be accorded

non-laboratory contractors. In a similar vein, the Assistance Regulation Notice reflects our intention to consider making routine the granting of ownership of copyright in computer software first produced in performance of covered awards. As to data, on occasion, DOE has been given express statutory authority to provide trade secret-like protection to first-produced technical data and computer software for set periods of time (e.g., the Energy Policy Act of 1992, 42 U.S.C. 13541(d)). This authority has proven a valuable tool in furthering the goals of our research programs in appropriate circumstances.

5. The need for flexibility in the deadlines and procedures for disclosure of inventions

Disclosure to the Government of "subject inventions" (inventions conceived or first reduced to practice in the performance of a government-funded activity) within a reasonable time by a Bayh-Dole contractor is required by statute (e.g., 35 U.S.C. 202(c)(1)). The patent clauses covering disclosure of inventions (e.g., FAR 52.227-11(c)(4)) normally provide that extensions of time for actions associated with subject inventions may be granted. DOE historically has been very liberal in granting extensions as long as the contractor is not unreasonably delaying the filing of a patent application on the subject invention. The filing of an application is a statutory requirement where the partner desires to retain title to a subject invention (35 U.S.C. 202(c)(3)).

6. March-in rights under DOE contracts

March-in rights, which apply where title in a subject invention made under a funding agreement

is retained by the non-federal partner, are required across the Government under the Bayh-Dole Act (35 U.S.C. 203 and 210(c)). March-in rights allow the Government to require the licensing of a subject invention to a third party at a reasonable royalty if the partner's ownership of the subject invention has certain negative consequences as set forth in Bayh-Dole (35 U.S.C. 203). In its twenty-year history of use, DOE has only had one request by a third party (currently under review) for the Department to exercise march-in rights, and we are aware of no case where any other agency has exercised the Government's march-in rights. We do not believe the minimal march-in rights circumstances set forth in Bayh-Dole, which are designed to protect legitimate public and government interests and may serve as a deterrent, have had much impact on the willingness of private parties to participate in our research programs. In fact, requests for invocation of these procedures have been extremely rare.

7. Whether it would be advantageous for DOE to receive "other transactions" authority

As we understand it, the concept of granting "other transactions" authority to DOE would provide DOE with authorities similar to those currently available to the Department of Defense and other agencies with science and technology missions similar to DOE's, including the National Aeronautics and Space Administration (NASA). We support efforts to encourage innovative partnering arrangements and provide additional intellectual property flexibility with entities such as R&D consortia. At the same time, we recognize that "other transactions" authority is a highly flexible authority outside the procurement framework that must be carefully

and thoughtfully applied. While we will need to further consider the merits of applying other transactions authority to DOE, we think it is worthwhile to reevaluate current laws (including possible changes within the procurement framework) to ensure appropriate flexibility is afforded.

8. Whether the waiver process at DOE should be reformed and, if so, what efforts are underway

Provisions in the Atomic Energy Act and the Federal Nonnuclear Research and Development Act (42 U.S.C. 2182 and 5908, respectively) require the Government to take title to subject inventions from partners not subject to the Bayh-Dole Act unless government title is waived to the partner. Section 9 of the Federal Nonnuclear Act sets forth the objectives and considerations which the Department must apply in making waiver determinations. The regulations implementing these statutes are set forth at 10 CFR 784. Current waiver practice, wherein most waiver requests are granted, has the advantage of assuring high level consideration of how the partner intends to commercialize technology embodying subject inventions, including whether the partner plans to manufacture technology embodying subject inventions in the United States. Through the grant of class waivers, advance waivers and other means, DOE has sought to limit the administrative burden of the waiver process. The Assistance Regulation Notice reflects DOE's most recent effort to streamline the waiver process.

This concludes my prepared statement. I will be pleased to respond to any questions the Subcommittee may have.

Proposed Rules

Federal Register
Vol. 66, No. 89
Tuesday, May 8, 2001

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF ENERGY

10 CFR Part 600

RIN 1991–AB57

Grants and Agreements With For-Profit Organizations

AGENCY: Department of Energy.

ACTION: Notice of inquiry and opportunity for public comment.

SUMMARY: The Department of Energy (the "Department" or "DOE") is seeking comments on whether to initiate a rulemaking that prescribes administrative requirements for financial assistance awards tailored specifically to for-profit organizations. DOE is also requesting comments on the specific changes proposed in the SUPPLEMENTARY INFORMATION section. Comments received in response to this document should contain no proprietary or confidential business information.

DATES: Written comments must be received by July 9, 2001.

ADDRESSES: Comments (3 copies) should be addressed to: Trudy Wood, U.S. Department of Energy, Office of Procurement and Assistance Management, MA–51, 1000 Independence Avenue, SW., Washington, DC 20585.

If possible a copy should also be E-mailed to *fanotice@pr.doe.gov*.

FOR FURTHER INFORMATION CONTACT: Ms. Trudy Wood, Office of Procurement and Assistance Policy, Department of Energy, at (202) 586–5625.

SUPPLEMENTARY INFORMATION:

I. Background

Currently, DOE is engaged in the Government-wide effort to streamline and simplify the application, administrative, and reporting procedures for Federal financial assistance programs pursuant to Public Law 106–107, the Federal Financial Assistance Management Improvement Act of 1999 (henceforth "the Act"). As part of its initiative to consult with non-Federal entities, the Department solicited comments and suggestions from the grant community. In response, DOE received comments from for-profit organizations relating to issues that were unique to DOE and that were not being addressed in the Government-wide effort to implement the Act. Therefore, DOE is considering creating a new subpart to 10 CFR part 600 that contains administrative requirements for grants and cooperative agreements that are tailored to for-profit organizations with the goal of eliminating barriers which prevent these organizations from participating in the Department's financial assistance programs.

II. Current Regulations

The DOE assistance regulations are contained in 10 CFR part 600. As a matter of discretion, these regulations provide that the Office of Management and Budget (OMB) administrative requirements for grants and cooperative agreements with institutions of higher education, hospitals, and other non-profit organizations also apply to for-profit organizations.

III. Rulemaking Under Consideration

DOE is considering initiating a rulemaking that provides administrative requirements for grants and cooperative agreements that are specifically tailored to for-profit organizations. The changes under consideration would: (1) eliminate unnecessary requirements; and (2) maximize the effectiveness with which the Department's financial assistance programs support the accomplishment of their purposes, consistent with good stewardship of public funds and statutory requirements.

IV. Proposed Changes

DOE is considering the following major changes to 10 CFR part 600:

1. Create a new subpart that provides administrative requirements for grants and cooperative agreements that are specifically tailored to for-profit organizations, similar to the Department of Defense Grant and Agreement Regulations, 32 CFR part 34, Administrative Requirements for Grants and Agreements with For-Profit Organizations. Among other things, the new subpart would allow DOE to apply less restrictive requirements to small awards and to awards made pursuant to the Small Business Innovation Research or Small Business Technology Transfer Research programs.

2. Eliminate the requirement for incorporation of the following intellectual property clauses in awards with for-profit organizations:

a. FAR 52.227–1 Authorization and Consent
b. FAR 52.227.2 Notice and Assistance Regarding Patent and Copyright Infringement
c. FAR 52.227–3 Patent Indemnity
d. FAR 52.227–23 Rights in Proposal Data

3. Revise the Rights in Data and Patent Rights Provisions for financial assistance awards with large for-profit organizations. The new provisions would incorporate the following changes:

a. Eliminate DOE's routine use of clauses that grant to DOE the right to require recipients, under certain circumstances, to license background data and patents to third parties, to assure commercialization (see DEAR 952.227–13(k) and 952.227–14). DOE would require such third party licensing rights only when it is necessary to satisfy the needs of the program; and

b. Eliminate the requirement that the recipient obtain the Contracting Officer's approval prior to copyrighting computer software developed under the assistance award.

4. Simplify the advanced patent waiver petition process by making advanced waiver approval automatic if the awardee agrees to the conditions specified in the solicitation. This simplified process would eliminate the detailed 20 question waiver petition. The conditions specified in the solicitation would include:

a. Providing a one paragraph summary of a business plan for commercializing the technology;

b. Non-Federal cost sharing of at least 20 percent to establish a corporate commitment to commercializing the technology;

c. Agreement to statutory requirements attaching to the subject inventions, such as subject invention disclosure to DOE, Government purpose license rights, march-in rights, and a preference for United States industries; and

d. A U.S. competitiveness requirement dealing with substantial manufacturing in the U.S.

5. Simplify the financial and program management requirements by:

a. Encouraging recipients to use existing financial management systems

established for conducting business in the commercial marketplace to the extent that the systems comply with Generally Accepted Accounting Practices (GAAP) and certain minimum standards (i.e., effective control of funds, accurate records that document the source and application of the Federal funds and the recipient's required cost share, and a system to support charges to Federal awards for salaries and wages);

b. Establishing a preference for the reimbursement method of payment; and

c. Requiring recipients that expend $300,000 or more in a year under Federal awards to have an audit for that year by an independent auditor. The audit generally would be made a part of the regularly scheduled, annual audit of the recipient's financial statements.

6. Clarify and simplify the property standards. The revised property standards would encourage recipients to use existing property management systems to the extent that the systems meet certain minimum requirements.

7. Significantly reduce requirements imposed on recipient procurement activities in favor of best commercial practices. DOE is considering establishing minimum procurement requirements, such as:

a. Requiring recipients' procurement procedures to use effective competition techniques or other means that ensure reasonable cost for procured goods and services;

b. Requiring pre-award review of procurements only when the contracting officer judges that there is a compelling need to do so and then only if a provision in the award states the requirement; and

c. Encourage the use of best commercial practices in the procurement of commercial items.

Issued in Washington, D.C. on April 30, 2001.

Richard H. Hopf,

Acting Director, Office of Management and Administration, U.S. Department of Energy.

[FR Doc. 01–11519 Filed 5–7–01; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF THE TREASURY

Office of Thrift Supervision

12 CFR Part 552

[No. 2001–35]

RIN 1550–AB46

Conversion From Stock Form Depository Institution to Federal Stock Association

AGENCY: Office of Thrift Supervision, Treasury.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Office of Thrift Supervision (OTS) is proposing to amend its regulation on conversions from stock form depository institutions to federal stock savings associations. This proposed rule would clarify that the resulting federal stock savings association in such transactions succeeds to all the rights, property, and obligations of the converting institution. This amendment merely codifies OTS's interpretation of its existing regulation.

DATES: Comments must be received on or before June 7, 2001.

ADDRESSES: *Mail:* Send comments to Regulation Comments, Chief Counsel's Office, Office of Thrift Supervision, 1700 G Street, NW., Washington, DC 20552, Attention Docket No. 2001–35.

Delivery: Hand deliver comments to the Guard's Desk, East Lobby Entrance, 1700 G Street, NW., from 9:00 a.m. to 4:00 p.m. on business days, Attention Regulation Comments, Chief Counsel's Office, Docket No. 2001–35.

Facsimiles: Send facsimile transmissions to FAX Number (202) 906–6518, Attention Docket No. 2001–35.

E–Mail: Send e-mails to *regs.comments@ots.treas.gov*, Attention Docket No. 2001–35, and include your name and telephone number.

Public Inspection: Comments and the related index will be posted on the OTS Internet Site at *www.ots.treas.gov*. In addition, you may inspect comments at the Public Reading Room, 1700 G St. N.W., by appointment. To make an appointment for access, call (202) 906–5922, send an e-mail to *public.info@ots.treas.gov*, or send a facsimile transmission to (202) 906–7755. (Prior notice identifying the materials you will be requesting will assist us in serving you.) Appointments will be scheduled on business days between 10:00 a.m. and 4:00 p.m. In most cases, appointments will be available the next business day following the date a request is received.

FOR FURTHER INFORMATION CONTACT: Aaron B. Kahn, (202) 906–6263, Special Counsel, or Kevin A. Corcoran, (202) 906–6962, Assistant Chief Counsel, Business Transactions Division, Chief Counsel's Office, Office of Thrift Supervision, 1700 G Street, NW, Washington DC 20552.

SUPPLEMENTARY INFORMATION:

Background

OTS regulations at 12 CFR 552.2–6 provides that, with OTS approval, any stock depository institution that is, or is eligible to become, a member of a Federal Home Loan Bank may convert to a federal stock savings association if the converting institution has deposits insured by the Federal Deposit Insurance Corporation (FDIC) at the time of conversion, and complies with all applicable statutes and regulations, including section 5(d) of the Federal Deposit Insurance Act.[1] This regulation does not explicitly address the succession of the federal association resulting from such a conversion to the rights, obligations and property of the converting institution. However, as a matter of practice OTS treats federal stock associations that have resulted from direct conversions pursuant to 12 CFR 552.2–6 as the corporate successors of the converting institutions.

OTS regulations addressing similar transactions explicitly provide that the resulting federal association succeeds to the rights, obligations, and property of a converted or disappearing entity. This is true, for example, for conversions of mutual depository institutions to federal mutual savings associations[2] and the merger or consolidation of stock institutions that result in a federal stock association.[3]

To clarify the legal consequences of direct conversions under 12 CFR 552.2–6, OTS is proposing to amend that regulation to provide explicitly that a converted federal stock association succeeds to all the rights, obligations and property of its corporate predecessor.

This action will not change the existing treatment accorded federal stock associations that have converted from a stock depository institution. Rather, the amendment merely codifies the agency's existing interpretation of its regulation. The text of the amendment has been derived from a comparable provision pertaining to the merger and consolidation of federal stock associations that appears at 12 CFR 552.13(l).

[1] 12 U.S.C. 1815(d).

[2] 12 CFR 543.14 (2000).

[3] *See* 12 CFR 552.13(l) (2000).

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Mr. Carroll.

STATEMENT OF RICHARD W. CARROLL, CHAIRMAN, SMALL BUSINESS TECHNOLOGY COALITION, AND CHIEF EXECUTIVE OFFICER, DIGITAL SYSTEM RESOURCES

Mr. CARROLL. Thank you, Mr. Chairman, Ranking Member Turner, members of the subcommittee, for the opportunity to testify about the intellectual property issues affecting commercial firms doing business with the Federal Government. My name is Richard Carroll, and I'm chairman of the Small Business Technology Coalition, an association of hundreds of high-technology firms located across the country and dedicated to improving Federal policies and practices for smaller firms engaged in Federal scientific research, technical and professional services.

In addition, I'm chief executive officer of a high-technology company called DSR, Digital System Resources. DSR offers information technology and complex software solutions to the Department of Defense. As the CEO of a small, high-tech company, our people and the intellectual property they create are our single most important commodities. In the process of delivering services and products to our Government customer, I have learned firsthand how absolutely essential intellectual property is to my business and the challenges of dealing with intellectual property in the Federal contracting.

I'm going to talk about the dramatic shift, and what the implications are of that shift, of where R&D comes from in this country. I'll explain further that the real loss from the nonparticipation from leading commercial R&D firms in DOD programs is the loss of alternatives, the loss of ideas, and the loss of competitive solutions for DOD programs and needs. I'm going to concentrate on DOD because that's where I have most of my experience and the experience of our association.

The DOD regulations and procedures governing the allocation of intellectual property rights are for the most part contained in the Federal Acquisition Regulation and the Defense Regulation Supplement, DFARS. I'm not going to attempt to summarize the technical aspects of these complex regulations. Instead, I have provided an attachment which will be included in the record, appendix A, and that does this.

It is the prime function of the regulations and clauses to balance the competing interests of the Government that wants to gain rights to intellectual property it has paid to develop and commercial firms that want to retain and protect their creative ideas from unauthorized disclosure to competitors. Indeed, the FAR provision 27.402 states that "in applying these policies, agencies shall strike a balance between the Government's need and the contractor's legitimate proprietary interest."

By and large, the current regulations affect that balance. While there are many changes that the industry probably would like to make to the regulations, if they had ultimate say in the matter, most would admit, in my opinion, that the regulations as written effect a reasonable balance between industry and DOD.

Having said that the allocation of rights under the applicable regulations and clauses is basically fair is not to say that the industry does not desire changes. I have included another appendix

in my written testimony of technical concerns that industry has with the regulations and clauses, and I won't go over those. They're in my testimony.

These are important, but my primary concern is with the implementation of these very complex clauses and regulations, which is a far greater problem than the matter in which they are written. The practices and behavior of contracting and programming personnel in implementing these regulations and clauses can undermine the balance these written regulations attempt to strike. Some Government personnel assume that it is in the Government's interest to take every last right that can be obtained in every circumstance from contractors, and to do less would fail to protect the Government's interest. Others seek to pressure contractors to release their proprietary rights or property rights as a condition of getting a major contract. People in my organization have experienced that. It's not uncommon.

Additionally, large firms can move aggressively against the rights of small firms who have neither the resources nor the knowledge to defend them. All of these situations tilt the playing field against the commercial firm seeking to preserve its intellectual property rights. Consider this behavior in light of the fact that recently it is the Government's written policy to obtain only the minimum rights necessary for any acquisition.

Let me hasten to add that many well-meaning Government personnel struggle every day to do the right thing in this area. However, even a small minority of individuals can affect the overall desire of thousands of firms to participate or not participate in DOD R&D programs. It is not enough to say, "only a small minority of personnel do such things." Few commercial firms will gamble with their intellectual property.

It is my experience that the Government's insistence on obtaining data rights has more to do with the potential competition that these new ideas give incumbents than it has to do with the Government's needs in an acquisition. The paradigm is not reflective of any one individual, but instead reflects the enormous strength that current incumbencies have within the institution and the fear that technological innovation could displace them, as they have seen it displace very powerful incumbencies in our commercial sector. That's a big fear.

Let me concentrate on protecting the rights of small businesses. The problem of protecting intellectual property is more acute for small firms. Small firms cannot afford to challenge large bureaucracies. Yet, small firms are critical to the success of any organization such as DOD which seeks to incorporate new technologies into its missions.

Recently, Congress reauthorized the SBIR Program, and that program is a very good program to take a look at when it comes to intellectual property rights. The SBIR Program is unique in that it grants special rights to small firms when they do R&D for the Federal Government. Unlike other contracts where the FAR clauses give essentially unlimited rights to the Government, these don't. It tests the ability of the Government to trust the competitive environment that's created when small firms gather rights with Federal R&D.

The SBIR Reauthorization Act of 2000 had special provisions dealing with this problem, and the SBA is rewriting their directive for how that's dealt with. In general, they're doing a very good job. It's in the review stage right now.

Let me say that I had a number of recommendations that I would like to offer and propose solutions in this area, although I certainly can't recommend solutions to all of these problems. They're very complex.

First, I want to commend Ms. Lee for their guide, "Intellectual Property: Navigating through Commercial Waters." That's a very well-written document, and I would recommend that a section be included on SBIR data rights and the intent of Congress in enacting the SBIR program in this area.

With those modifications, I would also recommend that the committee give her all the support and encouragement to get that out and get people trained in this area. That's a big step.

I also would recommend that the committee work with the SBA to bring focus to its SBIR policy directive to protect the intellectual property of participating business.

Finally, I would like to recommend a nonjudicial source of redress for intellectual property disputes for both large and small companies in the departments.

I thank you for the opportunity to testify and look forward to answering your questions.

[The prepared statement of Mr. Carroll follows:]

Statement of Mr. Richard W. Carroll
Chairman of The Small Business Technology Coalition
And Chief Executive Officer, Digital System Resources®, Inc.

TO: HOUSE COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY
U.S. HOUSE OF REPRESENTATIVES

ON: *"Toward Greater Public-Private Collaboration in Research & Development: How the Treatment of Intellectual Property Rights is Minimizing Innovation in the Federal Government"*

Washington, DC

July 17, 2001

Mr. Chairman and Members of the Subcommittee:

I first wish to thank Chairman Davis, ranking minority member Turner and members of the Subcommittee for the opportunity to testify about intellectual property issues affecting commercial firms doing business with the federal government. I commend the Subcommittee for taking up this issue, which I believe involves issues critical to our country and our nation's national defense. I have prepared the following remarks that I request be entered into the record:

My name is Richard W. Carroll, and I am Chairman of the Small Business Technology Coalition (SBTC), an association of hundreds of high technology firms located across the country and dedicated to improving federal policies and practices for smaller firms engaged in federal scientific, research, technical, and professional services.

In addition, I am Chief Executive Officer (CEO) of a high technology company called Digital System Resources, Inc. (DSR). DSR offers information technology and complex software solutions to the Department of Defense (DoD). I started DSR in 1985 and today I am proud to work with nearly 500 very

talented people. We are now delivering technology advancements to military systems on an annual cycle where in the past the upgrade cycle took eight to ten years.

As the CEO of a small high tech company, our people and the intellectual property they create are our single most important commodities. In the process of delivering services and products to our government customer, I have learned first-hand how absolutely essential intellectual property is to my business and the challenges of dealing with intellectual property in the federal contracting. Given the breadth of the intellectual property subject area, I will confine my remarks to the area I know best – issues involving the DoD. I will leave the practices and policies of the civilian agencies to others.

The Importance of Intellectual Property Protection

Let me read you a phrase:

> *"To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries"*

That phrase is from Article I, section 8 of the Constitution. The founders, three Ages ago, saw the need for intellectual property protection. The founders lived in the Agrarian Age. Today, we have been through a momentous industrial revolution and now are in the midst of an equally momentous information revolution, yet our modern patent, copyright, trade secret and trademark laws are based on this simple power assured by those founding fathers. If they could see the importance of protecting ideas back in the Agrarian Age, we surely should see its urgency and importance today in the Technology Age.

There are also practical reasons for DoD to take seriously intellectual property protection. When DoD performed its own R&D, it did not have to worry as much about intellectual property protection, because it performed much of its own research. In 1960, private sector research and development spending amounted to approximately one-third of the country's total R&D effort and the federal government conducted the overwhelming majority of the remaining two-thirds of R&D. By 1999, that private sector R&D effort had soared to two-thirds, or approximately $166 billion. During the same period, the military's share of the country's total R&D effort dropped from 53% to only 16%.[1] The National Science Foundation (NSF)

[1] Kathy Chen, *Wall Street Journal,* November 12, 1999, p. 20, "Pentagon Finds Fewer Firms Want To Do Military R&D."

reports that R&D spending has increased from $169 billion in 1994 to $264 billion in 2000, with the increase due almost entirely to funding from private industry.[2] NSF projected that industry performed 75.4 percent of the nation's total R&D in 2000 ($199.2 billion) and of this industrial R&D performance, 88.2 percent was supported by the industry's own funds with the federal government accounting for the remaining 11.8 percent.[3] Of the $264 billion in R&D total funding for 2000, 73.1 percent came from private industry while federal funding comprised only 26.9 percent, its lowest percentage since the government began recording such data in 1953.[4] The percentage of federal funding for R&D has declined steadily since 1980, when it fell below 50 percent for the first time.[5] Of the $71.2 in federal R&D support for the top 200 contractors in the year 2000 the Department of Defense accounted for approximately $19 billion, according to *Government Executive*.[6]

What are the implications of this dramatic shift? When DoD employed large numbers of scientists and engineers, and technical and professional personnel capable of doing its R&D in-house, protection of commercial intellectual property was not a foremost issue. As a result of this shift however, with DoD now contributing only 16% to the country's overall R&D effort, its reliance upon commercial firms for research and innovation has nearly tripled. In addition, DoD uses more technology, buys more of it, and is much more technologically dependent than it was 40 years ago. With DoD's increased use and dependence on commercial ideas and R&D, the issue of protection of commercially generated and supplied intellectual property is taking center stage.

However, many commercial firms do not want to participate in DoD-funded research, R&D, or even straightforward procurements of their services or products. Among the many reasons for that reluctance is the fear that the Government may somehow take rights to their most precious assets – their intellectual property.

As I will explain further below, the real loss from the non-participation from leading commercial R&D firms in DoD programs is the loss of alternatives, loss of ideas, and loss of competitive solutions for DoD programs and needs.

---

[2] National Science Foundation *"Data Brief,"* November 29, 2000, NSF 01-310.
[3] Id.
[4] Id.
[5] Id.
[6] *"Government Executive, Top 200 Contractors 2000,"* August 1, 2000.

Current Regulatory Regime and the "Balance"

The DoD's regulations and procedures governing allocation of intellectual property rights are for the most part contained in the Federal Acquisition Regulation (FAR), and the Defense Regulation Supplement (DFARS). I will not attempt to summarize the technical aspects of these complex regulations. Instead, I have provided an attachment, Appendix A, that does so.[7] Rather than describing how these complex regulations work, I want to make several points about these regulations. First, the intellectual property clauses incorporated into a federal contract are some of the longest and most complex clauses in all of federal contracting.[8] Because of that complexity, these clauses, regulations, and intellectual property rights that they allocate are among the least understood aspects of federal contracting. Finally, and most important, the regulations attempt to balance the legitimate needs of the government with the legitimate but opposing needs of commercial contractors in allocating intellectual property rights.

It is the prime function of the regulations and clauses to balance the competing interest of the government that wants to gain rights to intellectual property it has paid to develop and commercial firms that want to retain and protect their creative ideas from unauthorized disclosure to competitors. Indeed, FAR provision 27.402 states that: "...in applying these policies, agencies shall strike a balance between the Government's need and the contractor's legitimate proprietary interest."

By and large, the current regulations affect that balance. While there are many changes that industry probably would make to the regulations, if they had ultimate say in the matter, most would admit that the regulations as written effect a reasonable balance between industry and DoD.

---

[7] *"Intellectual Property Rights in Federal Contracts: What Commercial Contractors Need to Know,"* David B. Dempsey and Frank K. Peterson, Partners, Government Contracts Group, Holland & Knight LLP, July 2001. Attached as Appendix A.

[8] To illustrate this complexity, consider one paragraph out of the Dempsey/Peterson paper:

> "Technical data" under both the FAR and DFARS rules are data of a scientific or technical nature. *See* FAR 27.401, DFARS 252.227-7013(a)(14). The FAR and DFARS definitions of technical data both specifically exclude computer software. The FAR defines "compute software" to mean computer programs, computer databases *and* related documentation. *See* FAR 27.401. By contrast, the DFARS specifically *excludes* computer databases and computer software documentation from the computer software definition, placing them instead under the heading of technical data. *See* DFARS 252.227-7013(a)(3). The distinction is significant because of the different treatment afforded technical data and computer software that relates to the license agreement between the government and the contractor. *"Intellectual Property Rights in Federal Contracts: What Commercial Contractors Need to Know,"* at 5. (Emphasis in original).

The Problem Areas

Having said that the allocation of rights under the applicable regulations and clauses is basically fair is not to say that industry does not desire changes. I have included in Appendix B, a list of industry concerns with current regulations and clauses. These are important, but my primary concern is with implementation of these very complex clauses and regulations, which is a far greater problem than the manner in which they are written. The practices and behavior of contracting and program personnel in implementing these regulations and clauses can undermine the balance these written regulations attempt to strike.

Some Government personnel assume that it is in the Government's interest to take every last right that can be obtained in every circumstance from contractors, and that to do less is to fail to protect the Government interest. Others seek to pressure contractors to release their property rights as a condition of getting a major contract. Additionally, large firms can move aggressively against the rights of small firms, who have neither the resources, nor knowledge to defend them. All of these situations tilt the playing field against the commercial firm seeking to preserve its intellectual property rights. Consider this behavior in light of the fact that it is the Government's written policy to obtain only the minimum necessary rights for any acquisition.

I hasten to add that many, many well-meaning government personnel struggle every day to do the right thing in this area. However, even a small minority of individuals can affect the overall desire of thousands of firms to participate or not participate in DoD R&D programs. It is not enough to say, "only a small minority of personnel do such things." Few commercial firms will gamble with their intellectual property. It is my experience that the Government's insistence on obtaining data rights has more to do with the potential competition that these new ideas give incumbents than it has to do with the Government's needs in an acquisition. This paradigm is not reflective of any one individual, but instead reflects the enormous strength that current incumbencies have within the institution and their fear that technological innovation could displace them as they have seen it displace powerful incumbencies in our commercial sector.

Protecting the Rights of Small Business

The problem of protecting intellectual property is more acute for small firms. Small firms cannot afford to challenge large bureaucracies. Yet small firms are crucial to the success of any organization, such as DoD, which seeks to incorporate new technologies into its mission. Small firms produce 2.5 times as many innovations per employee than larger firms.[9] They move innovations to the market faster. Large firms are 2.8 times more likely to have federal R&D support as small firms. Additionally, innovations of large firms are twice as likely to have no labor impact as innovations of small firms.[10] Thus, small firms innovate faster, cheaper, and create more jobs in the process with less federal funds than their larger firm counterparts. Yet they receive less than 5% of the research funds awarded to private sector entities each year from the federal government.

Congress established the Small Business Innovation Research (SBIR) Program in 1982 to address this problem. It has been a phenomenal success. Each year, thousands of small firms receive research awards for federal research applicable to agency mission needs. My own company's success is directly due to the SBIR program, and based on that experience, I firmly believe the SBIR program provides the only viable opportunity for small firms to challenge incumbencies and make significant contributions to our nation's aging weapon systems.

Congress recently re-authorized the SBIR Program,[11] and the Small Business Administration (SBA) is re-publishing its Policy Directive to pick up clarifications and changes from the 2000 Re-Authorization Act.[12] The SBA Policy Directive re-write is generally a very good job. However, in the crucial area of intellectual property, I believe that these clarifications and new regulations could more strongly capture the intent of Congress to ensure the protection of intellectual property rights for companies receiving third phase funding. I believe these new regulations could more emphatically clarify that the original Act required inclusion of the SBIR Data Rights clause in third phase awards, and always has. Relative to SBIR third

---

[9] *"The Relationship Between Industrial Concentration, Firm Size and Technological Innovation,"* Earl E. Bomberger, Gellman Research Associates, 1982 (NTIS Order No. PB82-226119).
[10] *"Innovations by Firm Size in Studies of the Bureau of Labor Statistics,"* Keith L Edwards and William Wallace, The Futures Group, 1985 (NTIS Order No. PB90-233966).
[11] The Small Business Innovation Research Program Re-Authorization Act of 2000, P.L. 106-554, signed by the President on December 21, 2000.
[12] Fed. Reg. May 18, 2001, at 27721.

phase agreements, a particular perspective of some agencies is that if they can continue research or research and development of SBIR developed technologies with non-SBIR contract awards, they can gain access to data developed under the SBIR program for the purpose of providing it to competitors. It is my perspective that this is not the intent of Congress when it passed the legislation, and in fact, acts to destroy real and on-going competitive alternatives for the DOD and severely limits the SBIR company's ability to get capital to further commercialize the innovation.

Let me clarify that under SBIR, the government has a royalty-free right to use products and information developed, and that the only real limitation is in its ability to give intellectual property to competitors. Let me also add that some SBIR companies may in fact feel that it is in their own best interests to provide the government with open access to its intellectual property for reuse in their systems. What is essential in this process is that companies are afforded the ability to negotiate what they feel is their best position regarding the use of their property. This negotiation can have very surprising results for the customer in that these small high technology businesses almost always find their customer's, i.e. the government's, interest in their best interest and can bring about positive change through the power of negotiation that the government is otherwise unable to accomplish. I hope this committee can work with the DOD and the SBA to allow the SBIR program to foster true on-going competitive alternatives for the DOD.

The Benefit of New Ideas and Competitive Alternatives – "Creative Destruction"

When we find ways to facilitate the introduction of new ideas, new technologies and new approaches into DoD programs, we begin the process of creative destruction. This is best done with the availability of new ideas in the form of competitive alternatives for the customer. New ideas are remorseless. They destroy old ways of doing things without conscience. You cannot tell people to abandon old ways of doing things, but you cannot prevent them from wanting a new idea once it is introduced into their midst. The new technology, idea or approach destroys the old technology, the old idea, and the old approach simply by being better. This concept is called "creative destruction,"[13] and is something about which I testified before the House Armed Services Committee on June 26, 2001. I'd like to quote from that testimony, if I may:

---

[13] The concept of "creative destruction" is not mine. Joseph Schumpeter first surfaced it more than fifty years ago. It has since been memorialized in books such as *"Creative Destruction: Business Survival Strategies in the Global Internet Economy,"* by Lee W. McKnight, Paul M. Vaaler and Raul L. Katz, MIT Press, Cambridge Massachusetts, London, England, 2001. The book begins by summarizing Schumpeter's view on capitalist society as "a 'creative destruction" whereby

> Consider the information technology revolution that has now changed virtually everything we do in this country. The overwhelming majority of the innovative companies that fueled this revolution started as small, high-tech businesses with names like Microsoft, Intel, America On-Line, Dell, Compaq, Netscape, E-bay and on and on. These companies built upon their unique innovations causing transformation in their business sectors resulting in both a benefit to the consumer and a new paradigm for their competitors. Their successful competitors quickly re-made themselves in order to adapt and compete. Their successful competitors could not adapt and therefore are no longer around. This process of creative destruction is the phenomenon that enables rapid change in our market-driven society and would be the most powerful tool to accelerate the identification, maturation, and transition of advanced technology to our military forces. The simple use of the innovative products resulting from this process of creative destruction in the commercial sector, such as Commercial-Off-The-Shelf (COTS) technology, by defense incumbents will not transform the DoD nearly as effectively as would inspired entrepreneurs launching a direct challenge to the military industrial complex with on-going competitive alternatives.[14]

Most people agree that one single individual cannot change the world. However, one single idea can. Names like Microsoft, Intel, America On-Line, Dell, Compaq, Netscape, E-bay all have shown us this. New ideas with the benefit of intellectual property protection empowered them to grow strong, challenge the status quo, and change the world. Unlike these companies just mentioned, I cannot find a single large company doing significant business with the DoD that can attribute its initial formation and growth to the

---

innovations would destroy existing technologies and methods of production only to be assaulted themselves by imitative rival products with newer, more efficient configurations." Id. at 3.

[14] *"Ways to Accelerate the Identification, Maturation, and Transition of Advanced Technology to our Military Forces,"* Statement of Richard W. Carroll, Chairman of the Small Business Technology Coalition and Chief Executive Officer of Digital System Resources®, Inc. to the House Armed Services Committee, Military Research and Development Subcommittee, U.S. House of Representatives, Washington, D.C., June 26, 2001, at 2-3.

empowerment granted through the protection of its intellectual property. I believe that a good dose of commercial high technology businesses with new ideas and intellectual property protection that could offer competitive alternatives would be a health addition to this market place.

Remedies and Proposed Solutions

I do not claim to have solutions for all of these problems. I am conscious that organizations, such as the Defense Science Board, trade associations, and sophisticated think tanks have worked on them for many years. I would like to give you, however, a few perspectives on certain directions and actions that would improve things.

1. The DOD should include a section in its DOD Training Guide *"Intellectual Property: Navigating Through Commercial Waters"* on the SBIR program, SBIR data rights, the intent of Congress in enacting the SBIR program, its support of the use of the SBIR program to develop competitive alternatives and the associated benefits.

2. With the modification outlined in (1) above, the Committee should support the DoD Training Guide *"Intellectual Property: Navigating Through Commercial Waters"* and encourage its use throughout the department. The Guide challenges old approaches in this area with some very new and innovative thinking. The Guide should also be used for its ostensible purpose – training – as soon as feasible. DoD personnel sensitized in these areas through training from the Guide are much less likely to engage in the more aggressive practices cited earlier in my testimony.

3. Work with the SBA to bring focus on its SBIR Policy Directive to protect the intellectual property of participating small businesses. I know that the SBA would welcome comment on its proposed policy directive from this committee and would continue to work constructively to execute as administrator of the SBIR program.

4. Provide a non-judicial source of redress for intellectual property disputes for both large and small businesses. Currently, there is no such non-judicial forum. Intellectual property disputes must be taken to the Court of Federal Claims ("COFC"), the boards of contract appeals, or the federal district courts. These are tremendously expensive forums and cases, even for one case, for any business, large or small. Unfortunately, the potential for intellectual property disputes on a single contract is significant. No firm, large or small, can afford to take all of the

intellectual property disputes it has to court each time they arise. A single forum, within DoD, in which informed, skilled, knowledgeable, DoD personnel resolve intellectual property disputes fairly and quickly would be a tremendous service.

5. Finally, by legislation, make it clear that it is in the interest of the federal government both to negotiate rights under the clauses applicable to R&D and technology related contracts, and to retain only those intellectual property rights necessary for administration of the subject contract.

Conclusion

DoD is currently undergoing a transformation of its priorities, which has the promise to deal with the impacts of the changing world. I applaud Secretary Rumsfeld's leadership in this area and encourage him and his capable team to include a transformation of the way the DoD deals with intellectual property to match the changes that have occurred in our society. In particular, one that engages the best sources of ideas for change and improvement this nation has to offer, our commercial firms. The best way to make those changes would be to subject the DoD to new ideas and let those ideas work their will.

Thank you for the opportunity to present these views to the Subcommittee, and allowing me to testify today.

Appendix A

Intellectual Property Rights in Federal Contracts: What the Commercial Contractor needs to know

An Overview[15]

Contractors involved in the U.S. procurement process can be overwhelmed by the complexity of U.S. government regulations relating to the treatment of intellectual property. The intellectual property clauses incorporated by reference into the contract are some of the longest and obtuse contract terms in the entire panoply of U.S. contracting.

U.S. government policy generally encourages the maximum practical commercial use of a contractor's intellectual property used or developed during the performance of a government contract. *See* FAR 27.104.[16] Despite the initial appeal the general policy may carry, the details of the intellectual property rights ("IPR") clauses tend to belie the policy. For example, the difference in the U.S. government's treatment of patent rights, copyrights, or technical data and computer software is rather stark. In addition, contractors must be aware of the difference between civilian agencies and Defense agencies regarding the negotiation of licenses for technical data and computer software.[17] Therefore, when planning, budgeting, and negotiating U.S. government contracts, contractors should pay more attention to FAR 27.402(b) where agencies are instructed to "strike a balance between the government's need and the contractor's legitimate proprietary interest." Despite this instruction, agencies will focus on the government's need unless and until the contractor brings its proprietary IP interests to their attention.

Typically, a company will use a combination of patent, copyright, and trade secret protection to safeguard its intellectual property rights. Such protections are available to government contractors, but subject to rights reserved to the government. This Overview identifies various considerations that a contractor should keep in mind when contracting with the U.S. government.

---

[15] Based upon works by David B. Dempsey and Frank K. Peterson, Partners in the Government Contracts Group of Holland & Knight LLP. July 2001. Copyright, Holland & Knight LLP, July 2001, all rights reserved.

[16] Throughout this Overview, "FAR" means "Federal Acquisition Regulation" and "DFARS" means "Defense Federal Acquisition Regulation Supplement."

[17] Civilian agencies are further differentiated in their handling of technical data and computer software licenses as a function of the agency mission. For example, the National Aeronautics and Space Administration, the Environmental Protection Agency, the Department of Veterans Affairs, the General Services Administration, the Department of Energy, the Department of the Treasury all have somewhat different policies and contract terms in their respective agency FAR supplements.

PATENTS

U.S. patent statutes (U.S.C. Title 35) permit an inventor of a new and useful process, machine, manufacture, composition of matter or new and useful improvements thereof to obtain a legal monopoly over the subject matter of the patent. The United States Patent and Trademark Office ("PTO") will issue applicants a utility patent, directed to an apparatus or method; a design patent, dealing with ornamental, non-functional aspects of a design; or a plant patent. The essence of patent protection is the right to exclude others from practicing the patented invention for the duration of the patent term. Utility and plant patents are issued for a term of 20 years from the filing date of the application. Design patents have a term of 14 years from the issue date.

Under United States law, a patent is awarded to the first inventor of the patented matter, so long as the inventor has not abandoned or concealed the invention. To secure his or her rights, the inventor must file an application with the PTO within one year from the first public use or offer to sell the invention in the United States or the first publication to the invention anywhere in the world. The technical disclosures in the patent application provide support for the patent claims. In return for the exclusive rights in the invention, the inventor advances the state of the art by disclosing the invention in a manner that would enable others to practice the invention. Patent rights may be assigned and inventors often will assign their rights to employers or to others who have financed the development of the invention. Obviously, patent rights may also be licensed.

A. Patents Developed under U.S. Contracts

FAR 27.3, deals with patents developed under government contracts for both civilian and Defense agencies. The FAR guidance is essentially for contracts involving experimental, developmental or research work. It is the policy of the U.S government, in most cases, to grant all contractors title to patents made in whole or in part with U.S. funds, in exchange for royalty-free use by or on behalf of the government. *See* FAR 27.302(b). These patent rights pertain to "subject inventions."[18]

Generally, a contractor may, after disclosing the subject invention to the government, elect to retain title to any invention made in the performance of work under the contract.[19] There are exceptions to this general rule that may be invoked by agencies. One is for national security or foreign policy reasons (for instance, when the contractor does not have a place of business located in the United States or is subject to the control of a known terrorist-

---

[18] "Subject invention" means any invention of the contractor conceived or first actually reduced to practice in the performance of work under a Government contract." FAR 27.301.

[19] A contractor is required to disclose to the government each subject invention within 2 months after the inventor discloses it to contractor personnel responsible for patent matters or within 6 months after the contractor becomes aware that a subject invention has been made, whichever is earlier. The contractor then has two years to decide whether or not to retain title and to notify the government. However, if publication, sale or public use initiates the one year statutory period for filing for patent protection, the government may shorten the period for election of title to allow the government time to file itself if the contractor elects not to do so.

supporting government). *See* FAR 27.302(b)(1), (2). If the contractor retains title to the subject invention, the government shall have, at least, a nonexclusive, nontransferable, irrevocable, paid-up license to practice, or have practiced for or on behalf of the United States, any subject invention throughout the world. *See* FAR 27.302(c).[20]

B. Use of Patents by the U.S. Government

Generally, the government will not refuse to award a contract on the grounds that the prospective contractor may infringe a patent. *See* FAR 27.104(b). Consequently, the exclusivity rights granted to, and enjoyed by, patent holders, does not apply to the U.S. government. Under U.S. law (28 U.S.C. § 1498(a)), the U.S. government cannot be enjoined from using a patent, with or without the patent holder's permission.

Further, if the U.S. government authorizes or consents to the use of a patent (*e.g.*, use of the patented invention), this statute protects the government from any infringement claim by the inventor or the assignee.[21] A patent infringement claim for use of the patented invention by or for the United States by a contractor (including a subcontractor at any tier) can be maintained *only* against the government in the U.S. Court of Federal Claims, but not against the contractor or subcontractor.[22]

As a general rule, contractors realize that little IPR advantage accrues from a patent registered in the United States. To date, there appears to be no case law regarding the Berne Convention (recently adopted by the United States) and its potential effect on the rights of a patent-holder or the U.S. government in the government contract arena.

COPYRIGHTS

---

[20] The U.S. government has the right to title if the contractor fails to make timely disclosure to the government or fails to pursue the patent application process either in the United States or a foreign country. *See* FAR 27.302(d). If the government acquires title to a subject invention, the contractor is normally granted a revocable, nonexclusive, royalty-free license to that invention throughout the world. The patent rights clauses specify what rights the contractor has to elect ownership of inventions. *See* FAR 52.227-11 and FAR 52.227-12, the patent rights "short" and "long" form respectively.

[21] *See* FAR 52.227-1, "Authorization and Consent" the standard government clause that authorizes a contractor to "infringement-free" use of any patent filed in the United States when use is on behalf of the U.S. government. ("Infringement-free" refers to the user's protection from both injunctive relief and royalty payments.) The liability of the government for authorization and consent is usually a royalty fee of 5-7%. If the authorization and consent clause is not in the contract, the government inserts the Patent Indemnity clause (FAR 52.227-3) as required by FAR 27.203-1(b)(1). In these circumstances, the infringement claim would still be filed against the U.S. government, but the U.S. government will not be responsible for any damages.

[22] With respect to the Defense Department, a patent holder must first submit an "administrative" claim of infringement. *See* DFARS 227.7001. These administrative procedures apply only if the Defense Department did not receive title to the patent in question under the two FAR clauses – FAR 52.227-11 and FAR 52.227-12, the short and long forms.

Copyright protection is immediately available for original works of authorship fixed in any tangible medium of expression now or later developed from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. 17 U.S.C. 102(a). A copyright owner has the exclusive right to reproduce the copyrighted work, to prepare derivative works based on the copyrighted work, to distribute copies of the work to the public for sale or other transfer of ownership, and to perform the copyrighted work or publicly display the copyrighted work. 17 U.S.C. 106.

The government's rights to copyrighted material are based on the government's rights in data and computer software discussed below. As a general matter, copyrighted material is part of the license terms negotiated with the government if that copyrighted material was not based on or containing information first produced in the performance of a U.S. government contract. Otherwise, a contractor's right to ownership of a copyright is based on (1) whether the claimant publishes the material in academic, technical or professional journals, symposia, proceedings and similar works and (2) whether the claimant has affixed the "©" symbol and acknowledged the government sponsorship. In other situations, the government will normally permit the contractor to establish claim to copyright in data first produced under the contract when copyright protection will enhance the appropriate transfer or dissemination of the data or the commercialization of related products or processes. *See* FAR 27.404(f)(1)(i),(ii),(v).

Contractors are not to incorporate in contract deliverables copyrighted material that is not first produced under the contract without either granting to or acquiring for the government certain copyright license rights for the data or obtaining permission from the contracting officer to do otherwise. *See* FAR 27.104(h), 27.404(f) and DFARS 252.227-7013(d) for noncommercial copyrighted technical data and DFARS 252.227-7014(d) for noncommercial copyrighted computer software.

Similar to the U.S. government's patent rights in 28 U.S.C. § 1498(a), the identical rights apply to copyrights filed in the United States under 28 U.S.C. § 1498(b). Consequently, it is a questionable practice for a government contractor to register a copyright in the United States.

RIGHTS IN TECHNICAL DATA AND COMPUTER SOFTWARE

The U.S. government requires its contractors to provide the government certain rights to use technical data and computer software created during contract performance or delivered by the contractor in connection with performance. The scope of the government's rights in technical data and computer software for civilian agencies is dictated by the contribution of government funds used to develop the particular data or software – the more the government financed the development, the more uses the government may make of the data or software. Based on the government's funding, such data or software is licensed to the government on an "unlimited" or "limited" rights basis.

FAR Part 27, sets forth policies, procedures, and instructions with respect to government and contractor rights in data, software, copyrights thereto and the acquisition thereof by civilian agencies. DFARS Part 227 provides comparable – but different – guidance for procurements conducted by the military departments and defense agencies. Some of these differences are important.

"Technical data" under both the FAR and DFARS rules are data of a scientific or technical nature. *See* FAR 27.401, DFARS 252.227-7013(a)(14). The FAR and DFARS definitions of technical data both specifically exclude computer software. The FAR defines "computer software" to mean computer programs, computer databases, *and*

related documentation. *See* FAR 27.401. By contrast, the DFARS specifically *excludes* computer databases and computer software documentation from the computer software definition, placing them instead under the heading of technical data. *See* DFARS 252.227-7013(a)(3). The distinction is significant because of the different treatment afforded technical data and computer software that relates to the license agreement between the government and the contractor.

A. Commercial Software and Commercial Technical Data

(1) Commercial Software

Both the FAR and DFARS provide that *commercial* computer software or commercial computer software documentation are to be acquired under licenses offered to the general public. The Defense Department and civilian agencies generally obtains only the rights granted by standard commercial licenses for computer software (*i.e.*, licenses "customarily granted to the public"). *See* FAR 12.212 and DFARS 227.7202-1, 227.7203-1. Likewise, civilian agencies normally acquire only technical data and the rights in those data customarily granted to the public regarding a commercial item or process. *See* FAR 2.211.[23]

(2) Commercial Technical Data

By contrast, under DFARS 227.7102-1, DOD's policy is to obtain rights in addition to what is normally contained in a commercial technical data license. DOD's additional rights in commercial technical data consist of:

(1) form, fit, or function data (defined in DFARS 252.227-7013(a)(10);

(2) data required for repair or maintenance of commercial items or processes, or for the proper installation, operation, or handling of a commercial item, when such data are not customarily provided to commercial users or the data provided to commercial users are not sufficient for military purposes; or

(3) data describing the modifications (if any) made at *government expense* to a commercial item or process in order to meet the requirements of a government solicitation.

B. Non-Commercial Technical Data and Software under FAR Contracts

The FAR provides that a U.S. government contractor has the right to use, release to others, reproduce, distribute, or publish any *data*[24] first produced or specifically used by the contractor in the performance of the contract. *See* FAR 52.227-14(b)(2). This right is subject to U.S. export control or national security regulations or unless otherwise expressly set forth in the contract. *See* FAR 52.227-14(d)(1). Civilian agencies, in turn, may obtain "unlimited rights," "limited rights" to technical data, or "restrictive rights" to computer software, depending on the contracting

---

[23] If there is a conflict between FAR Part 12, Acquisition of Commercial Items, and another policy of the FAR regarding contracts for purchase of commercial items, FAR Part 12 "shall take precedence for the acquisition of commercial items." *See* FAR 12.102(c).

[24] Please recall that "data" under the FAR "includes technical data and computer software." FAR 52.227-14(a).

circumstances. For example, if a contractor intends to utilize its proprietary software in the performance of a civilian agency contract *and delivers* it to the agency, a "restrictive rights" agreement regarding that proprietary software is necessary. *See* FAR 27.404(b), (c).

When the government obtains "unlimited rights" in data or software, it may use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so. FAR 52.227-14(b)(i) requires the contractor to grant the government unlimited rights in:

(1) Data *first produced* in the performance of the contract;

(2) Form, fit, and function data *delivered* under the contract;

(3) Data *delivered* under the contract (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this contract; and

(4) All other data *delivered* under the contract unless provided otherwise for limited rights data or restricted computer software.

In effect, the FAR data rights clause pertains to what is *delivered* to the civilian agency – unless the data is first produced in the performance of the contract.

"Data" that embody trade secrets or are commercial or financial and confidential or privileged, to the extent that such data pertain to items, components, or processes developed at private expense (including minor modifications thereto) constitute "limited rights data." By the same token, computer software developed at private expense and that is a trade secret; is commercial or financial and is confidential or proprietary; or is published copyrighted computer software constitutes "restricted computer software." *See* FAR 52.227-14(a).[25] Unless otherwise negotiated, contractors should not deliver "limited rights data" or "restricted computer software" under a contract governed by FAR 52.227-14. *See also*, FAR 27.404(b), (c). As a condition to withholding this intellectual property,

---

[25] There is no FAR or DFARS guidance explaining what constitutes a "trade secret." The definition of trade secret contained in the Economic Espionage Act (18 U.S.C. §§ 1831-1839) is the best definition to use when asserting trade secret status. That definition reads:

> "trade secret" means all forms and types financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled or memorialized physically, electronically, graphically, photographically, or in writing if –
>
> (A) the owner thereof has taken reasonable measures to keep such information secret; and
> (B) the information derives independent economic value , actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public.

the contractor must furnish form, fit, and function data in its place and identify to the government what limited rights data or restricted computer software is being withheld. *See* FAR 52.227-14(g)(1).

If the *solicitation* or contract specifies the delivery of limited rights data or restricted computer software, or if the government contracting officer makes a written request for delivery of such data during data rights negotiations, the government obtains only the *negotiated* rights pertaining to the government's use of the data. *See* FAR 27.404(d), (e).

The civilian agency's opening negotiation position regarding limited rights data is that such data "may be reproduced or used by the government with the express limitation that they will not, without the written permission of the contractor, be used for the purpose of manufacture or disclosed outside the government." FAR 52.227-14, Alternate II. Computer data submitted with restrictive rights likewise may not be used, reproduced, or disclosed by the government unless expressly provided for in the contract or used for backup, archival and other limited purposes listed in FAR 52.227-14, Alternate III.

Contractors must be careful and emphasize that government rights to limited rights data and/or restricted computer software are negotiable. FAR 27.404(d) sets forth examples of why the government may desire that limited rights data be delivered. The most notorious instance is "use by support service contractors." If the limited rights data in question is a company trade secret, it is quite imprudent to let the government decide who is a "support contractor" and for what projects. In this case, a contractor would either refuse to deliver the limited rights data to the civilian agency or would negotiate specific language regarding release to support contractors.

C. Non-Commercial Technical Data and Computer Software under DFARS Contracts.

1. Non-Commercial Technical Data

Under the DFARS, the Defense Department obtains certain rights in technical data or computer software,[26] while the contractor or licensor retains all rights in the data or software not granted to the government. For technical data that pertain to items, components, or processes, the scope of the license is generally determined by the source of funds used to develop the item, component, or process. *See* DFARS 252.227-7013(b)(1).

The standard data rights identified in the FAR for non-commercial items – unlimited rights, limited rights in technical data and restricted rights in computer software – are similar to those granted under the standard DFARS clause for non-commercial items. The scope of rights granted is similarly determined by the source of funding for the data or software. The Defense Department generally obtains unlimited rights in data or software developed exclusively at government expense and limited rights or restricted rights in data or software developed exclusively at private expense. *See* DFARS 252.227-7013(b)(1).

---

[26] Please recall that under the DFARS, "technical data" (unlike the FAR term "data") specifically excludes computer software and computer software documentation. *See* DFARS 252.227-7013(a)(14).

However, the DFARS defines another type of government right in data or software developed with mixed funding – "government purpose rights." *See* DFARS 252.227-7013(b)(2).[27] The FAR has no comparable "government purpose rights" for civilian agencies. Government purpose rights permit the Defense Department to:

1) Use, modify, reproduce, release, perform, display, or disclose technical data or computer software within the government without restriction; and

2) Release or disclose the technical data or computer software outside the government and authorize its use for "United States government purposes."

See DFARS 252.227-7013(a)(12). "Government purposes" are generally considered any activity in which the U.S. government is involved, but specifically do "not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so." *See* DFARS 252.227-7013(a)(11).

The period during which government purpose rights are effective is negotiable. While the standard DFARS clause provides a nominal five-year period, either party may request a different period. Timeframes longer than 5 years should be negotiated when a five-year period does not provide sufficient time to apply the data for commercial purposes or when necessary to recognize subcontractors' interests in the data. Upon expiration of the government rights period, the government has unlimited rights in the data, including the right to authorize others to use the data for commercial purposes. During the five year (or negotiated) time period, the Defense Department may not use, or authorize other persons to use, technical data marked with government purpose rights legends for commercial purposes.

Under DFARS 252.227-7013(b)(4), a "special license" may be negotiated. If a contractor is not careful, a "special license" can be a worthless license. A special license must grant the Defense Department no less IPRs than would be available under "limited rights."[28] Consequently, the contractor must focus on how those limited rights will be administered. The negotiated license rights must stipulate what rights the government has to release or disclose the data to other persons or to authorize others to use the data.

---

[27] "Developed with mixed funding," means development was accomplished partially with costs charged to indirect cost pools and/or costs not allocated to a government contract, and partially with costs charged directly to a government contract. *See* DFARS 252.227-7013(a)(9).

[28] "Limited rights" permit DOD to release limited rights technical data for emergency ship repairs or to a foreign government for "evaluation" purposes. Prior to transfer, the transferee must execute a non-disclosure agreement and the contractor asserting limited rights must be notified. *See* DFARS 252.227-7013(a)(13).

2. Non-Commercial Computer Software and Software Documentation

Other than the subject matter, there is little difference between the DOD's non-commercial technical data rights clause and the DOD non-commercial computer software / software documentation clause at DFARS 252.227-7014. This is because the drafters of the two clauses intentionally separated the two forms of IP from previous coverage under a single clause. The separation was made under the assumption that rights in computer software, as well as what constitutes software, is a more volatile area that with technical data rights.

However, one noticeable difference is the definition of "restricted rights" for software versus the definition of "limited rights" for technical data. Regarding restricted rights software, the Defense Department is permitted to release software to service contractors for the purpose of computer program diagnosis and correction, to modify the software, to merge, combine or adapt the restricted rights software with a different program or application, or to respond to urgent tactical situations. *See* DFARS 252.227-7014(a)(14).[29]

D. Protecting Contractor IPRs

In order to protect its rights in the technical data and computer software used in government contracts, a contractor must identify the software or technical data to be delivered with less than unlimited rights. The DFARS requires an offeror to review the government's requirements and to specify any offered data or software that would qualify as limited rights data or restricted computer software. *See* DFARS 252.227-7014(e). On the other hand, the FAR handles this circumstance by having the offeror not deliver any such limited rights or restricted rights data – and list or identify what data was withheld. *See* FAR 52.227-14(g).

Identification of the data, technical data or computer software is the first requirement for protecting a contractor's IPRs. Normally, this identification process is a routine internal measure by the company.

Marking the data (FAR), technical data or computer software (DFARS terms) is an equally important requirement. Under both the FAR and DFARS, delivery of unmarked data, technical data, or software results in a presumption of "unlimited rights" for the government. *See* FAR 52.227-14(f)(1); DFARS 252.227-7013(f) and DFARS 252.227-

---

[29] Essentially, what the FAR calls "support contractors," the DFARS refers to as "service contractors."

7014(f). Every copy of the data, software, and documentation furnished to the government with less than unlimited rights must be identified with an appropriate legend. The exact wording of the legends is prescribed in each clause. Both the FAR and the DFARS provide that a contractor can request the government to apply restrictive markings retroactively if they were inadvertently omitted at initial submission. *See* FAR 52.227-14(f)(1); DFARS 252.227-7013(e)(3) and DFARS 252.227-7014(e)(3). As expected, the U.S. government is not liable for any use or disclosure of the data, technical data, or software occurring before the correct markings are applied.

E. SBIR Agreements

Procurements under the FAR and DFARS account for the vast majority of transactions between the Government and private contractors. There are, however, a significant number of transactions, primarily associated with research and development ("R&D") activities, that depart from the standard FAR and DFARS provisions with regard to intellectual property rights.

The Small Business Innovation Research ("SBIR") program was established in 1982 as part of the Small Business Innovation Development Act. A number of Federal agencies, including the Department of Defense, are required to set aside a portion of their R&D effort for small business concerns, to stimulate technological innovation and commercialization derived from Federal R&D through the use of small businesses.

A SBIR program is conducted by a Federal agency as a three-phase process. The first phase is used to determine the scientific and technical merit and feasibility of ideas proposed by small businesses that appear to have commercial potential. In the second phase, proposals that meet particular Government program needs are further developed. Phases one and two are funded with SBIR funding awards. Where appropriate, a third phase can be conducted in which the commercial applications of SBIR-funded research are funded by non-Federal sources of capital or, for products or services intended for use by the Federal Government, by non-SBIR Federal funding awards. The statutory basis for the program is contained in 15 U.S.C. 638.

For "SBIR data", data first produced by a contractor in performance of a SBIR contract, the Government obtains only limited rights in the data for a certain period of time (4 years after acceptance of all

deliverables in the FAR, 5 years after completion of the project in the DFARS, or such other period of time as negotiated by the participants to allow time for commercial development). Most significantly, during the time that the contractor has exclusive use of the data, the Government cannot disclose the data for procurement purposes.

A contractor under the SBIR program must protect its data by appropriately identifying and marking the data in accordance with the notice requirements laid out in the FAR and DFARS. The contractor must also be especially vigilant as its SBIR program moves into Phase three. In order to remove the contractor's exclusive rights to the data and to inject competition into the procurement process, Government contracting officers often will treat what might be considered Phase three-type activity as being provided under a non-SBIR contract arrangement. This, in effect, gives the Government immediate access to the data produced under that contract for release to other contractors. More than one SBIR contractor has been surprised to find data, developed under what it assumed to be a Phase three SBIR contract, released to its competitors.

Other Government programs encourage contractors to propose R&D efforts that would be funded jointly by the Government and private industry. Prime examples of these programs are the Department of Defense Dual-Use Application Program and the National Institute of Standards and Technology Advanced Technology Program. Because the FAR does not apply to these programs, the Government and the private contractor have a great deal of discretion in negotiation terms and conditions.

The intellectual property rights arising from the program activities are of particular importance to both the Government agencies and the private contractors. The contractors are naturally reluctant to see the work that they helped fund turned over to their competitors after the development effort has been completed. On the other hand, the Government wants as much discretion as possible in the use of the work bankrolled, in part, by the taxpayers. The parties in these "other transactions" often rely upon the data rights laid out in the FAR and DFARS as starting points in negotiating data rights in these non-FAR agreements.

CONCLUSION

A contractor's intellectual property is often the most valuable asset that it brings to the competitive marketplace. Protection of those property rights must be a prime consideration in any of the contractor's dealings with customers, competitors, and even its own employees. Contracting with the Federal Government brings even more complexity to the matter, since the Government's provisions for treating the respective intellectual property rights of both contracting parties are long and involved. A contractor aware of its rights and obligations under Federal contracts can obtain significant benefits in its relationship with the Government. However, if a contractor does not understand the intellectual property protections afforded by the Federal rules, as well as the steps necessary to take advantage of those protections, it could well lose its intellectual property rights through ignorance or carelessness.

Appendix B

Problems with the Regulations and Contract Clauses

While these are not all the concerns of all contractors, the following is a list of DoD acknowledged industry concerns, supplemented by my own concerns as well:[30]

1. The regulations fail to recognize the asset value of intellectual property held by commercial firms (this is one of my own greatest concerns);

2. Previously developed trade secrets of a firm may have to be disclosed by the Government under the mandatory disclosure and filing requirements under the DFARS clauses;

3. The clauses force a trade-off between using intellectual property, generated with scarce resources (high-paid Ph.D.s and scientists) to generate wealth or selling to DoD for a fee. Most firms, given the choice, will choose the former.

4. The clauses are applicable to inventions either conceived or first actually reduced to practice under the contract. These clauses may result in an active area of research, in which a heavy investment exists, suddenly being reduced to practice under a relatively small contract, forcing patenting decisions or other deadlines, and jeopardizing the firm's return on its intellectual property.

5. Industry has a variety of concerns with DoD trade secret policies, including: mixed funding agreements where the firm funds a portion of the work; the small part Government plays in a firm's revenues, yet potentially could jeopardize its intellectual property rights; a firm's preference for guarding its trade secrets and keeping a technology "lead" on its competitors to

filing patents; and the forced disclosure of an invention through the patenting process by the clauses, which compromises the trade secrecy firms prefer to maintain.

6. Prime contractor and subcontractor relationships create blurred lines of intellectual property ownership and claimed ownership, and co-funding under teaming arrangements may lead to friction about intellectual property rights.

7. As companies become more global, it may be necessary for a contractor or its licensee to manufacture abroad. The DoD clauses, however, do not allow exclusive licensing in the United States, unless the product to be manufactured is substantially manufactured in the United States.

8. When a contractor has acquired title to an invention and has not made reasonable progress in commercializing it, the Government retains, under the Bayh-Dole Act, certain "march-in" rights to compel licensing to other contractors interested in commercializing the technology. While the Government claims it has never exercised this right, commercial firms and their investors are very uneasy about these rights.

9. The license rights granted to the Government under DFARS clauses 252.227-7013 and 7014 (clauses "7013" and "7014") are too broad, impossible to monitor, are poorly managed, could be transferred to any Federal agency, for any reason, without apparent control of proprietary business information.

10. Under clauses 7013 and 7014, the contractor agrees to release the Government from any liability for unauthorized disclosure of technical data by a third party if the Government properly released the data to that party. Commercial firms do not trust DoD to take proper safeguards with their data.

---

[30] This list is in large part taken from *Intellectual Property: Navigating Through Commercial Waters*, *supra*, pp. 4-2 through 4-26.

11. Industry believes that contracting officers are acquiring unlimited rights in technical data when they are not needed and are refusing to negotiate when the Government's actual needs are for less than unlimited rights.[31]

12. The marking requirements present several problems. One of the major problems is that the terms of the license are not included within the mandatory language of the prescribed marking or legend format. Locating the license in contract files that are years old, or when contracting personnel on both sides has turned over, can make it difficult to be sure that the actual license will be adhered to.

13. Industry stories circulate widely about government officials removing proprietary markings and legends from intellectual property and proprietary material.

14. Clauses 7013 and 7014 provide for contracting officer approval of a contractor's request for reinstatement of inadvertently omitted markings, if the request is made within six months. Many contractors feel this is too short a time to make the request.

15. Contracting officers sometimes require unlimited rights to copyrighted material for data developed exclusively at Government expense. This gives the Government the right to disclose the data to anyone, including the contractor's competitors.

16. Clauses 7013 and 7014 provide for the conversion of Government Purpose Rights to unlimited rights after a five-year period. Contractors feel that period is too short to allow for recoupment of their investment through the commercialization process.

[31] Limited, unlimited rights, government purpose rights and restricted (computer and software) rights are categories of rights, in which the Government has more or less usage and disclosure rights, depending on which category is obtained.

17. The Government may disclose technical data for the emergency repair and overhaul of commercial items. Contractors fear the disclosure of their technical data for any reason, good, bad, or justifiable. Contractors also fear that emergency may be an excuse for disclosure, and not subject to challenge because emergency is so ill defined.

18. Because the prime contract may not necessarily contain DoD clause 252.227-7015, which covers technical data on commercial items, contractors believe they do not have the authority or do not have to flow down the clause to subcontractors.

19. DFARS clause 252.204-7000 effectively prohibits a contractor's commercialization of technology without the Government's consent. Firms feel this clause is too broad and unduly restricts their ability to publish results or commercialize technologies.

20. Several DFARS clauses (252,227-7026, 7027) and FAR clause 52.227-16 provide for the deferred delivery of technical data to the Government. These clauses require warehousing of technical data for years after acceptance of deliverables, and create uncertainties as to when data will be requested for delivery and whether or not proprietary data years later will be demanded along with legitimately requested technical data.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much.

STATEMENT OF RICHARD N. KUYATH, COUNSEL, 3M CORP.

Mr. KUYATH. The first overhead, please.

Mr. Chairman and members of the subcommittee, I want to thank you for this opportunity to discuss patent rights as a barrier to Federal procurement. I'm Richard Kuyath from 3M's Office of General Counsel, and I've practice Government contract law for about 26 years. I think I offer a unique perspective in that I practiced for a traditional defense contractor for about 14 years, and the last 12 years with 3M, which is probably a 99 percent commercial company.

Let me first give you some background regarding barriers to doing business with the Government in general. First, many commercial companies either cannot or will not accept Government contract requirements. They don't have the systems or the trained people needed to comply. There are many barriers that still continue to exist for R&D contracts. Procurement reform really hasn't addressed these issues. They include the FAR cost principles, the Truth-in-Negotiations Act, the cost accounting standards, and, last but not least, intellectual property rights.

Some of the reasons why commercial companies won't add these compliance systems are, first, the high cost to add these compliance systems. It makes them less competitive in their commercial marketplace, where Government business may be 1 to 2 percent of their business. It interferes with their commercial business.

Next overhead, please.

Today, as we have heard, much of the leading-edge technology is commercial. A recent study has shown that over 92 percent of Fortune 500 U.S. industrial firms have few or absolutely none R&D contracts with the Department of Defense, and most of those companies that do are the traditional defense contractors.

A key point also to note is that, even these commercial companies that do participate, it's often in only a few business units of those commercial companies. The Government is not getting the entire commercial company to participate. Most of this commercial technology is walled off. As a result, two different industries have emerged: commercial and defense. And the Department of Defense is not getting the technology it needs.

The next overhead, I wish you could see this more clearly because it's very enlightening. It shows the top 25 companies receiving U.S. patents for 1998. If you could look at this overhead, you would see that the traditional defense contractor is conspicuously absent. The top three U.S. companies—IBM, Motorola, and Kodak—gathered a total of over 5,000 patents, whereas the top five traditional defense contractors only received 579 patents and didn't even make the list. I think that says a lot for where R&D is today.

Next overhead.

Let's discuss a little bit the Bayh-Dole Act because it's the background regarding the patent rights. It's a very rigid statute. It dictates what patents apply to funding agreements with the Government, and those are procurement contracts, grants, and cooperative agreements. This law applies to small businesses and nonprofits by

statute, and it applies to large, for-profit businesses by Executive order.

The contractor retains title to subject inventions, those inventions made under the Government R&D contract, and the Government obtains a paid-up Government purpose license, but only for Government purposes. The contractor retains exclusive commercial rights, and this is generally very acceptable to commercial companies.

Next overhead, please.

The Bayh-Dole Act had two principal goals when it was enacted: first, to establish a uniform patent policy for all Government agencies. Before that, there were about 26 different policies being followed. Second, to encourage commercialization of Government-funded inventions by permitting the contractor to retain title, to incentivize that contractor to commercialize the invention. The Bayh-Dole Act has generally been very, very successful in commercializing Government-funded inventions.

Next overhead, please.

However, despite its success, commercial companies have five major problems with the Bayh-Dole and its implementing patent clauses. Perhaps the biggest problem is there is no ability to keep a patentable invention a trade secret. Under this law, the contractor must either elect title to the patentable invention it develops or pass the baton to the Government and give the Government that right. If it fails to do so, it will forfeit all rights in that invention.

This requirement to patent patentable inventions conflicts with some companies' intellectual property strategy. Some companies do not patent any inventions whatsoever. They prefer to keep them as trade secrets. For one reason, patents, the general life is 20 years, but if you keep a trade secret, it can last virtually forever. Look at the formula for Coca-Cola, for example.

There are other reasons why trade secrets are important for commercial companies versus patenting, but I don't have time to get into them. They are in my materials.

Another problem for commercial companies, the Government obtains a paid-up Government purpose license and other rights, such as march-in rights in the patentable invention. These rights dilute the value of the patent, especially for those companies that license out the technology to a third party.

Another problem is the term "Government purpose" is undefined, and it could include, for example, foreign military sales or sales to State and local Governments, other areas where commercial companies may want to get involved and sell their products.

Another key problem is the definition of "subject invention" itself in the Bayh-Dole Act. It includes any patentable invention either conceived or first actually reduced to practice in the performance of the R&D contract. If either event occurs, the Government gets rights. However, under U.S. law, an invention can be conceived and patented prior to entering into this Government R&D contract, but the Government will still get rights if the invention is first actually reduced to practice in the performance of the R&D contract. Commercial companies look at this as, in effect, the Government getting rights in their background inventions.

They also see there is no equity necessarily. The contractor may have invested millions of dollars to come up with that conception. Yet, the Government contract where the reduction to practice occurred may only involve a couple of hundred thousand dollars. Interestingly, the former chief intellectual property counsel for 3M Co. testified before Congress in 1981 that this right was too broad under the Bayh-Dole Act and discouraged participation in Government R&D by commercial companies.

Also, use of "first actually reduced to practice" is inconsistent with commercial R&D agreements. In commercial R&D agreements, the rights to inventions are determined by whoever conceives the invention, not whoever reduces it to practice.

Next overhead, please.

Another problem with the act is march-in rights, which are compulsory licensing to third parties of inventions made under the contract for failure to commercialize the invention within a reasonable period of time. The Government has very broad rights under march-in rights. The Government determines what is a reasonable time to commercialize, whether the invention has been reduced to core practical application. In other words, has it been adequately commercialized within a reasonable period of time?

The Government also determines who's going to be the licensee. The licensor, the inventor, has no control over this, and this could be a competitor of the inventing company. This is a major concern for commercial companies. Commentators question whether the Government has the expertise to make these types of determinations.

The fact that march-in rights have never been exercised since they've existed since 1964 still doesn't eliminate this concern. I had one business unit drop out of a Government R&D program because of the concern over march-in rights.

The last major problem with the Bayh-Dole Act is that it has mandatory disclosure, election of title, and filing requirements that have to be accomplished within certain time periods for subject inventions. For example, a contractor must elect title within 8 months of disclosure of that invention to the Government. These time periods are often too short and they conflict with a company's internal commercial practices. A company may need much more time to decide whether to elect title. It costs a lot of money to file and maintain patents, and this has to be done not only in the United States, but worldwide. You have to figure out which countries throughout the world you want to file and maintain patents, and it costs a lot of money to do that in each country. So more time is needed here. Also, under the terms of the patent clause, you can forfeit title for failure to meet these requirements, these time requirements, and this is a major concern for commercial companies.

I want to thank you for the opportunity to present my views, and I'll be pleased to answer any questions.

[The prepared statement of Mr. Kuyath follows:]

Testimony of Richard N. Kuyath before the House of Representatives Subcommittee on Technology and Procurement Policy on July 17, 2001

Mr. Chairman and Members of the Committee – First let me thank you for the opportunity to appear here to today. I am Richard Kuyath from 3M Company's Office of General Counsel. I have practiced Government contract law for 26 years. The first 14 years of those years, I worked for a major defense contractor; the last 12 have been for 3M Company. As you know, 3M is a multinational company with six market centers and over 40 product divisions. Worldwide sales were just over $16 billion in 2000. R & D expenditures were just over $1 billion.

As you know, I'm here today to discuss one of the major barriers preventing commercial companies from performing R&D for the Government. This barrier is Government patent right.

A statute commonly called the "Bayh-Dole Act" dictates government patent rights. The goals of the Bayh-Dole Act were, in general, very favorable to commercial companies. They were, first, to establish a uniform patent rights policy for all Government agencies for small business and nonprofit concerns and, second, to give the contractor the right to elect title to its inventions. Prior to the Bayh-Dole Act, there was no uniform Government patent rights policy and the most common agency practice was for the Government to obtain title to contractor inventions and the contractor to retain a nonexclusive license. The problem with this practice was that there was little incentive to commercialize inventions where the Government retained title. The Bayh-Dole Act reversed this policy and this has resulted in significantly greater commercialization of inventions developed with Government funding.

The Bayh-Dole Act applies to patentable inventions made under Government procurement contracts, grants and cooperative agreements ("subject inventions") by small business firms, educational institutions, and nonprofit organizations. The Government's patent policy under the Bayh-Dole Act has been extended to large, for profit businesses by Presidential Memorandum dated February 18, 1983 and Executive Order 12591. In addition, two sections of the Bayh-Dole Act also apply to large, for profit businesses as a result of a later amendment to the Act. These are the Government-purpose license and "march-in rights."

The Bayh-Dole Act provides that the contractor has the right to elect title to subject inventions made under the contract, with the Government obtaining a royalty-free, Government purpose license.

Commercial companies have five major concerns with the Bayh-Dole Act:

1. **No Ability to Keep Patentable Invention a Trade Secret**. The Bayh-Dole Act requires the contractor to elect title and patent each invention made under a

4. **"March-In Rights".** March-in rights enable the Government to require a contractor that has elected title to a subject invention to grant a license in any field of use to a third party applicant, on reasonable terms, when the contractor has not commercialized the invention or if certain other conditions occur. The Government has substantial discretion under march-in rights. For instance, it may grant a license to a competitor. In addition, it has the right to determine whether the invention has been commercialized within a reasonable time. It is questionable whether the Government can make such determinations, which are largely driven by market and business considerations. As a result, some commercial companies will not perform Government R&D even though march-in rights have never been exercised in any reported case.

5. **Mandatory Disclosure, Election and Filing Requirements for Subject Inventions.** The Bayh-Dole Act requires the contractor to take certain administrative steps in order to obtain title to subject inventions. For example, the contractor must timely disclose the invention to the Government, make an election to file a patent application, and file the application. The time periods specified are frequently too short and do not reflect commercial practice. Failure to comply may result in forfeiture of title to the Government. Commercial companies often are very concerned that they will forfeit rights in inventions due to failure to comply with these administrative requirements.

Possible Solutions

1. **DOD Layman's Guide on Intellectual Property.** At the direction of former Under Secretary of Defense for Acquisition and Technology Jacque Gansler, the DOD is developing a layman's guide on intellectual property. This document is to provide guidance to DOD contracting personnel about what rights are negotiable under DOD's standard data and patent rights clauses. This guide (presently in draft form) is an excellent step in the right direction. However, it is my opinion that the Bayh-Dole Act precludes the flexibility needed to eliminate the concerns raised above. In addition, the guide is so complex it may be little used in practice.

2. **Greater Use of "Other Transaction" Authority.** The DOD, NASA, and the Department of Transportation have authority to issue "other transactions" to perform R&D projects, although such authority is primarily used by DOD. "Other transactions" are exempt from almost all of the laws and regulations of concern to commercial companies, including the Bayh-Dole Act. As a result, the Government is able to negotiate patent rights and other clauses in "other transactions" that eliminate the primary concerns of commercial companies. DOD has found "other transactions" to be very helpful in attracting commercial companies to perform R&D for DOD.

3. **Amend the Bayh-Dole Act to permit any contractor obligation or Government right to be waived or omitted.** If this change were made, it would reflect the original Government policy applicable to large, for profit businesses set forth in the Presidential Memorandum on Government Patent Policy dated February 18, 1983 cited

Government R&D agreement, or give the Government the right to do so, with the contractor retaining a royalty-free, nonexclusive license. Therefore, there is no ability for a contractor to keep a patentable invention a trade secret.

This is a major concern of commercial companies for at least three reasons. First, some companies do not patent inventions, preferring instead to keep them as trade secrets. One reason for this is that under U.S. law, the life of a patent is 20 years, whereas the life of a trade secret is indefinite. Second, some companies do not patent certain types of inventions such as processes because it is very difficult to discover whether they are being infringed. Third, in some cases a company may want to keep an invention a trade secret because it would otherwise have to reveal a background trade secret in its patent application. Since the contents of issued patents are disclosed to the public, the background trade secret would be lost.

2. **The Government Obtains Royalty-Free, Government-Purpose and Other Rights.** The Government obtains a royalty-free license for Government purposes ("for or on behalf of the United States") and certain other rights, e.g., "march-in rights." These rights dilute the value of the patent in some markets, particularly where the Government is the primary or only customer. These rights also make it more difficult and less profitable to license the patent to third parties. Another concern is that the term "Government purpose" is undefined and could, for example, include foreign military sales and sales to state and local governments.

Even when their principal or exclusive market is commercial, some commercial companies will not participate in Government-funded R&D because of the Government purpose license and other rights that attach to subject inventions. This is particularly the case with respect to performing Government-funded R&D in the core technologies of the commercial company.

3. **Any Invention "Conceived or First Actually Reduced to Practice."** The Bayh-Dole Act defines a "subject invention" very broadly to include any patentable invention conceived or first actually reduced to practice in performance of work under the Government R&D agreement. Note that an invention can be patented before it is actually reduced to practice. As a result, the Government can obtain rights to an invention patented by a company prior to a Government contract if that patented invention is later first actually reduced to practice by that company under the Government contract. This could result in the Government obtaining rights in an invention conceived outside of a Government contract at significant expense but first actually reduced to practice under a Government contract of small dollar amount.

In the commercial world, the standard practice is that a company that funds the research of another party under an R&D contract obtains rights in inventions "conceived" in the performance of the R&D contract. No rights are obtained by the buyer if the seller has already conceived the invention prior to the R&D contract but the invention is first actually reduced to practice under the R&D contract. Therefore, the Bayh-Dole Act is inconsistent with commercial practice.

above. If this flexibility is provided under the law and frequently used by the Government, it would attract many more commercial companies to perform R&D for the Government.

Thank you again for the opportunity to present my views. I'll be happy to answer in further questions.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Dr. Hill.

STATEMENT OF CHRISTOPHER T. HILL, VICE PROVOST FOR RESEARCH AND PROFESSOR OF PUBLIC POLICY AND TECHNOLOGY, GEORGE MASON UNIVERSITY

Mr. HILL. Mr. Chairman and members of the committee, I want to thank you for giving us the opportunity to talk to you this morning about it from a university point of view on issues affecting participation in Government R&D procurement. I'd like to tell you a little bit about research at George Mason, comment on the Bayh-Dole Act, and raise a couple of issues that affect our ability to participate, cost-sharing requirements and publication limitations.

Last year George Mason earned more than $50 million in new grants and contracts, of which direct Federal funding supported about 60 percent and Federal funds that flow to us through subcontractors supported another 15. George Mason's research is strong in areas of interest to Federal mission agencies like DOD, NASA, and FAA. DOD is our largest supporter. Our strengths include information technology and information security, remote sensing from space, simulation of explosions like that which occurred on the USS COLE, intelligent transportation, and human factors engineering. Our partners include such firms as SAIC, Raytheon, Boeing, and Lockheed Martin, small firms, and other universities.

We engage in R&D procurement contracting for a variety of reasons.

First, we made a decision 20 years ago to focus on information technology in support of the needs of our region in northern Virginia. IT funding occurs in mission agencies, so our faculty are naturally drawn there to seek funds for their research.

Second, George Mason faculty are often asked by prime contractors like the ones I mentioned to participate in Federal contract proposals.

Third, we go after Federal research contract procurements because there's where the money is.

The Bayh-Dole Act of 1980 let universities patent, own, and commercialize inventions made with Federal funds. We believe this act is very beneficial to universities and certainly agree with earlier comments from GAO in that regard. It has changed how universities do research, and it has contributed to the emergence of an entrepreneurial culture there.

Bayh-Dole works well when the university receives Federal funds directly and faculty or students use them to make an invention. If a patent results, we can license it to industry or use it to help establish a startup. But there are problems.

First, prime contractors do not always flow the Bayh-Dole provisions down to university subcontractors, and they sometimes claim title to all inventions made under the prime contract, even those we make. We cannot accept such provisions. And I am very pleased that the DOD report mentioned earlier makes clear on page 4–10 that we should own this intellectual property.

A second problem with Bayh-Dole can come up when software is developed with Federal R&D funds. The software may be patentable and it may also be copyrightable. The patent may belong to

us under Bayh-Dole; the copyright can be taken by the Government under rights-in-data clauses, creating an intolerable situation of joint ownership of the same piece of property by two widely divergent authors. We think this needs to be fixed, perhaps by establishing in statute that patent law takes precedence over data rights in the case of software.

Let me turn to the cost-sharing problem. Since World War II, the Government has paid the full cost of research at universities, because we don't have any other way to pay the costs of research. We don't get State funding, and we don't get private gifts in support of research. Increasingly, however, the mission agencies require or, what's worse, strongly suggest but don't specify cost-sharing by contractors to win R&D contracts. This puts a heavy burden on university bidders and sometimes keeps us out altogether. To cost-share, we have to dip into very scarce discretionary funds, and the burden is even worse when we are a subcontractor to an industrial prime that finds it a good business decision to cost-share and then asks us to assume our share of the cost-sharing.

Cost-sharing also comes up under cooperative agreements. We've been asked to pay as much as half the cost of Federal projects under these cooperative agreements. We can't handle many of these without a trip either to the poorhouse or the casino, where we would hope to win.

Universities should not have to cost-share on contract procurements or under cooperative agreements. The principle of full cost reimbursement should apply. If cost-sharing must be used, the agency should state the amount or proportion of cost-sharing that will be recognized, so we don't get involved in damaging bidding wars with our fellows.

Finally, let me address publication limitation problems. Publication is our lifeblood. However, R&D funders frequently seek to limit the rights of our faculty and students to publish. We can live with temporary restrictions to permit review of draft publications, but we will not agree to limitations on publication to protect the reputation of the sponsor. When Government-funded research is classified, or a discovery on an unclassified project is deemed "born classified"—this rarely happens—publication restrictions are burdensome, but we understand why they have to be there.

Sometimes, however, DOD contract officers assert the right to review and to delay publication indefinitely at their discretion without recourse to security classification. The DFARS at section 252.204–7000 incorporates this power on their part.

Now in recognition of the special needs of universities to publish, the OSD issued an instruction back in 1987 that gave contract officers the authority to waive such requirements at their discretion for "fundamental research activities." Section 35 of the instruction states, "Papers resulting from unclassified contracted fundamental research are exempt from prepublication controls and this review requirement."

Now we can usually, but not always, successfully argue for removal of 204–7000 from mission R&D contracts, but a major problem comes up if we are a subcontractor to a prime who's already accepted that clause without consulting with us. Unless the prime will go back to the agency to seek its removal, we must either

refuse the contract or find some sort of awkward temporary fix to bridge an unsatisfactory situation.

This is not just a George Mason problem. We recently consulted with 11 major research universities, including MIT, Penn State, the University of Texas, and others on this clause. Most of them refused to accept it, and thus, forgo participation in contracts that include it.

We would prefer to see the instruction I mentioned above, the concepts at least, adopted as a standard clause in the DFARS, with mandatory application to university performers as partners or subcontractors to private firms when doing fundamental research. The DOD report addresses this issue at page 4–24, but, frankly, it fails to address university concerns when it does so, and we would hope that in a revision it could be addressed there.

Thank you. I would be glad to take your questions.

[The prepared statement of Mr. Hill follows:]

A University Perspective on Issues in Federal R&D Procurement

Testimony
before the
Subcommittee on Technology and Procurement Policy
Committee on Government Reform
United States House of Representatives

July 17, 2001

Christopher T. Hill

Vice Provost for Research
and
Professor of Public Policy and Technology
George Mason University

and
President
George Mason Intellectual Properties, Inc.

Fairfax, VA 22030

Chairman Davis and Members of the Subcommittee:

My names is Chris Hill. I have been a member of the faculty at George Mason University (GMU) for the past seven years, and I have served as the Vice Provost for Research, or "chief research officer," of GMU for four. During the past year, I have led the effort to establish George Mason Intellectual Properties, Inc., which will be responsible for commercializing the results of research at George Mason University. In my various capacities, I am responsible for the University's overall research strategy, for overseeing all research grant and contract proposal submissions and award negotiations, for ensuring that GMU research is in compliance with a variety of federal and state regulatory requirements, and for the patenting and commercialization of faculty and student research. Earlier in my career, I spent more than eight years as an expert adviser to Congress as senior specialist in science and technology policy at the Congressional Research Service and as a staff member of the former Office of Technology Assessment.

Separately, I might note that I am a principal in a small consulting partnership called Technology Policy International, whose major clients have been policy development units of Japan's Ministry of International Trade and Industry. A report that my colleagues and I did for MITI a few years ago was influential in the adoption of what is called in Japan, the "Japanese Bayh-Dole Act." This new law enabled Japanese universities to hold title to and commercialize inventions made with government funds, an obvious borrowing from America's genuine Bayh-Dole Act.

GMU and R&D

GMU is a relative newcomer on the American R&D scene, but our activities are growing rapidly in both volume and complexity. During the fiscal year we completed at the end of June, we earned more than $50 million in new grants and contracts. We have doubled such funding in the past four years, and quadrupled it in the past decade.

The federal government supports three-fourths of this R&D. Direct federal funding supports 60% of our R&D activity, and federal funds that flow to GMU as a subcontractor to other federally-funded prime contractors support another 15%. Like most universities, we receive a mix of grant, contract, and cooperative agreement funds from the federal government.

GMU research is quite strong in a variety of areas of particular interest to federal mission agencies such as DOD, NASA and the FAA. Our strengths of interest to the mission agencies include--but are not limited to--information technology in its many manifestations including information security, remote sensing from space, very large scale simulations of complex phenomena including explosions and dispersion of hazardous agents, intelligent transportation systems, and human factors research in both engineering and psychology. Much of this research is conducted under contract or via cooperative agreements, often in concert with private firms or

other universities. We partner with such well-known firms as SAIC, Raytheon, Boeing, and Lockheed Martin; with small firms not as well known; and with universities in and beyond Virginia.

Because our R&D portfolio is strong in areas of interest to the mission agencies, we have garnered a great deal of experience with federal R&D contracting, in such aspects as team building, proposal writing, contract negotiating, project implementing, and reporting.

WHY GMU ENGAGES IN FEDERAL R&D CONTRACT PROCUREMENTS

GMU and its faculty and students pursue and engage in federal R&D contract procurements for a variety of reasons.

First, as a young university in the very dynamic Northern Virginia region, GMU decided some two decades ago to emphasize three broad areas of great regional importance: information technology, public policy and the arts. We felt it our responsibility to help provide both an educated workforce and a flow of new ideas and better understanding to help support the industry in our region--we were both prescient and fortunate in committing to build strength in information technology just as our region began to explode with new commercial and government contracting activity in this field. Today, our commitment to "IT" continues unabated as evidenced by the vision statement we adopted last year which says, in part, that George Mason will be "an innovative university for the information society." Much of the available funding for R&D at universities in the field of information technology comes from the federal mission agencies such as various units of DOD, DOE, and NASA. And, since many of our faculty are interested in new applications of IT to critical national problems such as information security and e-commerce, they are naturally drawn to the mission agencies and to partnerships with companies that are active both in the commercial and government markets.

Second, and closely related to the first, GMU faculty are often sought after by information technology companies to provide critical inputs to large federal procurement proposals in areas in which we have unique capabilities or unique organizational abilities to do advanced research. Our constituents want our help, and we try to fulfill their needs when it is appropriate and sensible for us to do so. It is often not appropriate for us to take on an entire contract effort on a complex information system or major systems procurement, but subcontracting the interesting and more fundamental or long-range R&D parts can be very compatible with our institutional goals.

Third, we seek federal R&D procurement opportunities because "that is where the money is." The Willie Sutton theory works as well for researchers as it does for bank robbers. An important strength of the American R&D system is its exquisite responsiveness to changes in national priorities. The best way to see that national R&D priorities have changed is to look at the distribution of R&D funds across agencies and missions. And, when the availability of funds changes, researchers in universities, contract R&D firms, and government laboratories shift their

activities in response. GMU is no exception--our faculty apply their talents in areas in which funding is available and for which we have matching capabilities and interests.

THE BAYH-DOLE ACT AND UNIVERSITY R&D

Since 1980, the United States has permitted federally-funded universities, other non-profit organizations, small firms and individuals to seek patent protection for inventions made with federal funds, to hold title to any resulting patent, and to license or otherwise commercialize those inventions to the private sector. The legislation that made this possible--Public Law 96-571-- is commonly known as the "Bayh-Dole Act." Under a Presidential executive order issued by President Reagan, large firms may also hold title to such patented inventions unless this is specifically prohibited by statute. Bayh-Dole replaced a mix of earlier policies on intellectual property that differed by agency and program with a federal-wide uniform approach.

The Bayh-Dole Act resulted from a re-examination of an older perspective on government-funded patents. The earlier view was that it was in the public interest for any invention made with public funds to be available to the public for anyone who wished to take advantage of it. In this view, it would have been inequitable and wrong to tie up such inventions and to permit any particular individual or firm to benefit preferentially from owning and exploiting them. However, in more modern times, when making a patented invention is often only the first in a long sequence of expensive steps toward bringing a new product or process to market successfully, it became increasingly apparent that the old policy was ineffective. For, unless one person or company could control the use of the invention, it would often not be worthwhile for anyone to make the downstream investments needed to transform the invention into a viable commercial entity. Bayh-Dole addressed this problem by lodging the ownership of, and the power to control, the invention in the hands of the inventing organization.

To ensure that federally-funded inventions remained available to the government for its own use, however, Bayh-Dole also gives the government a non-exclusive, royalty-free license to use the technology for government purposes. And, it gives the federal government the right to retake ownership of the patent if the inventor fails to commercialize it or misuses it.

Important from a university perspective is that Bayh-Dole requires that non-profit organizations, including universities, share royalties with employed inventors. It is GMU's present policy to distribute half of net revenues from inventions to faculty, employed student, or staff inventors. Bayh-Dole does not affect in any way the determination of who made a particular invention and thus deserves to be an inventor on a patent. It affects only the ownership and control of the patent if one is obtained. And, Bayh-Dole, as implemented, does not demand that universities apply for patents on federally-supported inventions, although it certainly both increases the incentive to do so and creates expectations that inventors will disclose their inventions and universities will seek to patent them where financially sensible.

GMU believes that the Bayh-Dole Act is very beneficial to universities, including GMU, and that it also serves the national interest to have in place a legal mechanism that vests title to patented inventions in university inventors. Bayh-Dole has changed the way universities do the business of R&D. It has contributed to the emergence of an entrepreneurial culture in universities, not just in engineering but in biology, chemistry, and a host of other fields such as medicine, education, nursing, and management. Today, nearly every research university of stature has a "technology transfer" office of some sort to review invention disclosures, apply for and manage patents, and negotiate with private firms to commercialize those patents through licenses, equity investments, or other means. New faculty in many fields are as interested in the university's technology transfer policies and practices as they are in the quality of the students or adequacy of the facilities.

We further believe that Bayh-Dole works quite well in straightforward circumstances, such as when the university receives a federal grant or enters into a federal grant or cooperative agreement directly with the government. In such cases, inventions are usually made by faculty or students BEFORE a potential industrial partner is on the scene. The university seeks patent protection, if it is warranted, and then seeks one or more industrial partners to which to license the technology. In the past few years, universities have increasingly entered into agreements in which they agree to accept an equity interest in a start-up firm built around the invention in lieu of some or all of a royalty payment. This approach is particularly attractive to cash-poor new firms that cannot afford to make running royalty or license fee payments but do hope to grow and prosper over time. "Taking equity" is all the rage at universities today, although the bulk of the activity nationwide remains in more traditional licensing agreements.

Bayh-Dole is not without its challenges and problems, however. Here are some.

First, prime contractors do not always automatically flow down the Bayh-Dole provisions to university subcontractors. Instead, by omission of such provisions or even by inclusion of contrary provisions in subcontract documents, they seek to claim title to all inventions made under the contract, whether made by their employees or the university's. Clearly, we have no interest in claiming title to inventions made by the partner's employees. By the same token, however, we have every interest in holding title to inventions made by ours. The situation can be more difficult if the prime contractor has already negotiated its contract with the federal agency and is offering the university a "take-it-or-leave-it" contract vehicle that has already been put in place for other subcontractors, which are often firms rather than universities. Elaborate negotiations are sometimes necessary to establish the university's position. In the case that an invention is made by employees of both organizations, we prefer to take the position that the resulting patent will be jointly owned by the university and the prime contractor, even though joint ownership of patents introduces other complications and loss of exclusive control by both parties.

It may be useful for Congress to consider requiring that all agencies clarify their position on whether the Bayh-Dole Act applies to university and other non-profit subcontractors to federal prime contractors, regardless of what standards of patent ownership apply to the prime contractor.

A second problem with Bayh-Dole has arisen with the growing importance of software as the product of university R&D activities under federal funding. Software can be protected by patents, copyrights, or both, depending on the circumstances. The underlying idea or algorithm embodied in the software may be patentable if it meets the usual tests of a patentable invention. Its execution as software in terms of lines of programming code is definitely copyrightable as the expression of an idea. The difficulty is that both federal law and procurement contract provisions treat patents and copyrighted materials differently.

Under Bayh-Dole, the software patent, if obtained, belongs to the university. Ownership of the copyright, however, may be claimed by the government under "rights in data" clauses, with the very confusing result that ownership and control over the two bodies of property representing a single piece of software may be divided. We believe that federal legislation may be necessary to overcome resulting difficulties, most likely by establishing that patent rights take precedence over data rights.

A third issue arises from the application of Bayh-Dole principles to non-federal sources of R&D funds. The Bayh-Dole Act applies only to the results of federally-funded projects--it is not a requirement that applies to all of an institution's research portfolio. However, in view of the dominance of university sponsored research activities by federal funding, many institutions have extended the Bayh-Dole concepts to all of their research grants and contracts. This is basically GMU's position at present. Most important, this means that GMU generally holds to the position that it owns title to any invention made by GMU-employed inventors in the course of their employment, regardless of the source of funds. Industry is not always pleased with or accepting of this posture. Many firms presume that the results of any R&D project they support with their own funds should belong to them. To the contrary, we are unwilling to accept such terms. We will, however, agree to contract terms that extend substantial control over the use of the invention to the firm that paid for its invention, with payment of reasonable royalties or other compensation to the university to be shared with the inventors. We take this stance because, first, Virginia statutes do not permit us to assign title to inventions made with public funds, and, second, the public and the university may have an interest in a wider or more effective use of the invention than does the company that pays for it, for example, in applications entirely different from the one in which the source of funds is engaged. We further rationalize our position by noting that firms rarely pay market prices or even full costs for R&D they support at the university, and that it would therefore be inappropriate for them to obtain all the rights to resulting property. Well-established firms with competent intellectual property counsel almost never have a problem with this stance; however, small firms and those new to the I.P. world often disagree sharply with our position. A few have abandoned proposed projects at GMU, as well as at other universities. It is important to note that this problem does not in any way reflect

badly on the wisdom or value of Bayh-Dole itself. I mention it, nevertheless, because so much of the public discussion of university-industry I.P. relations revolves around just this kind of situation.

Finally, I should acknowledge that Bayh-Dole does not necessarily address adequately a host of other issues for private firms that might contract with the federal government to do R&D. These issues include the treatment of background data, mandatory licensing of government-funded patents to competitor firms doing business with the government, and the like. I will leave it to the industrial representatives to make their case to you on such matters.

OTHER ISSUES AFFECTING UNIVERSITY PARTICIPATION IN R&D PROCUREMENTS

I would like to raise two other issues affecting the ability and willingness of universities to participate in government contract R&D procurements and in their close cousins, cooperative agreements. One of these is the issue of cost sharing in contract competitions, and the other is the flow-through of limitations on publication of research results on certain unclassified DOD contracts.

Cost Sharing and Matching Funds

One of the bedrock principles of the federal R&D relationship with universities since the relationship began during World War II has been that the government would pay the "full costs of research." In practice, this meant that R&D grants and contracts would cover the costs of the time and effort of the faculty, students, and staff involved in the project; the costs of other expenses such as travel, materials, and equipment; and, most important, the indirect costs associated with administering and housing the research. This stance is particularly appropriate in the case of government contract R&D projects in which the primary reason for the research is to meet a government need. And, it realizes that, realistically, a university R&D performer is unlikely to build a business around a federal R&D contract--there is little prospect of a stream of future revenues from a procurement contract that would make it financially rational to view the R&D contract as a "loss leader," as may happen in industry. Paying the full costs of research also recognizes that universities, as a rule, receive very little institutional support for their research functions--nearly all public funds and private gifts are directed at instructional support. There is no appropriate "pot of money" from which to make cost sharing contributions.

Increasingly, however, federal mission agencies have issued R&D contract solicitations that incorporate required sharing of the costs of the research by the performers. Such requirements pose a very heavy burden on potential university bidders, and may discourage them from bidding altogether. To meet such cost-sharing demands, a university must dip into its supply of discretionary funds, which are often in very short supply. At GMU, for example, only a tiny fraction of the annual operating budget appears anywhere in a discretionary account. Gifts from alumni and friends are reserved to help students or to meet essential needs that can't be met from public funds because of Commonwealth procurement rules. We are able to retain

some proportion of the indirect cost reimbursements on grants and contracts for use in starting new research ventures, but every dollar spent from this source on cost sharing is a dollar not available to build new areas or help with research in fields that are less well supported by government.

No R&D performer likes cost sharing. However, for the university the burden is exacerbated when we are a junior partner with an industrial prime contractor. Industrial contractors may decide to incorporate voluntary cost sharing as a way to display a favorable price/performance ratio to government selection boards. We then get asked to assume "our share" of the cost sharing burden, even though we have no ready source of funds to meet this obligation. The situation is even worse when we are part of a team that is "best and final" in a competition and the agency hints that cost sharing, of undetermined level, would be viewed positively. In this case, the pressures to "share" the costs of the research can be overwhelming--the prime and our faculty can anticipate receiving a substantial award if they can get the price right, while the administration feels the pressure of having to find the funds to meet the cost share demands.

The problem of required or suggested cost sharing or matching funds also arises in connection with grants and cooperative agreements from federal agencies to universities. In the case of grants, there is greater possibility that the institution has a genuine interest in conducting the research in partnership with the government, so some level of cost sharing may be acceptable in principle, if burdensome in practice. And, when the federal grant is intended to support university infrastructure (e.g., support for building construction or equipment purchase) or the educational mission (e.g., training grants), some level of cost sharing or matching funds is appropriate. Finally, it is useful to distinguish situations in which eligibility for a federal grant is contingent on raising matching funds from third sources, such as industry, who stand to benefit from the project. We do not object to such matching requirements from the intended beneficiaries.

Cooperative agreements present a particular difficulty. Under the Federal Grant and Cooperative Agreement Act of 1977, agencies may use the cooperative agreement vehicle to support research when there is a genuine mutuality of interest on the part of the government and the recipient in the research results. Generally, agencies play a stronger role in the management of cooperative agreements than they do in grants, but the vehicle does not impose on the agency or the performer all the burdens of a contractual relationship. Both sides appreciate the additional flexibility, yet the agencies seem to take advantage of this vehicle to pose substantial cost sharing burdens on universities. We have seen cases in which up to one-half of the costs of projects under cooperative agreements are expected to be met by universities. We can't handle many of these without a trip to the poorhouse or the casino.

We would hope that in mission agency contract procurements it would be possible to establish several principles. First, university partners should not have to share costs on their part of contract procurements--the principle of full-cost reimbursement should apply. Second, if cost

sharing is to be expected, then the agency should be required to state the amount or proportion of cost sharing that will be recognized, so that universities and their partners do not find themselves in a bidding war that only hurts. Third, agencies should discourage the use of time-and-material contracts with university participants in contract procurements and should make full use of the provisions of OMB A-21 as they apply to cost principles for university research contracts and grants. On the latter point, time-and-material contracts impose burdens on universities that must keep their books for other government funders such as NSF and NIH on a different basis. Agencies should be discouraged from using cooperative agreement vehicles to impose heavy cost-sharing requirements on R&D performers, when this vehicle is usually applied to ease the burdens of control.

Publication Limitations

Sponsors of R&D at universities frequently seek to impose limitations on the rights of faculty and students to publish the results of their work. Infrequently, such limitations are imposed by the federal government in the interests of national security, either because the research itself is classified or because a new discovery is deemed "born classified" and publication is prohibited (the latter is probably a rare event today).

Private R&D sponsors also seek publication limits either to avoid inadvertent leaks of company confidential information used in the course of research or to protect the possibility of seeking patent protection over new ideas developed in the course of the research.

Universities have as a major reason for being the discovery and open publication of new understandings of nature and of the constructed world. Publication is our life blood--publications are the coin of the realm for appointment, promotion and tenure of faculty and for the initiation of the research career of students. As a general rule, we must insist on eventual publication of appropriately reviewed (if necessary) research results.

In order to balance the interests of sponsors in limiting dissemination and of the university in open publication, universities, including GMU, will typically agree to permit sponsors a limited period of time in which to review papers and dissertations before they are submitted for publication, with the scope of the review limited to review for national security classification, inadvertent disclosure of company proprietary information, or identification and protection of inventions of value. We will typically not agree to review of the findings or conclusions of publications except insofar as they address these topics. For example, we will not agree to limitations on publication simply to protect the reputation or financial interests of the sponsor. This stance permits us to protect what we value most--the integrity of our findings and research processes and community.

On occasion, however, contract officers, especially in DOD, ask for the right to review and delay publication indefinitely at their discretion, without recourse to security classification.

The Defense Federal Acquisition Regulations (DFARS) at Section 252.204-7000, "Disclosure of Information," includes this authority as follows (quoted in part):

> "The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium...pertaining to any part of this contract or any program related to this contract, unless--
>
> (1) The Contracting Officer has given prior written approval; or
>
> (2) The information is otherwise in the public domain before the date of release."

In recognition of the special needs of universities to publish, the Office of the Secretary of Defense issued an "Instruction" on October 6, 1987, that gives contract officers the authority to waive such requirements at their discretion for research grants and contracts to universities falling under DOD budget categories 6.1 and, sometimes, 6.2 that can be defined as "fundamental research activities." Section E5 of the Instruction states that "Papers resulting from unclassified contracted fundamental research are exempt from prepublication controls and this review requirement."

The problem for the universities arises when prime contractors accept, as a matter of course, Section 252.204-7000 without consultation with their university subcontractor partners. When we subsequently object to this clause for the reasons stated above, it is often too late for the prime to negotiate it out or the prime is unwilling to request such a change from DOD. We are then left with a situation in which we must either refuse the contract award or apply a temporary "fix" to bridge an unsatisfactory situation. At GMU, if we feel we must accept this clause we will require that no student work on the project in connection with a thesis or dissertation and that the faculty involved must already have tenure. Both students and faculty must sign a statement certifying that they understand that their rights to publish may be abridged by the Department. We do this only rarely and then only because we recognize that there may be circumstances at a university in which publication is not as important as most other times, although each such agreement compromises the fundamental principles on which we operate. We have in the recent past consulted with eleven major research universities, both private and public, on 252.204-7000 and have learned that most of them refuse to accept this clause under any circumstances and, thus, they forgo participation in contracts that include it.

We would prefer to see the Instruction mentioned above adopted as a standard clause in the DFARS, with mandatory application to university performers as partners or subcontractors to private firms. I should emphasize again that we have no difficulty with such a clause if it is time limited and the reasons for government limitations on publication are severely circumscribed. What is not acceptable is a limit on publication that is bounded neither by time nor purpose.

CONCLUDING REMARKS

Mr. Chairman and Members of the Committee:

GMU wishes to thank you for the opportunity to present our views on these important matters concerning federal R&D contracting, intellectual property management, and barriers to more full university participation.

I would be glad to take your questions.

Mr. TOM DAVIS OF VIRGINIA. Well, thank you very much for a great round of testimony.

The problem we get out in politics is you go out and the taxpayers say, "We paid for this. It belongs to us." We see this whether it is in pharmaceuticals or in other inventions and the like, and they seem to feel that somehow, if taxpayers pay for the development of these inventions, and so on, that it ought to belong to them, and companies shouldn't go off and make money. If the company that benefits from that somehow gave you a contribution or did you a favor, then it looks like a payoff. So that has been the politics of this for a long time. I think until we got into this, we didn't realize the intricacies that go into this and how the Government is really losing out in terms of a lot of innovation because we have rules that companies are in a position, just like 3M, saying, "Forget it. We have other markets that we can go to and protect ourselves."

I think the way we talk about the difference between trade secrets and patents is very, very important to understand because Bayh-Dole really doesn't contemplate that. I don't know right now—it would take a pretty sophisticated contracting agent to understand those differences and try to work through that, it seems to me.

I have a lot of questions, and I am going to try to limit myself to 5 minutes for the first round. Let me start, Mr. Carroll, with you.

I gather from what you have talked about, is one of the concerns of the small business coming up with innovation sharing it with the Government? The Government could take that and then they could go to one of the regular large guys and say, "Why don't you produce this for me?" and you're out of the loop altogether. You have spent all the time. You brought the innovation and you carved that niche that the larger companies fail to do, but you are out of it because of marketing and everything else, and you really have no protections in this. Is that fair?

Mr. CARROLL. Even when you have protections, the pressure is enormous for that to occur, like under the SBIR Program. The real loss of that—and I can understand the Government's immediate need. You see, they've got a small business that has come up with a clever way, say, of implementing a new capability. Let's talk about DOD and say a clever way of implementing a new capability in a system, and they've got a large company with a system that could really use that. What they want to do is they want to say, well, gee, let's give that to the large company and let that company implement that capability.

The result of that is to gut the small business' ability to negotiate its position in that acquisition because, once disclosed to the large company, two things generally happen. One is they generally do not implement it because it wasn't invented there, and there is a strong bias against outside ideas in anyone's organization. That's just human nature. The second is that the small business no longer has adequate protection to attempt to offer that to other places, and they certainly will never get a venture capitalist to come in and say, "I'm willing to invest in your product and, oh, by the way, a lot of people have that intellectual property now that, if you're

successful commercializing it, they can jump on the bandwagon without having to invest any additional money." And they lose the ability for creative destruction. They lose the ability for a small business to gain its intellectual property strength to threaten incumbencies with alternatives, and that is such a powerful loss.

In the cases that you can find where this hasn't occurred and small businesses have protection and can offer alternatives that threaten incumbencies, the incumbencies change and offer better alternatives. That's what you're really looking for. What the Government's interest ought to be, in my opinion, is to create these competitive environments that foster innovation, not to get access to the intellectual property.

Mr. TOM DAVIS OF VIRGINIA. The Government's position has been basically, "Look, Small Business, we funded you through maybe three stages of this, and now we've got what we've wanted from you, and we're going to use it the way we think is best." What you are saying is they may think they are using it the best way, but because of just inertia factors in some of the larger companies and the fact that they really aren't into the culture of implementing this, they are not really getting what they want. Is that fair?

Mr. CARROLL. That's fair, and they're losing the benefit of creative destruction. They're losing the benefit of a small business growing to threaten existing ideas and cultures and alternatives, and that's the big payoff. The big payoff isn't taking what was initially conceived of and spreading it out and leveling the playing field. That's not the way the world works. People innovate best when they have competition.

Mr. TOM DAVIS OF VIRGINIA. Just when you finally get a competitor up there that can go toe-to-toe, you knock them back down?

Mr. CARROLL. That's exactly right, and that's where I think, as the world has changed in who's funding the R&D and where these ideas are coming from, I think the Government's interests, which they want to protect, are in creative competitive environments, not in spreading the information around to everybody. The Government's interest is best served by creating competitive alternatives which fosters innovation, affordability, faster time to markets—all of the things we see that created the explosion in the information technology world that we see out there today.

Mr. TOM DAVIS OF VIRGINIA. But that is just not part of Government's culture. I mean, that is not the way Government really approaches these things.

Mr. CARROLL. That's correct.

Mr. TOM DAVIS OF VIRGINIA. Ms. Lee, let me ask you, any reaction to that?

Ms. LEE. I agree wholeheartedly. If we could change the dynamic to say we really want to bring in the competitors and the new competition, that would make a significant difference. As we're trying to buy more commercial items, we're even finding that there's a commercial item out there and we want to incorporate it into the system, and we're getting this, "No, because we have all this back investment, and once it comes into your system, we lose that intellectual property." So we're trying to figure out how to balance this, how to maximize.

Mr. TOM DAVIS OF VIRGINIA. Mr. Carroll made an art form of the SBIR. I mean, he has been a national leader on this and his company has been good. I think they go through three stages, but then it is like, "Thank you, Little Guy. We appreciate what you've done. We're going to now hand it back to the people who couldn't innovate in the first place." I think that is a concern, and how the contracting officer—I can understand why they would want to go with an established group that may look like they can use it. I mean, I think we understand that, but I don't think until today we have really heard how that is not maximizing the potential the SBIR has. I appreciate your bringing that out. I think it is something we need to come back and try to look at and give appropriate flexibility.

My 5 minutes are up. Let me turn to Mr. Turner.

Mr. TURNER. Thank you, Mr. Chairman.

Following up on the chairman's comments, Ms. Lee, doesn't the other transactions authority give the Department the ability to work through these issues that we are talking about?

Ms. LEE. Yes, sir, the other transactions authority is available. Currently, we have had some change in legislation the last year that also requires cost-sharing, particularly with nontraditional users. Also, we're only allowed to use it for the R&D phase. So if you bring a company in and you say, "Come forth and we'll negotiate this unusual intellectual property right"—and I think Mr. Kuyath highlighted that there are other issues as well, cost accounting, some other issues. We negotiate this unique deal, but we don't have the authority, then, to cross over and go in production. So we say, that was fun working in the R&D part, but the minute you cross over into production we go into a traditional procurement contract, and they have to then be able to assume all the activities that we previously had specifically exempted under other transactions. So we're trying to work out how we can go the whole cycle from that standpoint.

Mr. TURNER. So are you prohibited from going beyond the initial R&D phase——

Ms. LEE. Yes.

Mr. TURNER [continuing]. By current law?

Ms. LEE. Yes.

Mr. TURNER. Are you suggesting that should be changed?

Ms. LEE. We have some requests for change, and we have been working with—previously working with the committee to try to get that language perhaps considered.

Mr. TURNER. Mr. Brock, does that change represent a positive step, the change that Ms. Lee is proposing?

Mr. BROCK. It could be. One of the concerns that we would have is I think in part because of a limited evaluation on how well the other transaction authority has worked within the Department, that if you extend it past prototype into production, you're now assuming a new dynamic where there is opportunity for contract abuse. We would certainly like to see what sort of controls are in place to make sure that there's an appropriate level of oversight over that. I think in the absence of seeing what it would look like beyond just an idea, I'd be reluctant to say at this point that it is something you should pursue.

Mr. TURNER. Mr. Carroll, have you been working on these suggestions that Ms. Lee is talking about?

Mr. CARROLL. In the other transaction authority?

Mr. TURNER. Yes.

Mr. CARROLL. No, I have not really worked in that area. My experience in observing other transaction authority implementations like DARPA did with a ship is that it really is engaging the larger businesses at this point in time. I am not aware of a lot of small businesses that are engaged in other transaction authority.

Mr. TURNER. I notice that there is not a lot of use of the other transactions authority. Is that a problem within the Department, Mr. Brock? Should they be more aggressive in using it?

Mr. BROCK. I think other transactions authority gives the Department a great deal of flexibility. As I mentioned in my longer statement, our concern over the use of that flexibility is the ability of the acquisition work force to appropriately use it and to take advantage of the opportunities it can give you and the flexibility it can give you. This is a longstanding concern that we have had in GAO on acquisition work force and in terms of their capabilities to operate in a rapidly changing environment.

I think several of the witnesses have talked about the difficulties in dealing maybe with the Department and other agencies as well, not so much the laws, rules, and regulations, but how the folks that try to make this work take advantage or don't take advantage of these and keep doing things in the old way. So, as I said—and in our report it was brought out more—that the lack of training, the lack of knowledge, and maybe in some cases a lack of ability, a lack of keeping up with the times is potentially limiting the Department from making effective use of what they already have.

Mr. TURNER. And what is the remedy for that? What kind of training initiative do we have to solve that problem?

Mr. BROCK. Well, the first remedy, the first step in the remedy, I think, has been taken. If I could borrow your book—[laughter]—I should have brought mine. This is a good first step: "Intellectual Property: Navigating through Commercial Waters." We've taken a look at it. I couldn't vouch that it's all legally accurate. We haven't gone down to that level of parsing, but I would say that it's really a good step.

The point is, as you take this, you give it to a contracting official and say, "OK, here it is. Start working with this," I think you're doomed to failure. I think it remains to be seen now as to what sort of training will be provided, what sort of resources will be made available to the Department to provide that training, and what sort of oversight will be given to the contract officers/acquisition officials to make sure that they are taking advantage of the authorities they have. That's a lot of big steps.

Mr. TURNER. Ms. Lee, what is the Department doing to try to take those steps Mr. Brock referred to?

Ms. LEE. Training has been a continuing issue, everything from intellectual property and a lot of other areas, and how do we get people to basically shift in paradigm from the way we used to do things to a new business environment, and trying to consider a host of other things among intellectual property. We're looking at basically totally revamping the current way we train acquisition

professionals. We're looking at the fundamental core courses, adding electives. We have 80 hours of continuous learning. Trying to stand all that up, how do we deliver it electronically to save on the money, travel, etc.? So we're revamping the education program.

Simple as it may sound, we hadn't always done a very good job at linking our initiative to the classroom. We would pop out these initiatives and talk about them for a while, and then we would go look at our classes and find out they weren't there. So we've now changed where we actually have the educators come in while we're doing the policymaking, so they can be prepared when we finally get the initiative out, that it will actually show up in the classroom at the same time. So we're doing those kinds of things.

Mr. TURNER. Thank you. Thank you, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Mrs. Davis?

Mrs. JO ANN DAVIS OF VIRGINIA. Thank you, Mr. Chairman, and thank you, panel, for being here to testify to us today.

Mr. Kuyath, my question is going to be to you. If you could tell us how the Civil False Claim Act works and its effect on commercial companies that are considering contracting with the Government for R&D?

Mr. KUYATH. The Civil False Claim Act, the intent to defraud requirement, all that needs to be proven is gross negligence or willful disregard for the truth. It discourages many commercial companies from doing business with the Government because of the lack of the requirement to prove intent to defraud.

Simple mistakes are sometimes accused of being fraud. There was a recent decision where a contractor had a reasonable interpretation of what the contract said, but the court held that he had committed a violation of the Civil False Claims Act because, even though his interpretation was reasonable, it was wrong under the terms of the contract.

These types of decisions scare commercial companies. Frankly, my general counsel at my company, if he had his way, would not do any business with the Government; he is so afraid of the Civil False Claims Act and the ramifications that could result because of no intent to prove fraud under this law.

Also, the qui tam actions are very frightening because it enables a third party to bring a suit on behalf of the Government, and the Government doesn't even have to believe in the case. Yet, the contractor is going to have to fight this case. In some cases these companies, frankly, settle to eliminate the bad publicity even though they may not believe that there is a case against them. It's a huge club the way the law is written and it does discourage commercial companies from participating in contracting with the Government.

Mrs. JO ANN DAVIS OF VIRGINIA. What can we do to correct that?

Mr. KUYATH. I think you should go back to the way the law was originally promulgated, where the intent standard was much higher. You had to prove intent to defraud, and it was beyond a preponderance of the evidence. I can't remember exactly what the standard was, but it was a strict standard. So it was clear that there was intent to defraud the Government when violating this law. That would go a great way.

There are huge penalties that result from violation of this act, and I think they go way beyond what actions now can constitute

a civil false claim; i.e., no intent to defraud, just reckless disregard or gross negligence.

Mrs. JO ANN DAVIS OF VIRGINIA. Ms. Lee, do you have any comments on that?

Ms. LEE. Civil false claims has been—one of the things that we have been doing through acquisition reform is trying to go to companies and say, "What are the barriers? Explain them to us." We do hear, as we have mentioned here, we hear intellectual property. I would generally say it's always in the top five. Cost accounting standards hits in the top five, and we hear a lot about civil false claims and general oversight and standards for those. They do hit from that standpoint, as perceived barriers to doing business with the Government.

Mrs. JO ANN DAVIS OF VIRGINIA. Mr. Carroll, I think, if I heard your testimony correctly, you're somewhat OK with the approach that DOD has taken in its guide to help you——

Mr. CARROLL. Yes, I think that the guide is a well-written guide, and it begins to take the shift from the perception that all of the rights should be owned by the Government to let's just get what we really need here.

Mrs. JO ANN DAVIS OF VIRGINIA. Are there any other non-intellectual property concerns that are causing commercial companies to refrain from doing business with the Government, in your opinion?

Mr. CARROLL. Non-intellectual property concerns? The marketing cycle for working with the Government is much longer than the marketing cycle in a commercial activity, and I think that discourages a number of people. There are a lot of barriers, procurement barriers, to access.

Another fundamental concept I think could be improved on is the concept of a competition. People think of fairness if you win a competition is what is prescribed by the Competition in Contracting Act, and I think ongoing competitive alternatives is a better fundamental to work off of, as opposed to a competition, where a winner takes all. Because once the competition is over in a winner-takes-all activity, so is competitive pressure to innovate. So I would like to see, as the Government formulates its competitive strategies, training to teach program managers and contracting officers that if they can keep ongoing competitive alternatives in the game, that they'll foster more innovation and affordability and quicker time to market.

Mrs. JO ANN DAVIS OF VIRGINIA. Thank you, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Mrs. Mink?

Mrs. MINK. Thank you, Mr. Chairman. This is an extremely interesting area which creates a massive amount of confusion in terms of what appropriate principles ought to be that we apply to Government contracting.

I would assume that everybody on the panel, notwithstanding their views on existing rules and laws and regulations, still adheres to the principle that, if the Government funds research and development and procurement of a product, that it should have ownership rights with reference to whatever is produced in terms of an intellectual product. Is that a principle that is still a sufficient principle and premise upon which we start this debate? Yes?

Mr. KUYATH. It's just the opposite. The Government only gets a license right. The inventing company gets title. The old scheme, prior to the Bayh-Dole Act, most agencies provided that the Government would get title, and that sounded great because the taxpayer funded this. So maybe the title should go to the Government. Unfortunately, what happened was the inventions, the Government-owned inventions would just sit idle because there was no incentive to commercialize these inventions. Unless a company has an exclusive license or has title to that invention, that invention is not going to get commercialized.

That was one of the key benefits of the Bayh-Dole Act. It reversed that paradigm and put title into the contractor, and as a result, inventions became commercialized to a much higher degree. We saw the universities benefiting by this, by them able to transfer technologies to the commercial sector. They patented many more inventions. So that's the current situation that we exist under today.

It's the same with data rights as well. The Government does not own the data rights. They only get a license, a certain type of license right. The inventing company gets title.

Mrs. MINK. With the evolution, then, to the concept of ownership of only licenses, what is wrong with the Bayh-Dole Act in terms of protecting the rights of the contractors and subcontractors and the university?

Mr. KUYATH. Well, as I mentioned, many companies find the Government purpose license to be fine because their exclusive market is primarily commercial. However, some companies and business units, particularly when you're dealing with the core technologies of the company, they don't want anybody to get any rights in those inventions.

Remember that the rights not only go for Government purposes; there are other rights that attach such as march-in rights and preference for U.S. industry, and all of those rights are strengths that attach that make the company have less control over its intellectual property, where it's going to manufacture the product, who it's going to license the product to, and all those restrictions can at times be a negative.

Mrs. MINK. With those comments, then, Mr. Brock and Ms. Lee, the concern that I have is the suggestion that major changes need to be made to the Bayh-Dole Act. With the comments that were just made, why is the solution not simply going after the exemption which already exists in the other transaction authority? Why is that not a way in which we can enlarge the protections of the commercial interests in their participation in R&D contracts?

Mr. BROCK. Mrs. Mink, we would not recommend at this point big changes in the Bayh-Dole Act. We think some of the administrative procedures, particularly the reporting procedures, need to be simplified so that people can more easily comply. But we think that, based on our reviews, which primarily have been focused on universities, that the Bayh-Dole Act is largely working in that environment.

In commercial environments such as the Department of Defense, where they're trying to develop prototypes, the other transaction authority has given the Department a great deal more flexibility in

dealing with companies who might have had concerns over the provisions in the Bayh-Dole Act.

Mrs. MINK. What can be done to enlarge the applicability of the other transactions authority?

Mr. BROCK. You could do a number of things. One that we have been talking about a lot is making sure that the acquisition work force understands it and how to use it. That could expand its use appropriately. You could also begin to examine, depending on the results of evaluations, about whether you wanted to extend that past prototype development and into production activities, and you could also examine the feasibility, the possibility, of giving other transaction authorities to other agencies as well. Right now it's limited to just a handful of agencies.

Mrs. MINK. I know my 5 minutes are over, but I have one final question to Professor Hill. With reference to university participation in R&D, I assume from your statement that you are generally satisfied with the way in which the Bayh-Dole statute has applied to university-type research?

Mr. HILL. Mrs. Mink, I would say that we'd say that the Bayh-Dole Act is the best thing since sliced bread, yes. I mean, it's a fine piece of legislation. It serves us well and certainly has, I think, served the Nation well, in addition.

Mrs. MINK. Thank you, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Let me continue the questioning. Mr. Kuyath, let me ask you a couple of questions.

I gather from your testimony you believe that the DOD's IP guide is a good first step, but that statutory remedies may be needed in order to bring about real changes in the interest of commercial firms in doing business in R&D. In other words, one of the problems is you can train people all day, but you can train your contracting officers, but by the time it gets down to program managers, you have to do several levels of folks involved with this to make sure this is filtering throughout the system.

The problem with Government is not that they don't have rights to use this. It is just they are not using it correctly. They are taking small innovators and they are spreading it on to larger folks where you have cultural clashes and the like. They are tying it up.

I would hope that the goal would be in procurement that the largest innovators in the world who are filing the most patents, that we could get those people to contract with the Government, so we could be up-to-date and get the latest. I think that would be our goal. I know that flies in the face of some folks who would look at, gee, if the Government funds it, we ought to get it, but you have to look at the market realities. When these companies are refusing to do business with the Federal Government, I think that is a problem. I think we are deprived of a lot of innovation and intellectual power that we ought to be having, so that Government could stay up-to-date. Any reaction to that?

Mr. KUYATH. Well, I agree 100 percent with what you're saying. One possible solution is, when the Bayh-Dole Act was first issued, it applied just to small businesses and nonprofits. Then in 1983 a Presidential statement was issued that extended the policy to large for-profit business concerns. Included within that statement was

the ability, under appropriate circumstances, to permit waiver or omission of any Government right or contractor obligation under the appropriate circumstances.

Mr. TOM DAVIS OF VIRGINIA. You have to ask yourself what Government manager is going to waive those kind of rights. I'm not looking for cover on that one.

Mr. KUYATH. Well, that gave the type of flexibility that perhaps is needed instead of a wholesale amendment of the Bayh-Dole Act. This was something that existed until 1984. In 1984, the Bayh-Dole Act was amended to make two provisions of the act mandatory for large businesses, and that was the Government purpose right and march-in rights. However, everything else, as stated in that Presidential statement, everything else in the Bayh-Dole Act still only applied by policy to large for-profit business concerns and could be waived under the appropriate circumstances. I'm not aware of it ever being exercised. However, if that right was made statutory and freely used in the right circumstances, that might go a long way toward addressing a lot of the concerns of commercial companies, and it would not harm the interests of universities, because we are talking about waiving Government rights and contractor obligations, not get ridding of contractor obligations—or rights rather. So it's just lessening the rights that the inventing entity might have to give up or making it less—putting less burdens on them in the patent process.

By having that flexibility which was in there originally when this law was created, or shortly thereafter, that is something that you might want to consider as a fix. It would not result in a wholesale amendment of the Bayh-Dole Act.

Mr. TOM DAVIS OF VIRGINIA. Let me ask Ms. Lee or Mr. Brock, how often are march-in rights utilized? Are they ever utilized?

Ms. LEE. To the best of my knowledge, we have not used them extensively, if at all.

Mr. TOM DAVIS OF VIRGINIA. I think there is one pending instance I'm aware of.

Mr. FYGI. Mr. Chairman, we have one pending before the Energy Department.

Mr. TOM DAVIS OF VIRGINIA. I saw that in your testimony, and that is pending. That is the only one anybody knows about?

Mr. FYGI. That's the only one, and, anecdotally——

Mr. TOM DAVIS OF VIRGINIA. But the threat of it I think is a concern, is that right?

Mr. KUYATH. Yes, it is. We have had my company back away from a program.

Mr. FYGI. Anecdotally, I'm informed that there may have been a grand total of two since the concept was first created statutorily, which I believe was in 1974 with the Non-Nuclear Act originally. It was then perceived as a means of avoiding potential antitrust policy concerns in federally funded R&D activities. That segment, however, was repealed from the Non-Nuclear Act in 1980 coincident with the adoption initially of the Bayh-Dole Act.

Mr. TOM DAVIS OF VIRGINIA. OK, my time has vanished again. OK, Mr. Turner?

Mr. TURNER. Well, I am not sure that I'm too clear on who recommends statutory change here. From our Government witnesses,

do we have Ms. Lee suggesting perhaps there should be some change? We have Mr. Brock saying he is not ready to endorse any. Has the Department of Energy taken a position?

Mr. FYGI. Our position is as stated in our prepared statement, which does not include any legislative recommendations. Therefore, we're not certain, or I'm not certain, that all of the factors that have been focused on in this hearing that bear on a particular kind of availability to the Government of the commercial technology community—I'm not sure that it necessarily corresponds to the entire spectrum of the Energy Department's various contracting relationships and activities. So we don't have a single legislative remedy to suggest to the subcommittee at this time.

Mr. TURNER. Now, Mr. Carroll, you had several suggestions which would require legislation, as I recall?

Mr. CARROLL. Oh, actually, I only had one suggestion in the legislative area. The rest of the suggestions were relative to the DOD training guide and the committee working with the SBA.

But one thing I wonder about, which might be an effective legislative change, is to make it clear what is in the best interest of the Government when negotiating intellectual property. Because I do feel like that can be a very confusing thing. By human nature, the people paying for it take ownership; they want to take ownership.

I don't know whether this is a good analogy or not, but it comes to mind: It's kind of like raising your children. You know, you invest an awful lot in them during the early years, and in the end you have to let go and see what good they do out there in our country. Intellectual property rights are a similar thing for the Federal Government in many ways. Notwithstanding the fact that they have to have rights to be able to protect any products that they may be using in the Department of Defense or other places, letting go in many cases is the best answer, and letting those intellectual property rights work their will in our country. Because we've seen in the commercial world they work their will very well. We've seen dramatic shifts and dramatic changes which have added to the productivity.

Chairman Greenspan talks about the increase in our productivity as a result of technological innovation. That would not occur if that intellectual property was not owned by those people—ownership meaning the general sense of ownership where they have the protections necessary to invest the money to create the productivity enhancements.

Mr. TURNER. Thank you, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. Mrs. Davis?

Mrs. JO ANN DAVIS OF VIRGINIA. Thank you, Mr. Chairman.

Mr. Carroll, I'm a mom; it's tough to let go. [Laughter.]

Ms. Lee, in Dr. Hill's testimony he talked about the matching fund requirement with regards to the university obtaining R&D contracts. Do you have any comments on that?

Ms. LEE. We currently have two types of other transactions: 845's and 2371's. Right now both have some fund-matching required. So that is absolutely what we require in those transactions.

Mrs. JO ANN DAVIS OF VIRGINIA. How would you feel about universities not having to have matching funds? They have a wealth of information. I know I have been at William and Mary touring

around and listening to some of the things that they have going in order to help the Department of Defense, but I also know that it is tough to get the matching funds as a university. Not many people, you're right, donate for that purpose. How would you feel at DOD about having something like that with the universities not having to have that requirement?

Ms. LEE. We will certainly work with any legislation or guidance that we are given. Currently, we are following what the current requirements are. So any changes we would step up and address those as well.

Mrs. JO ANN DAVIS OF VIRGINIA. Well, then, I would go to the commercial sector. How would you all feel about the universities not having to have matching funds?

Mr. KUYATH. Would you repeat the question, please? [Laughter.]

Mrs. JO ANN DAVIS OF VIRGINIA. How would you all feel if it were not a requirement for the university to have matching funds?

Mr. KUYATH. Well, I guess I could understand it because they don't necessarily have the resources to cost-share, but you have to remember a lot of commercial companies don't have those resources either.

Mrs. JO ANN DAVIS OF VIRGINIA. I was curious as to the small business sector?

Mr. CARROLL. Well, I would think many, many small businesses would have a very difficult time with the cost-share provisions. I wonder whether the cost-share provisions really are effective at creating innovation.

Earlier Chairman Davis mentioned that he wants to invest the money in the marketplace that provides the innovation. With only 5 percent, a little under 5 percent, of the R&D funds the Federal Government spends, small high-technology businesses under the size of 500 people generate 38 percent of the patents associated with that 5 percent, and they're not able to cost-share in general. So we would like certainly to see that segment not required to cost-share as well.

Mrs. JO ANN DAVIS OF VIRGINIA. And a level playing field, I would assume. Yes, Dr. Hill?

Mr. HILL. Ms. Davis, if I might comment, we encounter cost-sharing in all sorts of arrangements that are not just in the category of so-called other transactions authority, but rather in routine contracts, cooperative agreements, and, for that matter, in grant programs. So it's not as though it's a rare thing that arises in some exotic transactions. It's all over the place, and it's growing rapidly.

Our sense—when I say "our," I'm referring, I think, to a general consensus in the academic world—is that the cost-sharing requirements increasingly are being used by program managers whose budgets are squeezed. One way to multiple what you can do with a reduced or inadequate budget, or what you view as an adequate budget, is to try to get someone else to pay for part of the cost. The only person standing around who might conceivably want to pay the cost is the contractor.

Let me say further, in certain cases where we have a clear benefit that is long-lasting for our institution from participating in a Government program, we don't object to cost-sharing. For example, if in a research program we're going to be able to buy a large, per-

manent piece of capital equipment that will have a lifetime well beyond the Government project, we're pleased to be asked to share the cost on that. Or, if it's contributing to the education of our students, that's our main business. We get State money; we get private money for that, and we think it's appropriate, directly or indirectly, to cost-share.

But when the outcome is a piece of technology or a new set of ideas or data that the Government only is going to use, we can't build a business on it. My colleagues to the right conceivably can. We can't and we don't, and we have no reason to want to put up on our own money in the hopes, as I think, if I'm not being too cynical, at least in the prime contractor/large firm world it often makes sense to take a loss on the R&D contract to cost-share because waiting in the wings is a multi-billion dollar, multi-year construction or procurement contract that's much more important than the R&D, and it makes it worthwhile to cost-share the R&D. We don't enjoy that downstream benefit.

So, if I may put it bluntly, we basically have to tax the parents who are working two jobs to put their kids through school to raise the money to cost-share on Government contracts. It just doesn't quite seem right.

Mrs. JO ANN DAVIS OF VIRGINIA. Thank you.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much.

Mr. Brock, let me just ask a question. Would GAO be willing to study and report to this subcommittee about barriers to obtaining R&D, including IP? Is that your pay grade level?

Mr. BROCK. There's only one way I can answer that, Mr. Chairman. [Laughter.]

Of course we would.

Mr. TOM DAVIS OF VIRGINIA. Thank you very much. Thank you.

Ms. Lee, let me ask you, on this guide that's been provided, proclaimed here today as a great improvement, do you think your guide will become part of the continuing education requirements of the acquisition work force? And are there any policy changes being made as a result of the guide?

Ms. LEE. Yes, sir, it certainly will, and more to come. We've got to figure out how to get this into the education process earlier, and as you so eloquently said, and the program managers; it can't just be the contracting folks.

Mr. TOM DAVIS OF VIRGINIA. Yes, training is the toughest part of this business, as you know. You can preach it and then keeping your people. Well, that's good. I think that is going to be helpful.

Mr. Carroll, could you elaborate on the problem you mentioned in your testimony regarding the SBA's SBIR policy directive?

Mr. CARROLL. Yes. The small businesses in the SBIR Program go through three phases: phase one, two, and three. Phase one and two are part of the program where moneys are set aside from acquisition programs, from what's called extramural R&D, to go into the initial stages of research and development. That is a pretty clear and very successful activity throughout the Department of Defense and other agencies.

The third phase of the SBIR Program is where small businesses commercialize what they've done in the first two phases with either Federal R&D continuation of the activity or with just commercially

with venture capitalists or other sources of money. What I'm commenting on is, when they choose to do that with Federal R&D funds, by legislation they continue to get the protection of data rights under that situation. Those data rights continue to accumulate over time, strengthening the position of this competitive alternative that is being built up. At any time that can be diluted significantly by taking that intellectual property and spreading it around and leveling the playing field.

So, as the benefit is being accumulated of a competitive alternative with new ideas entering the marketplace, at any time it can be significantly or essentially completely diluted by spreading its intellectual property around. So in the law, the SBIR Reauthorization Act, it was made clear that that was not the intent of Congress.

It still is, though, in the agencies a human nature to want, as that becomes valuable to other people, to start spreading it around. They feel like they can get to market quicker with it. I mean, it's not people doing bad things. It's people trying to take this creative activity and spread it around, get it to good markets, but it's shortsightedness.

Mr. TOM DAVIS OF VIRGINIA. Government inherently doesn't understand markets as well, though, do they?

Mr. CARROLL. That's right.

Mr. TOM DAVIS OF VIRGINIA. Isn't that one of the problems, that they just look at the world differently?

Mr. CARROLL. That's right. They're trying to do the best they can at the moment with what they consider to be a good product, an innovation, but the result is that they dilute its ability to really grow and threaten.

Take Microsoft as an example. Suppose after the first 3 years of introducing DOS, DOS was given away; the intellectual property rights of DOS were given away. Well, it wouldn't have turned out to be the paradigm shifter that it turned out to be.

Take AOL. After 3 years of being out there in the market, suppose everybody could have AOL software and use it anywhere they wanted to use it. Well, AOL wouldn't have changed the way that we think of the world today either.

If we're going to change the way that organizations like DOD think about how things are done, we have to allow for intellectual property to protect and accumulate over time, to build strong, powerful competitors. I can't think of a single DOD large company that can attribute its initial formation or its growth to the protection of intellectual property. They're there because they acquired themselves into those positions. They didn't grow like Microsoft and AOL and Netscape and Compaq and all of these information technology companies that have grown through the protection of their intellectual property.

What I'm putting forth is we should work to enable that to occur in Government. We should have the ability to have information protection to strengthen the growth of competitive alternatives. That's essentially the foundation, and I think the SBIR Program is trying to do that. I think the SBA can help it.

Mr. TOM DAVIS OF VIRGINIA. But inherent in that is the fact that maybe Government doesn't use the information, the licensing, whatever they have, as well as they could?

Mr. CARROLL. Oh, no, they don't, and it's not——

Mr. TOM DAVIS OF VIRGINIA. That they have a right to it, we don't disagree with that, but they're just not utilizing it the way—please, Mr. Kuyath.

Mr. KUYATH. Could I add to that?

Mr. TOM DAVIS OF VIRGINIA. Sure.

Mr. KUYATH. Cost-sharing can be a real negative even for a large, successful commercial company. If the Government wants a company to perform a long-term, high-risk research program where the payoff may be 5 or 10 years down the road, and the payoff is very risky, the market may never develop—for example, to develop a battery to power an electric car, that may never happen. Cost-sharing can be a real negative because the company has limited resources for its researchers. It only has so many scientists. It may want to devote its resources to a project that's going to have a much higher payoff. If the Government's willing to pay the full rate and take the higher risk, a commercial company may be more willing to take that risk, but those types of things have to be taken in mind. There aren't any automatic litmus tests that apply here as to cost-sharing. You have to take that into account.

Mr. TOM DAVIS OF VIRGINIA. I understand all that and I don't disagree with it, but you're asking from your Government procurement officials just an awful lot of insight and tea reading to know where——

Mr. KUYATH. Right, but now their hands are tied. For example, prototype, other transactions——

Mr. TOM DAVIS OF VIRGINIA. That's right. They don't even have to——

Mr. KUYATH. They have to cost-share unless a nontraditional defense contractor is involved to a significant degree. Unfortunately, the way the law is written, for example, 3M and several other commercial companies are considered to be a traditional defense contractor because we have one R&D contract over $500,000 out of our billion dollar research internal budget. We are considered to be a traditional defense contractor and we'll have to cost-share, if we would ever accept a section 845 other transaction. I don't think that's what Congress intended, but that's the way the law is written. I know there are many other commercial companies in the same boat as 3M.

Mr. TOM DAVIS OF VIRGINIA. Well, we will work with you to look at some language and work with Ms. Lee and some others to try to get some language that can make this situation better.

Any questions, Mr. Turner?

Mr. TURNER. No questions, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. Any questions, Mrs. Davis?

Mrs. JO ANN DAVIS OF VIRGINIA. No, Mr. Chairman.

Mr. TOM DAVIS OF VIRGINIA. Well, let me just say, before we close this hearing, I just want to take a moment to thank everybody for attending today. I want to thank all the witnesses, Congressman Turner, Mrs. Davis, and the other Members for participating. I also want to thank my staff for organizing this hearing.

I think it has been very productive; it has been for me in terms of understanding this a lot better than I did last night before I started reading the testimony.

Anybody want to add anything before we stop?

Ms. LEE. Sir, as you know, from a procurement professional standpoint, we all talk about other transactions. I'm constantly asking myself, why do we need to create these extra contractual activities and how can we learn from the benefits of other transactions and bring that back into the majority of our transactions which are procurement contracts? So I'm always looking to how do we learn that, and then how do we bring those good flexibilities or changes, or whatever, into the mainstream contracting as well?

Mr. TOM DAVIS OF VIRGINIA. OK, thank you.

Let me enter into the record now the briefing memo distributed to subcommittee members.

We will hold the record open for 2 weeks from this date for anybody who wants to forward submissions for possible inclusion.

Thank you again. These proceedings are closed.

[Whereupon, at 11:40 a.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[The prepared statements of Hon. Thomas M. Davis and Hon. Jim Turner follow:]

OPENING STATEMENT OF CHAIRMAN TOM DAVIS
SUBCOMMITTEE ON TECHNOLOGY
AND PROCUREMENT POLICY
OVERSIGHT HEARING

"Toward Greater Public-Private Collaboration in Research & Development: How the Treatment of Intellectual Property Rights is Minimizing Innovation in the Federal Government"

July 17, 2001

Room 2154 Rayburn House Office Building

Good morning. I'd like to welcome everyone to today's oversight hearing about intellectual property and government funded research and development (R&D). R&D collaboration between the government, commercial companies, and universities is widespread. Such collaborative R&D projects have a long history in the U.S., with major initiatives in pharmaceuticals, petrochemicals, synthetic rubbers, and atomic weapons being launched during World War II. Similarly, university-industry research collaboration was well established in the U.S. economy of the 1920's and 1930's and contributed to the transformation of the U.S. chemicals industry. There is no doubt that public-private collaboration makes an important contribution to the technical and economic well being of U.S. citizens. Indeed, statistics show a substantial correlation between research, innovation, and U.S. economic prosperity.

Throughout the Cold-War years, the Government in general and agencies such as the Pentagon and the Department of Energy drove R&D. However, the *Wall Street Journal* has reported that the private sector's share of total R&D spending in recent years is soaring, while the share of the Government is declining. In 1960, for example, private sector R&D spending amounted to roughly one-third of the country's total. In 1999, private sector R&D was two-thirds of the total. Over the same period, the military's share dropped from 53% to 16%. The *Journal* also notes that three-fourths of the country's top 75 information technology companies will not do research for the

Government, citing both difficulty in contracting with the Government and the treatment of intellectual property in R&D contracts. Thus, at the same time that Government is no longer driving technological innovation, many commercial firms that invest billions in R&D every year are refusing to do business with the Government. This has serious implications for the well being of the United States.

Intellectual property rights are the most valued assets of leading-edge technology companies. The Government is challenged today to find ways to entice commercial industry into collaborating with it on vital R&D efforts. While acquisition legislation in the 1990's, such as the Federal Acquisition and Streamlining Act and the Clinger-Cohen Act, greatly improved the contracting process, many companies still refuse to undertake R&D projects because of concern over how intellectual property rights will be treated. The Department of Defense, in its recently issued guide for the acquisition community titled "Intellectual Property: Navigating Through Commercial Waters" has recognized the priority of improving the treatment of intellectual property rights as a precursor to ensuring its access to the very best technologies.

Today's hearing will address one of several barriers to acquisitions and sourcing by the Government: the treatment of intellectual property in R&D funded by the Government. The goals of this hearing are to gather information about the nature and scope of intellectual property law and regulation as it relates to government funded R&D. Going past the legal framework, this hearing also will investigate the actual practice of the Government in R&D contracts with both commercial industry and universities.

How the Government treats intellectual property has a profound impact on the competitive environment for R&D. It is axiomatic that competition increases innovation in an effort to offer more attractive options to the consumer at lower prices. Yet many innovative companies find themselves in a difficult position trying to negotiate with a government that believes it must have all available intellectual property rights rather than only those rights that are needed. The paradigm has changed—government is no longer the leader in innovation; now it must respond to its new role as partner in innovation by adopting policies for the treatment of intellectual property that are consistent with commercial practice.

Efforts at addressing the difficulty that the Government has had in attracting innovation in its R&D will be looked at, including existing mechanisms for flexible contracting and whether there is a need for training of the acquisition workforce on intellectual property issues. Finally, reform efforts currently underway in agencies and proposals for regulatory and legislative change will be examined.

Intellectual property rights are the lifeblood of commercial firms and are vitally important to universities. Working to improve the Government's treatment of intellectual property rights must be a priority in order to ensure the ability to access the very best technologies for our future civilian and military needs. I look forward to the testimony of the witnesses today and thank you for your participation in this important hearing.

Statement of the Honorable Jim Turner
Oversight Hearing: "Toward Greater Public-Private Collaboration in Research & Development: How the Treatment of Intellectual Property Rights Is Minimizing Innovation in the Federal Government"
Subcommittee on Technology and Procurement Policy

July 17, 2001

Thank you Mr. Chairman. Today's hearing will explore the nexus between intellectual property and procurement. We will hopefully learn whether current intellectual property laws and practices, including those governing patents, trademarks, copyrights, and trade secrets, prevent the federal government from gaining access to the best and most up-to-date technological advances. And if they do, what solutions might be available to allow for more flexible contracting in this area.

Most of the federal government's laws and regulations governing access to intellectual property date from the 1980's or earlier. Yet the research and development world has changed dramatically since that time. In the 1980s the federal government funded over 50% of all R&D conducted in America. Today, by some accounts, that figure has dropped below 20%. During the same period, the share of R&D funded by the commercial sector has doubled from one-third to two-thirds. While the trend is clearly toward private-sector R&D funding, it is important to remember that, by most estimates, the federal government still spends close to $80 billion on research and development.

Clearly however, with more and more innovation being driven by the private sector, especially in the information technology arena, it may be prudent for the federal government to explore more flexibility in contracting in this area.

The use of so-called "other transactions" at DOD, and its recently issued guide on intellectual property seem to address just this concern. I believe, however, the we must be cautious as we approach this somewhat complicated issue. Current law and regulation was designed to strike a delicate balance between the needs and rights of the government, as the representative of the public, and those of private industry. We need to keep these sometimes conflicting priorities in perspective as we examine these issues.

I look forward with interest to the testimony of our witnesses. Thank you Mr. Chairman.

○