Commercializing on Innovation: Reauthorizing the SBIR and STTR Programs Part II.
Testimony by Dr. B. David Green, Physical Sciences Inc. Andover MA on March 8, 2016

Good afternoon Congressman Hanna and Congressman Moulton:

Thank you for your interest in the SBIR program and allowing our innovative companies to participate and share their stories. SBIR represents America's seed capital and has helped create new companies, excellent high technology jobs, and a great many publications and patents. It is the envy of other countries, and its success has not been duplicated due in part to America's unique entrepreneurial culture. The SBIR program funds concepts at very early stage where no other funding source exists. It allows the risk takers to retain and reap the rewards of their dedicated efforts. The government and the agencies are truly patient angel investors. Ultimately the investment is returned through taxes. Recent studies by the National Academies and by the mission agencies report its great success. Every government dollar results in over $3 of revenue after Phase II.

The SBIR is a great program. I wish to make three suggestions for your consideration to make it even better. The SBIR program has demonstrated its value over the past 33 years. First, please make it permanent. A long term charter for the program allows for better agency planning and staffing. Before the 2011 reauthorization, there were 14 short term continuations that made it difficult for the agencies to execute the program and made it impossible for the small businesses to maintain staff and advance their technology. Since the 2011 Reauthorization, the SBIR program managers and staff at all the agencies have shown great dedication and commitment to making this good program even better – making ever more companies aware of this opportunity. We recognize and commend the dedicated efforts by the staff at SBA and the many agencies.

My second suggestion is to increase the allocation to the SBIR program. This program is budget neutral – and our request is to shift more resources to a program that has proven its effectiveness. Currently only 3% of the R&D funding in federal agencies is allocated to SBIR. I ask that you increase that allocation gradually to 5% over the next decade - and to focus the funds from that increase to maturing technology after the initial Phase II program. For years, many worthy technologies have died at the conclusion of Phase II programs because the technology, although demonstrated, is not in a form recognized as viable by a commercial company or a mission agency. At the end of Phase II it has not been demonstrated outside the lab under real world conditions. This gap has become known as the Valley of Death for SBIR technologies. Too many do not make it through to become viable commercial products. A good many receive some post-Phase II funding but it is too little, too fragmented, too restrictive. The Commercialization Readiness Program created in the 2011 Reauthorization has begun to address this need. I urge you to consider increasing the SBIR allocation and focusing it on further maturation of promising technologies after Phase II.

My last suggestion is to make access to the SBIR program easier so that a wider diversity of companies compete and win programs. We all understand that it is not easy doing business with the federal government. Recently there has been significant effort to involve nontraditional ventures and new companies in providing technology to address our

national needs. Instructions are complex. Submission is complex. Regulations are complex. A very large barrier to those new participants is the requirement for a government approved accounting system. We ask you to consider strongly encouraging the agencies with an SBIR program to use Fixed Price Best Efforts contracts for Phase II programs with the prototype remaining with the small business to enable transition to a commercial product. This will reduce the burden on both the companies and the government contracting officers to a fraction of the level needed in Cost Plus type contracts. Fixed Price will enable speedier contract award and more rapid advance of the technology. The innovators will spend more time on their technology rather than complying with the FAR. Most importantly, this will encourage many new entities to participate in the SBIR program.

Our employee owned company, PSI, has successfully transitioned many SBIR technologies. We find the fastest way to move the technology to market. Under NIH NEI sponsorship, PSI, working with clinical researchers, developed a retinal tracking method permitting greatly improved eye examinations. We partnered with a leading eye equipment manufacturer, and have sold 16,000 systems containing this technology over the last eight years - producing over $1B in revenue, and providing better eye care for tens of million Americans. Under EPA sponsorship we developed a handheld LIDAR to detect natural gas leaks. Our partner has sold over 3000 systems and a large fraction of American homes have been made safer using this technology. Under Air Force sponsorship we have developed critical optical components that are now integrated into aircraft systems.

In emerging technology areas we have sought external equity investment and created new companies. And PSI has also manufactured and sold the technology directly into specialized markets. Under NASA sponsorship we created accurate space simulation chambers that have been sold around the world, and offered testing services. Nearly every material that has been put into space has been tested in our chambers. Under Army SBIR sponsorship we have developed and sold sensors to detect chemical warfare agents remotely at distances permitting troop safety. Under Navy sponsorship we have developed fuel quality monitors for naval and commercial aviation. Under DNDO sponsorship PSI has implemented novel algorithms that vastly improve radiation sensor performance at screening portals. And under Army sponsorship we have developed a small UAV to provide our warfighters and law enforcement situational awareness. This capability is now deployed and contributing to national security.

PSI is a founding member of the New England Innovation Alliance. NEIA meets regularly to share best practices and discuss topics of common interest and concern. Many of our fellow members are here today to share their SBIR technology success stories with you.

The SBIR program is already one of the most successful in the government. It is America's seed capital. Today I have offered three suggestions to improve this already terrific program. I ask you to please move to reauthorize this program now, to increase its allocation and to encourage contracting methods that encourage new companies to participate in the program. SBIR's success is documented in the National Academy studies. I ask you to reauthorize it to keep technology innovation strong in America, and help America to remain the world leader in technology.