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SBTC Comments on STTR and HR 2981 (TRANSFER Act)

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The Small Business Technology Transfer (STTR) program has been very successful in helping to facilitate cooperation between the most innovative sector of the U.S. economy, small business, with the best basic and applied research institutions in the world, American universities. SBIR companies have proven to be the most efficient and prolific producers of high-tech innovations, having received 127 R&D 100 awards in the past 25 years with only 2.5-3% of Federal R&D money annually. And American universities have a remarkable record of basic research, with 119 Nobel laureates affiliated with American universities in the past 25 years.

The STTR is a remarkably successful federal R&D procurement program specifically created by Congress in the Small Business Research and Development Enhancement Act of 1992¹ to build bridges between research universities and small businesses, so that they could benefit from each other's strengths. STTR program initially was to facilitate the transfer of early technology from the "experts" in early stage R&D to the entrepreneurial environment where funding and commercialization expertise reside thus maximizing the opportunity to put technology based products into the market place.

Taking any portion of this funding away from the entrepreneurial community and redirecting it into early stage researchers who neither have the skills nor the infrastructure to commercialize technology is degrading the programs purpose and expected results. Universities already receive 40-60% of SBIR funding.

The TRANSFER Act (HR 2891) reduces the funds going to the STTR program by \$80 million, over 20%. That is the equivalent of approximately 150 Phase I and 60 Phase II awards being removed from STTR, and from small businesses. It also means that likely fewer universities will benefit from the TRANSFER Act than from STTR.

While American universities can boast of an unquestionably impressive record of basic research, unfortunately their record of commercialization of that research is not nearly as impressive.

¹ PL 102-564, S. 2941, Oct. 28, 1992



Innovation

Universities virtually never commercialize their technology alone. They always have partners to convert their research into innovations. Even with partners in Government and business, they rarely account for over 10% of key innovations. The most significant new innovations in the marketplace have been demonstrated to come from small businesses – especially from STTR and SBIR firms. An important study on technology and innovation, entitled “Where Do Innovations Come From?” reported:

“The results show that these SBIR-nurtured firms consistently account for a quarter of all U.S. R&D 100 Award winners—a powerful indication that the SBIR program has become a key force in the innovation economy of the United States.”²

This 40-year study shows that SBIR recipients develop twice as many key innovations as universities.

Patents

SBIR/STTR firms are awarded more patents each year than all American universities combined.³ Under 10% of Federal R&D dollars to universities result in licensing revenue. In FY2012, the total licensing income from university research was only \$2.6 billion dollars, while federally funded research expenditures at universities reached \$40 Billion.⁴ Universities licensing revenue is only 6.5% of their federal R&D dollars.

One indication of the importance of a patent is the number of times that it is cited in other patent applications. A study of companies that were “serial innovators” (with 15 or more patents over five years), found that over one-third were small companies, many of them SBIR companies. Patents from these small “serial innovators” were cited 28% more often by other inventors, were twice as likely to be among the top 1% of the most widely cited patents, and were twice as closely linked to scientific research than were the patents from the large “serial innovators”.⁵

² Black, Fred and Keller, Matthew R. *Where Do Innovations Come From? Transformations in the U.S. National Innovation System, 1970-2006* The Information Technology & Innovation Foundation, July 2008
http://www.itif.org/files/Where_do_innovations_come_from.pdf

³ Data from www.innovation.com the web site for Ann Eskesen, President of Innovation Development Institute, Swampscott, MA, 2011, the best and most comprehensive source of SBIR data. From the program inception in 1982 to date total funding is \$31.8 billion; total number of patents issued is 75,265.

⁴ *FY2012 Highlights*. Association of University Technology Managers (AUTM). 2012
http://Autm.net/AM/Template.cfm?Section=FY2012_Licensing_Activity_Survey&Template=/CM/ContentDisplay.cfm&ContentID=11435

⁵ Hicks, Diana *Small Serial Innovators: The Small Firm Contribution to Technical Change*. CHI Research, 2003, produced under contract to the Small Business Administration, contract SBA01C-0149.



Commercialization

Small businesses have also vastly outperformed universities in the area of commercialization. A comprehensive study of the SBIR/STTR programs under taken in 2008 surveyed SBIR companies and found:

“On average, SBIR projects received almost \$800,000 from non-SBIR sources, with over half of respondents (51.6 percent) reporting some additional funds for the project from a non-SBIR source.”⁶

See also GAO-05-861T, Observations on the Small Business Innovation Research Program, General Accountability Office, 2005

Strikingly, there are now more scientists and engineers working in smaller companies (38%) than in any other sector. Some 27% of U.S. scientists and engineers currently work for large companies, 16% for universities, 13% for government, and 6% for nonprofits.

The SBIR Program, is at least partly responsible for small business’ growing science and engineering firepower, has deployed it to remarkable effect.

SBIR/STTR University Comparison

These facts are true in spite of the fact that universities receive well over 10 times more federal R&D dollars than the SBIR/STTR programs every year. SBIR/STTR companies receive 3% of Federal extramural R&D funding while universities receive between 32-36%. Simple stated, SBIR/STTR companies produce more patents, more than twice as many key innovations, and have a far better record of commercialization, on 10% of the federal funding that universities receive.

⁶ Wessner, Charles W., Ed. *An Assessment of the Small Business Innovation Research Program*, National Research Council, National Academies Press. Committee on Capitalizing on Science, Technology, and Innovation, 2008 pg 122 http://www.nap.edu/catalog.php?record_id=11989



Conclusion

Given universities' lack of success in commercialization of their research, we find it surprising that anyone would seek to transfer funds from the successful STTR program to fund an untested, unproven program directed at universities. SBTC is very supportive of small business/university partnerships, which the current STTR program facilitates, and we believe that they are good for America. If Congress believes there is opportunity for direct funding of universities to further encourage commercialization of their technology, such funding should not be removed from the STTR program that is already successful in accomplishing this. Until universities demonstrate they can dramatically improve their own commercialization success, it makes no sense to take money away from small businesses, who are already succeeding at commercializing innovative technologies.

If you have any questions, please contact Alec Orban at Alec@SBTC.org.

The Small Business Technology Council is a non-partisan, non-profit industry association of companies dedicated to promoting the creation and growth of research-intensive, technology-based U.S. small business. SBTC is a council of the National Small Business Association (NSBA), the nation's first small-business advocacy organization celebrating more than 75 years in operation.