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# SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM REAUTHORIZATION ACT OF 2001

AUGUST 28, 2001.—Ordered to be printed

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Mr. KERRY, from the Committee on Small Business and Entrepreneurship, submitted the following

# REPORT

[To accompany S. 856]

On July 19, 2001, the Committee on Small Business and Entrepreneurship (Committee) considered S. 856, the Small Business Technology Transfer (STTR) Program Reauthorization Act of 2001. The bill amends the Small Business Act to extend authorization of the STTR Program for nine years and to make other changes. Having considered S. 856, the Committee reports favorably thereon and recommends that the bill pass.

## I. NEED FOR LEGISLATION

Absent legislative action to reauthorize the Small Business Technology Transfer (STTR) program, it will expire on September 30, 2001. This legislation is also necessary because it makes changes to the STTR program in order to facilitate more effectively the collaboration between small businesses and research institutions and thereby transfer more technology from lab into deployed products or processes and create small businesses around our research institutions.

## II. LEGISLATIVE HISTORY

The STTR program funds cooperative research and development (R&D) projects between small companies and research institutions as an incentive to advance the nation's technological progress and the government's research and development goals. It complements the Small Business Innovation Research (SBIR) program, which

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was reauthorized last year. Whereas the SBIR program funds R&D projects at small companies, STTR funds cooperative R&D projects between a small company and a research institution, such as a university or a Federally funded R&D lab. Like SBIR R&D projects, STTR projects help participating agencies achieve their missions in the research and development arena. It was also designed to convert the billions of dollars invested in research and development at our nation's universities, Federal laboratories and non-profit research institutions into new commercial technologies.

The STTR program was started as a pilot in 1992, and the first grants were made in 1994. The program was reauthorized in 1997. The program is not funded out of the Small Business Administration's (SBA) budget, but out of the extramural R&D budgets of Federal agencies or departments with extramural R&D budgets of $1 billion or more. Such agencies must award at least .15 percent of that money for STTR projects. Five agencies currently qualify: the Department of Defense (DoD); the National Institutes of Health (NIH); the National Aeronautics and Space Administration (NASA); the National Science Foundation (NSF); and the Department of Energy (DoE).

There are three phases of the program. Phase I is a one-year grant for $100,000, and its purpose is to determine the scientific and commercial merits of an idea. Phase II is a two-year grant for $500,000, and its purpose is to further develop the idea. Phase III is used to pursue commercial applications of the idea and cannot be funded with STTR funds. Only private-sector and non-STTR Federal funds may be used in Phase III.

This bill to reauthorize the STTR program is the result of a Committee hearing, Committee research, and a survey by the U.S. General Accounting Office (GAO).

On June 21, 2001, the Committee on Small Business and Entrepreneurship held a hearing entitled "S. 856, the Small Business Technology Transfer Program Reauthorization Act of 2001." The purpose was to gather information about how the program has been working since it was last reauthorized in 1997 and to get feedback on S. 856. The witnesses included: Dr. Anthony N. Pirri, Director of the Division of Technology Transfer at Northeastern University in Boston, Mass.; Mr. Clifford C. Hoyt, Vice President and Chief Technology Officer of Cambridge Research and Instrumentation in Woburn, Mass.; Dr. Barna Szábo, Founder and Chairman of Engineering Software Research and Development Inc. in St. Louis, Mo.; Mr. Kirk Ririe, President and CEO of Idaho Technology Inc. in Salt Lake City, Utah; Mr. Maurice Swinton, Assistant Administrator for the Office of Technology at the Small Business Administration; and Mr. Jim Wells, Director of Natural Resources and Environment at the General Accounting Office.

There was consensus that the program is meeting its objectives, should be continued, and that the Phase II award amount should be increased. Examples were given of technological advances that improved industries, grew businesses, created jobs and more than returned the Federal government's investment. One comment, in particular, from Mr. Kirk Ririe of Idaho Technology Inc., which got its modest start in a potato shed and now has locations in Idaho and Utah, demonstrates the power of the STTR program:

> We were a tiny company—six people working with the university group. We were able to, within two years, launch (with about $100,000 in funding) a product that basically filled a hole in biotechnology research and development * * * that has gone on to generate over $100 million in sales. * * * The GAO figures may not [reflect this, but] I guarantee that we have paid a lot more money back to the government in taxes than we received in any of the funding. * * * The program has been absolutely crucial to us. If we had not had this program, we would still be in the potato shed. * * *

In addition to the hearing, as referenced earlier, the Committee reviewed a survey by the GAO of the participating STTR companies. The survey was requested by the Chairmen and Ranking Members of this Committee and the House Committee on Science in anticipation of reauthorization. The purpose was to survey the participating companies to identify the contributions to and results of the STTR program.

GAO surveyed all companies that had received Phase II awards from 1995 to 1997. They chose these years because they were the first years of the program and it takes generally three to nine years for a company to progress from basic research of a concept to commercialization of a developed product. Though this program is still relatively young, the survey results indicate it is working effectively. Of the 102 companies participating in the survey, 53.5 percent had either commercialized the technology or received follow-on funding for the technology. These companies had approximately $132 million in sales and $53 million in additional funding. These STTR winners expect additional sales of more than $900 million dollars by 2005. Putting this into perspective, the Government's total awards to these companies was less than $60 million, or less than half of the sales to date and about five percent of the expected sales by 2005.

Also of note, the survey revealed that the respondents strongly support continuing the program, and a majority said they want the STTR and SBIR programs to remain separate. The Committee strongly agrees with the findings. GAO noted that one area of improvement would be to involve more universities.

## III. SUMMARY OF MAJOR PROVISIONS

The Committee has concluded from its proceedings and its review of the GAO survey that the STTR program is meeting its program objectives successfully and merits reauthorization for an additional nine years.

The Committee also believes the program should be expanded. This is a very good investment for our nation. According to the SBA's Office of Advocacy, small firms that collaborate with universities often have a better rate of return on their R&D investments than they would otherwise have.[1]

To date, more than $347 million has been awarded to 1,500 small businesses and more than 250 university partners. From the GAO survey, the Committee knows that these collaborations are already

[1] "A New View of Government, University and Industry Partnerships," the Office of Advocacy, U.S. Small Business Administration, January 1999.

showing outstanding commercialization rates, and it should build on this successful program. Consequently, this bill raises in small increments the percentage that departments and agencies set aside for STTR research and development awards. In FY2004, the percentage increases from .15 to .3 percent. In FY2007, the percentage increases from .3 to .5 percent. Over the past three years, the .15 percent has amounted to a total of $65 million annually available for STTR awards. Based on that amount, increasing the percentage to .5 percent would make $216 million available annually for small business technology transfer.

The Committee recognizes that the research and development budgets have been reduced at most agencies. However, given that the small business share of Federal research and development funds is less than four percent annually and has been static for [more than] 20 years,[2] the Committee believes the increase is justified. Even after both authorized increases are effective, the percentage will be only one half of one percent. Further, the percentages are phased in slowly over seven years, giving the agencies ample time to prepare for the increases. Also, the agencies continue to have complete autonomy to solicit proposals for research that in turn will help them achieve their missions.

The Committee also proposes raising the Phase II grant award amount from $500,000 to $750,000. This change was intended to address concerns by both the small businesses and the research institutions that $500,000 typically is no longer enough for this stage of research and development. As Dr. Pirri of Northeastern said at the hearing, "By expanding the STTR program, funding levels will become more adequate to take technologies through the prototype stage and increase their probability of commercial success." Raising Phase II STTR awards to $750,000 makes them consistent with the Small Business Innovation Research (SBIR) program's Phase II awards. The main concern about raising the award amount is how it would impact the overall pool of money available for STTR awards. To address that concern, the legislation does not increase the award until FY2004, at which time the percentage increases and there is more money available for larger awards.

To increase the percentage of research institutions that originate the key idea and initiate the collaboration, S. 856 includes a provision encouraging the STTR agencies to reach out to universities to raise awareness of the program and to provide information to faculty members about taking advantage of this technology transfer program. According to the GAO survey, small businesses reported that 75 percent of the time they originated the key idea for the research and development that led to the STTR award, not research institutions. While the Committee acknowledges that research institutions were not asked that question and the results are not conclusive, universities themselves reported in other Committee research that there is a need for STTR awards to develop the research of their scientists and engineers but that they need to be made aware of and educated about the STTR program. GAO reported that only about 250 universities have participated in the program so far. The Committee believes, and GAO concurs, that

[2] "A New View of Government, University and Industry Partnerships," the Office of Advocacy, U.S. Small Business Administration, January 1999.

there is tremendous potential to involve more universities in partnering with small businesses to convert research into new technologies. One of the goals of the STTR program is to create economic development around universities, Federal laboratories and non-profit research institutions all across the country, in an effort to duplicate the successful clusters similarly developed along Massachusetts' Route 128 and California's Silicon Valley.

Lastly, of the major provisions included in this legislation, S. 856 strengthens the data rights protection for companies and research institutions that conduct STTR projects. The change in data rights is important because it clarifies that STTR companies, like SBIR companies, retain the data rights to their technology through all phases of an STTR project. Some agencies have been interpreting the law to mean that STTR companies only retain their data rights through phases I and II.

This clarification helps protect STTR companies from losing control of their research so that they have a greater chance of commercializing their technology themselves. This clarification is important because the Committee has learned that some agencies are providing the data to bigger contractors for development, thereby cutting out the small business. This unfortunate situation not only robs small businesses of revenues, but it also results in expensive legal costs for small businesses to protect their data rights.

## IV. SECTION-BY-SECTION

### *Section 1. Short title*

The title of the bill is "The Small Business Technology Transfer Program Reauthorization Act of 2001."

### *Section 2. Extension of program and expenditure*

This section reauthorizes the STTR program for nine years, through 2010, and raises the percentage of an agency's extramural R&D budget set-aside for STTR awards two times over the next nine years. In FY2004, it raises the percentage from .15 to .3 percent, and then in FY2007, it raises the percentage from .3 to .5 percent. This section also eliminates the word "pilot" from all places in the statute.

### *Section 3. Increase in authorized Phase II awards*

This section raises the amount of Phase II awards from $500,000 to $750,000. It is raised in FY2004, the same year that the set-aside percentage increases, so that the number of awards is not decreased. This section also adds flexibility to the program by giving the awarding agency the discretion to shorten or extend the amount of time for each phase, where appropriate for a particular project. Phase I is typically one year, and Phase II is typically two years. This authority shall be effective starting in FY2004.

### *Section 4. Agency outreach*

This section requires each of the participating agencies to implement an outreach program to research institutions and small business concerns in conjunction with any such outreach done for the SBIR program. The purpose is to increase new participation, particularly of universities and research institutions, in the STTR program.

### *Section 5. Policy directive modifications*

This section requires the SBA to issue a policy directive to all participating agencies that clarifies the data rights of STTR companies to their technology developed through STTR projects for all phases, including Phase I, Phase II and Phase III. Specifically, they have data rights for four years after the completion of each phase they are awarded a grant.

### *Section 6. STTR program data collection*

Consistent with requirements of the SBIR program, this section requires each agency with an STTR program to collect and maintain, in a common format, information on award winners as is necessary to assess the success of the STTR program, including information necessary to maintain the public database at the SBA. The goal is to collect fundamental information about the companies that get STTR awards so that they can be tracked if they close, are sold, or create spin-off companies, and to keep fundamental information about the award received so that we can track the technology.

In addition to this information, four specific questions will be added to information collected on STTR awards. The Committee wants to know who initiates the collaborations; who originated the technology; how long it took to negotiate a licensing agreement between the STTR partners; and the percentage allocated to each partner from any revenues resulting from an STTR project.

This section also seeks to minimize the burden on small businesses by requiring the SBA and the participating agencies to work together to simplify and standardize reporting requirements for information included in the databases.

Lastly, this section includes a requirement for the SBA to report at least once a year to the Senate Committee on Small Business and Entrepreneurship and to the House Committees on Small Business and Science regarding output and outcomes of the STTR program and the extent to which participating agencies are providing the relevant requisite information to the SBA in order to maintain current databases.

## V. COMMITTEE VOTE

In compliance with rule XXVI(7)(b) of the Standing Rules of the Senate, the following vote was recorded on July 19, 2001. A motion by Senator Bond to adopt S. 856, the Small Business Technology Transfer (STTR) Program Reauthorization Act of 2001, was approved by a recorded vote of 19–0, with the following Senators voting in the affirmative: Kerry, Bond, Levin, Harkin, Lieberman, Wellstone, Cleland, Landrieu, Edwards, Cantwell, Carnahan, Burns, Bennett, Snowe, Enzi, Fitzgerald, Crapo, Ensign and Allen.

## VI. EVALUATION OF REGULATORY IMPACT

In compliance with rule XXVI(11)(b) of the Standing Rules of the Senate, it is the opinion of the Committee that no significant additional regulatory impact will be incurred in carrying out the provisions of this legislation. There will be no additional impact on the personal privacy of companies or individuals who utilize the services provided.

## VII. CHANGES IN EXISTING LAW

In the opinion of the Committee, it is necessary to dispense with the requirement of section 12 of rule XXVI of the Standing Rules of the Senate in order to expedite the business of the Senate.

## VIII. COST ESTIMATE

In compliance with rule XXVI(11)(a)(1) of the Standing Rules of the Senate, the Committee estimates the cost of the legislation will be equal to the amounts discussed in the following letter from the Congressional Budget Office.

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
*Washington, DC, August 2, 2001.*

Hon. JOHN F. KERRY,
*Chairman, Committee on Small Business,*
*U.S. Senate, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 856, the Small Business Technology Transfer Program Reauthorization Act of 2001.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Ken Johnson.

Sincerely,

BARRY B. ANDERSON
(For Dan L. Crippen, Director).

Enclosure.

*S. 856—Small Business Technology Transfer Program Reauthorization Act of 2001*

Summary: S. 856 would change the expiration date of the Small Business Technology Transfer (STTR) program from 2001 to 2010. The STTR program requires agencies with annual appropriations for extramural research of more than $1 billion to set aside a portion of their extramural research budget for cooperative research between small businesses and a federal laboratory or nonprofit research institution. The bill also would make certain modifications to the STTR program, including gradually raising the percentage of research funds that would be set aside for the program and altering the data reporting requirements for the participating agencies.

Assuming appropriations of the necessary amounts, CBO estimates that implementing S. 856 would cost about $25 million over the 2002–2006 period. S. 856 would not affect direct spending or receipts; therefore, pay-as-you-go procedures would not apply.

S. 856 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: The estimated budgetary impact of S. 856 is shown in the following table. The costs of this legislation fall within budget functions 370 (commerce and housing credit), 250 (general science, space, and technology), 050 (national defense), 270 (energy), and 550 (health).

| | By fiscal year, in millions of dollars— | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| SPENDING SUBJECT TO APPROPRIATION | | | | | | |
| STTR Spending Under Current Law: | | | | | | |
| Budget Authority [1] | 4 | 0 | 0 | 0 | 0 | 0 |
| Estimated Outlays | 4 | 1 | 0 | 0 | 0 | 0 |
| Proposed Changes: | | | | | | |
| Estimated Authorization Level | 0 | 4 | 4 | 6 | 6 | 6 |
| Estimated Outlays | 0 | 3 | 4 | 6 | 6 | 6 |
| STTR Spending Under S. 856: | | | | | | |
| Estimated Authorization Level | 4 | 4 | 4 | 6 | 6 | 6 |
| Estimated Outlays | 4 | 4 | 4 | 6 | 6 | 6 |

[1] The 2001 level is the amount that CBO estimates was appropriated to administer the STTR program in 2001.

Basis of estimate: The five federal agencies that currently participate in the program are the Department of Defense, the Department of Energy, the Department of Health and Human Services, the National Aeronautics and Space Administration, and the National Science Foundation. Program oversight is conducted by the Small Business Administration (SBA). The costs of the STTR program to the participating agencies consist primarily of salaries and expenses for personnel to evaluate grant applications, associated overhead costs, printing costs, and mailing expenses. The costs associated with administering awards through the STTR program are slightly higher than administering the same awards through regular program channels.

Based on information from the SBA and the participating agencies, CBO estimates that administering the STTR program will cost a total of about $4 million this year. Therefore, CBO estimates that extending the current STTR program through 2010 would cost these agencies approximately that amount per year, assuming appropriation of the necessary amounts.

In addition, S. 856 would increase the percentage of the agencies' extramural research budgets that would be set aside for the STTR program starting in 2004. Based on information from the affected agencies, CBO predicts that this provision would cause the number of applications for STTR grants to increase, thereby increasing the administrative cost of the program. Based on information from the SVA and the participating agencies, CBO estimates that this expansion would cost an additional $2 million a year during the 2004–2006 period, subject to the appropriation of the necessary funds.

Finally, S. 856 would modify the STTR program in two other ways. The bill would expand the program's outreach efforts to small businesses and the research community. Also, the legislation would alter and expand the data that the participating agencies would have to report to the SBA each year as part of its oversight responsibilities. Based on information from the affected agencies, CBO estimates that implementing these provisions would cost less than $500,000 per year.

Pay-as-you-go considerations: None.

Intergovernmental and private-sector impact: S. 856 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

Estimate prepared by: Federal Costs: Ken Johnson. Impact on State, Local, and Tribal Governments: Scott Masters. Impact on the Private Sector: Cecil McPherson.

Estimate approved by: Robert A. Sunshine, Assistant Director for Budget Analysis.

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