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United States House of Representatives

**Commercializing on Innovation: Reauthorizing the Small Business Innovation Research
and Small Business Technology Transfer Programs**

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Mr. Chairman and Members of the Committee, thank you for this opportunity to testify regarding the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs at the National Science Foundation (NSF). My name is Barry Johnson, and I am Director of the Division of Industrial Innovation and Partnerships in the NSF Directorate for Engineering. In this role, I have oversight responsibility for the SBIR and STTR programs at NSF. For ease of communication I will use the term “SBIR program” to refer to the collective SBIR and STTR programs.

The SBIR program is an integral part of the NSF strategy to stimulate innovation and address societal needs through the commercialization of the results of research. We fund small businesses at very early stages, when the technology risk is high and before the private sector is normally willing to invest. Since NSF is not the ultimate customer of the innovation stimulated by the SBIR program, the NSF SBIR research topics are oriented to the needs of the marketplace and the nation as a whole.

All companies that receive NSF SBIR funding first receive Phase I funding. Phase I funding can be up to \$225,000 for a period of performance ranging between six and 12 months. All Phase I grantees are eligible to apply for Phase II awards to conduct expanded research efforts to complete technical milestones as a pre-requisite for further commercialization. Phase II award size can be up to \$750,000 for a period of up to two years. Proposals for Phase II funding require a commercialization plan in addition to a technical research plan. Thus, when a business receives Phase II funding, it already has a strategy in place for commercialization of the technology.

SBIR Phase IIB

In 1998, NSF SBIR introduced a new supplemental program called Phase IIB as a platform to stimulate NSF-funded active Phase II grantees to attract private sector funding for further

technology commercialization. The Phase IIB proposal is submitted while the company is conducting the Phase II research. With Phase II research underway, the small business is better positioned to attract investors because most of the early stage technology risk has already been addressed with NSF funding.

The Phase IIB program requires that third party commitments be double the level of supplemental funding from NSF, up to a maximum of \$500,000 from NSF. The Phase IIB supplement was initiated to further ‘fill the gap’ between the funding from an NSF Phase II grant and the funding ultimately required to achieve successful commercialization. The supplemental funding from NSF ranges between \$50,000 and \$500,000. Third party investors include both public and private sectors. For supplements over \$250,000, the small business must participate in a reverse site visit at NSF with its investor.

Additional Support

In addition to providing funding, we also assist our awardees by providing them with an educational component based in part on the NSF Innovation Corps (I-Corps) program that helps entrepreneurs and their small businesses understand market needs and customers, thus increasing their chances of successfully commercializing new technologies. The NSF SBIR program is also staffed with a team of program officers with strong technical backgrounds in the areas supported by the program and with business experience in large and small organizations. The SBIR program officers generate the topics, review the proposals, manage the awards, and provide significant mentoring for the grantees.

Commercialization Assessment

NSF monitors the commercial outcome of our Phase II awardees and has found that 32% of the NSF SBIR grantees were fully successful in that they have at least \$1 million in revenue 6 years after completing the NSF SBIR Phase II award. Companies note strong intellectual property positions, strong academic collaborations, and strong ties to market leaders as major reasons for success. The success rate for companies receiving Phase IIB awards using this same measure was 65%. The impact of the Phase IIB program on success rates is thus very significant. The National Academies, in their recent report on “SBIR at the National Science Foundation,” found similar commercialization impacts of the NSF Phase IIB program.

Mr. Chairman, this concludes my testimony. On behalf of the National Science Foundation, the SBIR program and our awardees, I want to thank you for this opportunity to highlight a program that provides small businesses with the means to keep America on the forefront of innovation. I would be pleased to provide any additional information that would be useful to you.