LEGISLATION AND POLICY

Since 1980, Congress has enacted a series of laws to promote technology transfer and to provide technology transfer mechanisms and incentives. The intent of these laws and related Executive Orders is to encourage the pooling of resources when developing commercial technologies. The bidirectional sharing between federal laboratories and private industry includes technologies, but personnel, facilities, methods, expertise, and technical information in general. Highlights of major technology transfer legislation are discussed on the following pages. An overview of the major legislative themes is also provided. Although federal technology transfer policy is established by legislation and executive orders, each federal department and agency develops the specific, detailed policies and procedures that guide how technology transfer works within its organization.

TECHNOLOGY INNOVATION LEGISLATION HIGHLIGHTS

The Green Book – Federal Technology Transfer Legislation and Policy. *Commonly known as "The Green Book," this Federal Laboratory Consortium (FLC) publication contains the current sections of the U.S. Code related to technology transfer.* **http://www.federallabs.org/pdf/FLC_Legislation_and_Policy.pdf**

Stevenson-Wydler Technology Innovation Act of 1980 (P.L. 96-480)

The Stevenson-Wydler Act of 1980 is the first of a continuing series of laws to define and promote technology transfer. It made it easier for federal laboratories to transfer technology to nonfederal parties and provided outside organizations with a means to access federal laboratory developments.

The primary focus of the Stevenson-Wydler Act concerned the dissemination of information from the federal government and getting federal laboratories more involved in the technology transfer process. The law requires laboratories to take an active role in technical cooperation and to set apart a percentage of the laboratory budget specifically for technology transfer activities. The law also established an Office of Research and Technology Applications (ORTA) in each laboratory to coordinate and promote technology transfer.

Bayh-Dole Act of 1980 (P.L. 96-517)

The Bayh-Dole Act of 1980, together with the Patent and Trademark Clarification Act of 1984 (P.L. 98-620), established more boundaries regarding patents and licenses for federally funded research and development. Small businesses, Government, and not-for-profit organizations were allowed to obtain title to inventions developed with federal funds. Government owned and government operated (GOGO) laboratories were permitted to grant exclusive patent licenses to commercial organizations.

Small Business Innovation Development Act of 1982 (P.L. 97-219)

The Small Business Innovation Development Act of 1982 established the Small Business Innovation Research (SBIR) program, requiring agencies to provide special funds for small business R&D connected to the agencies' missions.

Federal Technology Transfer Act of 1986 (P.L. 99-502)

The Federal Technology Transfer Act of 1986 was the second major piece of legislation to focus directly on technology transfer. All federal laboratory scientists and engineers are required to consider technology transfer an individual responsibility, and technology transfer activities are to be considered in employee performance evaluations. This 1986 law also established a charter and funding mechanism for the previously existing Federal Laboratory Consortium for Technology Transfer (FLC).

In addition, the law enabled GOGO laboratories to enter into Cooperative Research and Development Agreements (CRADAs) and to negotiate licensing arrangements for patented inventions made at the laboratories. It also required that government employed inventor's share in royalties from patent licenses. Further, the law provided for the exchange of personnel, services, and equipment among the laboratories and nonfederal partners. Other specific requirements, incentives and authorities were added, including the ability of GOGO laboratories to grant or waive rights to laboratory inventions and intellectual property, and permission for current and former federal employees to participate in commercial development, to the extent that there is no conflict of interest.

Executive Order 12591 (1987)

Executive Order 12591, Facilitating Access to Science and Technology (1987), was written to ensure that federal laboratories and agencies assist Government and the private sector by transferring technical knowledge. The order required agency and laboratory heads to identify and encourage individuals who would act as conduits of information among federal laboratories, Government, and the private sector. It also underscored the government's commitment to technology transfer and urged GOGOs to enter into cooperative agreements to the limits permitted by law. The order also promoted commercialization of federally funded inventions by requiring that, to the extent permitted by law, laboratories grant to contractors the title to patents developed in whole or in part with federal funds, as long as the government is given a royalty-free license for use.

Omnibus Trade and Competitiveness Act of 1988 (P.L. 100-418)

The Omnibus Trade and Competitiveness Act of 1988 emphasized the need for public/private cooperation in realizing the benefits of R&D, established centers for transferring manufacturing technology, established Industrial Extension Services and an information clearinghouse on state and local technology programs, and extended royalty payment requirements to non-government employees of federal laboratories. It also changed the name of the National Bureau of Standards to the National Institute of Standards and Technology (NIST) and broadened its technology transfer role, including making NIST the FLC's host agency.

National Competitiveness Technology Transfer Act of 1989 (P.L. 101-189)

The National Competitiveness Technology Transfer Act of 1989 provided additional guidelines and coverage for the use of CRADAs, extending to government owned and contractor operated (GOCO) laboratories essentially the same ability to enter into CRADAs that previously had been granted to GOGO laboratories by the Federal Technology Transfer Act of 1986. To protect the commercial nature of the agreements, the Act allowed information and innovations that were created through a CRADA, or brought into a CRADA, to be protected from disclosure to third parties. The Act also provided a technology transfer mission for the Department of Energy's (DOE) nuclear weapons laboratories.

American Technology Preeminence Act of 1991 (P.L. 102-245)

The American Technology Preeminence Act of 1991 contained several provisions covering the FLC and the use of CRADAs. The mandate for the FLC was extended to 1996, the requirement that the FLC conduct a grant program was removed, and a requirement for an independent annual audit was added. With respect to CRADAs, the Act included intellectual property as potential contributions under CRADAs. The exchanging of intellectual property among the parties to an agreement was allowed, and the Secretary of Commerce was asked to report on the advisability of creating a new type of CRADA that would allow federal laboratories to contribute funds to the effort covered by the agreement (which is not permitted at present). It also allowed laboratory directors to give excess equipment to educational institutions and nonprofit organizations as a gift.

Small Business Research and Development Enhancement Act of 1992 (P.L. 102-564)

This Act extended the SBIR program to the year 2000, increased the percentage of an agency's budget to be devoted to SBIR and similar programs, and increased the amounts of the awards. The Act also established the Small Business Technology Transfer (STTR) program. (The STTR program is similar to the SBIR program.)

National Department of Defense Authorization Act for 1994 (P.L. 103-160)

This Act broadened the definition of a laboratory to include weapons production facilities at the DOE.

National Technology Transfer and Advancement Act of 1995 (P.L. 104-113)

This law amended the Stevenson-Wydler Act to make CRADAs more attractive to both federal laboratories and scientists and to private industry. The law provides assurances to U.S. companies that they will be granted sufficient intellectual property rights to justify prompt commercialization of inventions arising from a CRADA with a federal laboratory, and gives the collaborating party in a CRADA the right to choose an exclusive or nonexclusive license for a pre-negotiated field of use for an invention resulting from joint research under a CRADA. The

CRADA partner may also retain title to an invention made solely by its employees in exchange for granting the government a worldwide license to use the invention. The law also revised the financial rewards for federal scientists who develop marketable technology under a CRADA—increasing the annual limit of payment of royalties to laboratories from $100,000 per person to $150,000. In addition, the Act permanently provided the FLC with funding from the agencies.

Technology Transfer Commercialization Act of 2000 (P.L. 106-404)

This Act recognizes the success of CRADAs for federal technology transfer and broadens the CRADA licensing authority to include preexisting government inventions to make CRADAs more attractive to private industry and increase the transfer of federal technology. The Act permits federal laboratories to grant a license for a federally owned invention that was created prior to the signing of a CRADA. In addition, the Act requires an agency to provide a 15-day public notice before granting an exclusive or partially exclusive license, and requires licensees to provide a plan for development and/or marketing of the invention and to make a commitment to achieve a practical application of the invention within a reasonable period of time; however, the Act exempts from these requirements the licensing of any inventions made under a CRADA.

OTHER LEGISLATION

Other laws that are part of the technology transfer effort, although perhaps not quite as directly as the previously discussed legislation, include:

• The Cooperative Research Act of 1984 (P.L. 98-462) established several R&D consortia (e.g., Semiconductor Research Corporation and Microelectronics and Computer Technology Corporation) and eliminated some of the antitrust concerns of companies wishing to pool R&D resources.

• The Trademark Clarification Act of 1984 (P.L. 98-620) permitted patent license decisions to be made at the laboratory level in GOCO laboratories, and permitted contractors to receive patent royalties to support the R&D effort. Private companies were also permitted to obtain exclusive licenses.

• The Japanese Technical Literature Act of 1986 (P.L. 99-382) improved the availability of Japanese science and engineering literature in the U.S.

• The National Institute of Standards and Technology Authorization Act for FY 1989 (P.L. 100-519) permitted contractual consideration for intellectual property rights other than patents in CRADAs, and included software developers as eligible for technology transfer awards.

• The Defense Authorization Act for FY 1991 (P.L. 101-510) established model programs for national defense laboratories to demonstrate successful relationships between the federal government, state and local governments, and small businesses and permitted those laboratories to enter into a contract or a Memorandum of Understanding with an intermediary to perform services related to cooperative or joint activities with small businesses.

• The National Defense Authorization Act for FY 1993 (P.L. 102-484) extended the potential for CRADAs to some Department of Defense-funded Federally Funded Research and Development Centers (FFRDCs) not owned by the government.

United States Code

All of the legislation included in “The Green Book” is embodied in the United States Code (USC), which provides a single source uniting the provisions of each law. The primary section of the USC covering technology transfer is Title 15 (Commerce and Trade), Chapter 63 (Technology Innovation). Relevant portions of other titles of the USC that deal with major technology transfer issues and are provided in this book include Title 35 (Patents) and Title 42 (The Public Health and Welfare) Section 7261 (Acquisition of Copyrights, Patents, Etc.).

15 USC 3701 through 3704 cover the findings of Congress, the purpose of the legislation, definitions, and the establishment of various offices to carry out the intent of the legislation. 15 USC 3705 through 3708 provide for the establishment of Cooperative Research Centers, grants and cooperative agreements. Affiliated with Government or nonprofit institutions, Cooperative Research Centers engage in research that supports technological innovation and provide assistance and training to individuals and small businesses. The centers must also use the expertise of federal laboratories, where appropriate.

15 USC 3710 through 3710d cover the establishment of Offices of Research and Technology Applications (ORTAs); the FLC; CRADAs; cash awards for inventions, innovations, computer software, or other outstanding contributions; and the sharing of royalties or licensing fees with laboratory inventors.
The Green Book also includes special legislative provisions applicable to one or several federal agencies and technology innovation legislation with special provisions that are possibly unique to one federal agency. In addition, the book contains Executive Order 12591, Facilitating Access to Science and Technology, an appendix with links to some web sites related to technology transfer, and a comprehensive user-friendly index.