

**House Small Business Committee
Contracting and Technology Subcommittee
June 4, 2009**

**Written testimony by Marion C. Blakey, President and CEO
Aerospace Industries Association**

Introduction

Good morning Chairman Nye, Ranking Member Schock, and members of the Subcommittee. Thank you for the opportunity to testify before you today on such an important topic as the Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) Programs. As the president and chief executive officer of the Aerospace Industries Association (AIA), I represent nearly 300 aerospace manufacturing companies. Our industry is responsible for more than 2 million well-paying jobs and \$95 billion in exports last year leading to a positive trade balance of \$57 billion – the largest of any U.S. manufacturing sector. While AIA might be better known for our larger aerospace and defense companies, such as Lockheed Martin, General Dynamics, Northrop Grumman, Boeing or Raytheon, our Supplier Management Council is made up of many small businesses such as Morris Machine Company, Inc. in Indianapolis, Indiana; HAAS TCM/Avchem and Southco in West Chester, Pennsylvania; and, Sanmina-SCI Corporation in Huntsville, Alabama.

These companies are the suppliers our major corporations rely on for machined component parts, fabricated subassemblies, electronic subsystems, system software and many other items integral to operation of our aerospace equipment across civil aviation, national security and space. In fact, it is typical that 70 percent of the parts for a weapon system are supplied from outside sources to the prime contractor.

Just as the AIA serves to bring together our industry's prime contractors with suppliers, the SBIR program brings together the nation's small, high-tech, innovative businesses as a significant part of the federal government's research and development efforts. AIA member companies understand the important role that the SBIR program fills. Their managers work with suppliers to identify or develop SBIR projects for those technologies that are not currently being funded, but are necessary to achieve technology objectives resident in areas of critical interest to government agencies.

Companies large and small recognize the important role SBIR has in developing the next-generation of innovations. Therefore, I welcome the opportunity to be here today to discuss AIA's recommendations related to maintaining the integrity of the SBIR as a small business program. These include bridging the gap between high-risk, early-stage innovation and commercialization, updating allocation and award amounts to reflect today's economics and instituting a longer extension of the program reauthorization period.

Maintaining Integrity of the SBIR Program through limited VC participation rules

The SBIR draws on more than six million scientists and engineers that are now employed by small firms or self-employed, representing 38 percent of all the scientists and engineers in America, spawning an average of seven patents a day (67,000 patents since program inception). Yet, small businesses receive just 4.3 percent of the total federal R&D funding – SBIR and STTR accounts for almost two thirds of that 4.3 percent. For most small companies, SBIR remains the only game in town – just as it was when it was instituted in 1983. Reauthorizing the program should ensure that only companies that qualify as a small business be allowed to be the primary participants of the SBIR program to ensure that the nimble ingenuity of the entrepreneurs leading these businesses is not pushed aside.

Specifically, changes have been proposed related to the participation eligibility of venture capital firms. Modifying the SBIR program to allow for venture capital participation in firms seeking SBIR funds is a legitimate recognition of the changing business environment. However, changes must be made only after carefully considering which venture capital firms are allowed to participate. The integrity of SBIR as a small business program must not be threatened by weakening the safeguards and allowing large businesses access to SBIR funds. This includes venture capital firms who don't meet the size standard definition that states, "A small business concern for purposes of award of any funding agreement under the SBIR program is one which, including its affiliates, has a number of employees not exceeding 500."

Allowances should be made, however, if the venture capital firm qualifies as a small business itself or if the venture capital firm does not own 50% or more of the business concern and employees of the venture capital operating company do not constitute a majority of the board of directors of the business concern seeking SBIR funds.

Another issue relates to venture capital firms whose funding profiles include sovereign nation funds. The question as to what country may have controlling interest in these firms should be of special concern from a national security perspective and safeguards should be built in.

Venture capital, just as large business interests, can play a critical role in the technology commercialization phase of the process once the SBIR concept and potential benefits have been proven during the initial SBIR phases. But without open and competitive early R&D efforts, spread as widely as possible among traditional small businesses, innovations will never reach the level of maturity that can draw in venture capital or other follow-on funding.

Bridging gap between high-risk early-stage innovation and commercialization

The most significant impediment to producing products or having SBIR technology fielded is that Phase II SBIR usually does not get beyond Technology Readiness Level 4 (TRL-4). Military prime contractors require a TRL of a least 6 and the Federal Drug Administration (FDA) requires TRL-7 for clinical trials. Private capital during early-stage technology development is typically non-existent. At the idea stage, and even the development stage, the

risks are too great for all but a few investors, and therefore many innovations can't get beyond those stages without funding. This leaves a significant funding gap for SBIR firms.

AIA recommends developing a new follow-on award to Phase II that focuses on testing and manufacturing, to provide the opportunity for technologies to successfully mature between the current TRL-4 limit towards the TRL-6 needed for defense contracts, for example. Effectively transitioning technology from the working prototype stage to production and utilization by the agencies or the private sector is critical to ensure a maximum return on investment from the SBIR program into true commercial markets.

Developing and funding a new follow-on Phase IItm (for technology and manufacturing) would allow companies to conduct more testing and make initial production runs to test their devices for the intended use with production grade equipment. Implementing this new phase should allow for FDA testing, testing by prospective customers, and initial field tests by the military and other similar operational tests. It should also allow agency certification (FAA, FDA, etc.) approvals to be included as a direct cost. These Phase IItm programs should be competitively bid and selected from the best Phase II contracts/grants based on agency need and projected return on investment. They should be limited in number, and should generally be in the \$1 to \$5 million range.

Furthermore, effectively transitioning technology from the working prototype stage to Low Rate Initial Production (LRIP) and utilization by the agencies or the private sector needs to be addressed. Agency efforts like the National Institutes of Health's (NIH) Phase IIB and the Department of Defense's (DOD) Commercialization Pilot Program are pointing the way. Successes like those experienced by the Navy show that such transitioning can be accomplished in ways that benefit the government and the taxpayers. AIA urges Congress to incentivize agencies to match the successes of SBIR Phases I and II (and the proposed Phase IItm) in SBIR Phase III by providing funded programs which integrate with early phase SBIR technology. One key to this will be the expenditure of additional dollars on testing, evaluation and manufacturing.

Updating award size and allocation amounts to reflect current economic conditions

Major economic breakthroughs all along have been made by small company innovations, and SBIR accelerates technological innovation and helps attract private sector investment to the most promising innovations. Yet even with the SBIR and STTR programs, small businesses receive just 4.3 percent of total federal research & development funding.

Despite the tremendous advancements made by small business innovations, contract award sizes have not been adjusted since 1992. The real dollar award size of these contracts has effectively diminished and should be increased to compensate for 15 years of inflation. AIA recommends that award levels be increased to at least \$250,000 for Phase I awards and to \$2 million for Phase II awards.

However, merely increasing award sizes to account for inflation would effectively decrease the total amount of awards given unless the allocation percentage is also increased. The current set-aside of 2.5 percent of all federal extramural research and development funds

was set in 1998. Given the valuable research that has come out of our small businesses through the SBIR program, this set-aside allocation for SBIR should be incrementally increased to 5 percent and 0.9 percent for STTR of the total eligible R&D funds.

Longer extension of reauthorization period

Finally, legislative precedent and tradition often mean that U.S. government programs are authorized for one or two-year periods. However, the unique nature of the SBIR program warrants consideration of a much longer authorization period.

This committee has discussed authorizing the SBIR program through September 30, 2011. However, a two-year authorization does not provide sufficient time to implement and then assess results of any changes made. Historically, it takes at least a year for the agencies to implement the changes, at least another year to award and conduct a Phase I, about a year (6-18 months) to award a Phase II, two years to complete the Phase II and one to two years to study the effects. Thus, six or seven years is the minimum time needed to evaluate any legislative changes.

If additional Phase II continuations, Commercialization Pilot Programs, or other longer term changes are suggested, another two or three years would be required. Thus, 8-10 years would be needed for a complete evaluation by the Government Accounting Office, the National Academies or other organizations. Finally, a two-year legislative cycle would allow political discourse on the proper actions and legislative debate. This takes us to at least 10-12 years to adequately allow time for other exigencies. AIA recommends an authorization period of 14 years or reauthorizing the program through September 30, 2022.

Conclusion

The SBIR program was created to address critical U.S. government needs and to serve as an incubator for future technological development, providing funding for some of the best early-stage innovation ideas that are still too risky for private investors. And no innovation stimulus program in our nation's history has received higher marks across the board.

Keeping the SBIR program at pace with today's economic and technological environment means updating the program as soon as possible, which will yield untold results. In order to ensure this program remains at the forefront of technology and a key driver for our innovative small businesses, AIA recommends the following be implemented as this program is reauthorized:

- Allowing limited venture capital participation so long as necessary safeguards are included to ensure the integrity of the SBIR as a small business program.
- Developing a Phase II follow-on program to provide a bridge between promising technological development and potential commercialization and utilization in the defense acquisition process.

- Increasing both the contract award sizes in both Phases I and II and the overall funding allocation percentage given to the SBIR program.
- Reauthorizing the program through September 30, 2022, to evaluate results and provide program continuity.

Thank you again for the opportunity to testify before this Committee. I look forward to any questions you may have.