

Testimony

Of

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The House Committee on Small Business

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Chairwoman Velázquez, Ranking Member Chabot, I am Larry Farrell, President and CEO of the National Defense Industrial Association and on behalf of our 1,416 corporate members, and just over 53,000 individual members, I'm pleased to appear before you today to discuss the Small Business Innovation Research program, which we regard as the nation's most viable tool in leveraging a small business resource that employs about half of the US workforce and about one-third of our degreed scientists and engineers according to the Small Business Administration. Small Business represent about two thirds of NDIA's total membership, it is therefore fitting and proper that you have invited NDIA to provide the Committee with its views on the critically important reauthorization of the Small Business Innovation Research (SBIR) program. In fact, during the past five years we have demonstrated our support of the SBIR program, by highlighting it as an important initiative in our Top Issues report presented to Congress and the Department of Defense, (DoD) annually. Moreover, beginning with our initial National Small Business Conference meeting in 2003, we have had significant participation by the DoD SBIR community and the National Research Council.

With respect to your leadership and the Committee's interest in reauthorizing and improving this driving force in technology innovation to support American competitiveness, I will address four questions:

- Does the SBIR program generate the desired results?
- Is the SBIR program evolving to advance American competitiveness?
- How do we know SBIR works? – are we measuring what we manage?
- Is Congressional leadership needed to assert and grow the US innovation franchise?

Does the SBIR program generate the desired results?

As you know, SBIR has received consistently favorable statistical reviews in independent evaluations by the General Accountability Office (GAO), the RAND Corporation, the National Bureau of Economic Research, and most recently, in the voluminous five-year study completed by the National Research Council (NRC). In addition, I have attached numerous Department of Defense (DoD) SBIR success stories. In its lengthy, detailed *Assessment of the SBIR Program at the Department of Defense*, the NRC found that SBIR meets the Congressional mandates for innovation, commercialization, and mining the small business resource to meet federal R&D needs. The NRC recommends SBIR expansion to improve these outcomes, and included a wealth of data to support its findings and recommendations.

I should also note that the SBIR program includes three of the seven DoD Acquisition, Technology and Logistics goals. DoD is on record stating that “small businesses are critical for the Department of Defense to provide future technologies to enable priority-critical war fighting capabilities”.

NDIA believes declining defense research and development dollars places an even greater importance on achieving success from this program. Members in our regional Chapters that contain small defense technology firms are beginning to learn to work hand-in-hand with our large corporate members in a synergy designed to field optimal, innovative and affordable technology solutions to American defense and security needs. These solutions, as I am certain you know, have long been coming. However, I am highly encouraged by the trends and know DoD is striving to make every effort to develop ways to increase the number of technologies developed from the SBIR program and transition them into the defense industry.

As industry stakeholders, NDIA has a laser focus on American competitiveness in a global defense industry that increasingly challenges our members for primacy. Because we have concluded that small business resources offers our defense industry competitive advantages, we are building a substantial NDIA Small Business Division which has led to increased small business membership at our regional chapters.

A concrete measure of NDIA's commitment to the SBIR program was the participation of our Chair of our Small Business Division, who was a principal on the Committee for Capitalizing on Science, Technology and Innovation, which supervised the NRC SBIR study. During the critical two-year period of drafting its *Assessment of the SBIR Program at the Department of Defense*, this committee constantly scrutinized the reams of DoD SBIR data and interviews, and held staff drafts up to a high standard of data veracity regarding program results. Why did we play that role? Because we felt that American defense industry competitiveness depends, in part, on small business performance through SBIR. But in that regard, more needs to be done, and can be done through SBIR reauthorization.

Is the SBIR program able to evolve to meet national needs?

Under the twin pressures of competitiveness and innovation, Congress has helped the SBIR program evolve through increased focus on commercialization of SBIR's innovative technologies in private industry – biotech, telecom and information security are prominent as well as federal defense and security programs. Recent evidence includes the 2006 Congressionally-mandated DoD SBIR Commercialization Pilot Program (CPP), which is pulling Army/Air Force/Navy command and R&D communities closer to each other. These efforts are beginning to show results (especially

in the Navy) in accelerating transition of SBIR technologies into defense Programs of Record by increasing boots on the ground in the complex work of managing small business/large business/defense program office technology partnerships. In FY 2006, 68 percent of Phase I contracts were awarded to firms with fewer than 25 employees, while over 42 percent were awarded to firms with fewer than 10 employees. This shows that to a great extent, the Department taps into small entrepreneurial firms. Entrepreneurial firms tend to offer the most ground-breaking, potentially disruptive innovation—the type that fundamentally changes how a capability is provided. Also importantly, the DoD SBIR Program is an entry point for firms new to the defense business—those seeking to develop a military customer base. Consequently this program has become a critical means for small firms with emerging technologies to work with DoD to address their mission requirements and help the nation maintain a vibrant and diverse industrial base.

But continued SBIR evolution to meet innovation and competitiveness needs in our defense and security world will need Congress to address some stubborn commercialization issues.

First, as the NRC, GAO, RAND and other independent observers have found, the present SBIR program terminates its projects after about 30 months of Phase I and II effort, when technologies – however promising – are just not mature enough for successful commercialization. Phase III technology maturation through the testing-evaluation-improvement cycle is drastically under funded; the need for such an incentive should be addressed in SBIR reauthorization.

Second, also as independent observers have concluded, increased successful SBIR commercialization will likely result from improved and required technology transition/technology insertion plans as part of every DoD Program of Record's Acquisition Plan. If such transition plans were paired with specified SBIR technology commercialization objectives in DoD – a natural

correlate to Congress' mandated SBIR commercialization goal – my estimate is that America would soon reap great competitiveness benefits. But in spite of these challenges, the SBIR program has yielded some very concrete successes which have benefited NDIA members and the defense industrial base. Examples include:

The Phraselator, a hand-held speech translation device developed by Marine Acoustics, Inc. (MAI), a veteran-owned small business based in Middletown, Rhode Island, which is now owned and marketed by Voxtec, Inc. Following the terrorist attack in September of 2001, just seven months into their Phase II contract, DARPA requested that MAI accelerate development of a prototype Phraselator. MAI proved quite capable, delivering 200 units in a matter of weeks to US military forces for use in Afghanistan during Operation Enduring Freedom. Over 5,000 Phraselators are now in use in Afghanistan, Iraq, and around the world, and they were used extensively in recent tsunami relief efforts. There is potentially a large commercial market for the devices, which are particularly helpful in law enforcement and medical applications where situational urgency may not allow time for an interpreter to arrive on the scene.

A second example is from Trident Systems, Inc. based in Fairfax, Virginia. Trident has been an active participant of the SBIR program, and as such credits the program with much of its success as a defense contractor. It received a not to exceed \$25 million Phase III SBIR contract to further develop capabilities to develop radio frequency (RF) bridging equipment to move raw sensor data via legacy and emerging manned and unmanned RF communication nodes, correlating it, displaying it integral with command and control

software while providing the needed sensor data directly to the front line for our special operations command.

A third example highlights the ability of SBIR-funded technologies is Cybernet Systems in Ann Arbor, Michigan. Cybernet is a woman-owned business which has become the most successful SBIR firm in the state of Michigan. As such it is making enormous contributions to helping address the needs of our defense community. Cybernet created the Automated Tactical Ammunition Classification System (ATACS). The ATACS is a tactical small arms ammunition sorter designed to rapidly sort and inspect loose small arms ammunition ranging from 5.56 mm to 50 calibers at a rate of 12,500 rounds per hour. In contrast to traditional, time-consuming methods of hand sorting by military personnel, Cybernet's system has fully automated the classification process. The first ATACS tactical ammunition sorter was developed and deployed for the U.S. Army in Camp Arifjan, Kuwait. Cybernet is currently completing a second ATACS unit that will include some greater inspection detail. It is projected that the ATACS will enable the Army to receive consistent automated inspections for ammunitions thereby reducing manpower requirements and improving ammunition safety.

How do we know that SBIR works? – are we measuring what we manage?

Measuring what we manage is a standard industry function; it's the way that we identify and assess commercialization best practices and choke points alike. In terms of budget, the DoD program represents over 50 percent of the total federal SBIR budget, which exceeds two billion dollars. The DoD SBIR Program has experienced substantial growth in recent years, more than doubling in size from FY 1999 to FY 2005 to over one billion dollars, and it continued to grow through FY 2007 to

over \$1.25 billion. This expansion is driven directly by growth in underlying RDT&E budgets, even as the set-aside percentage has remained constant over this period of time. In FY06, 883 topics attracted 13,253 Phase I proposals, a rate of 15 proposals per topic— about the average of the prior four years. The Department awarded 1,862 Phase I contracts and 1,172 Phase II contracts, and since the inception of the SBIR program in 1983, DoD has awarded nearly \$11 billion to qualifying small firms through over 44,500 contracts. However, with a 1% SBIR administration cap, it's hard to see how DoD agencies can effectively measure and manage a DoD SBIR program currently tagged at almost \$1.25 billion.

Although the NRC study staff found a surprisingly amount of SBIR data to evaluate SBIR management, the independent observers I've heretofore mentioned have also noted insufficient SBIR administration to support improved commercialization.

Another measurement of success of the SBIR program is the number of SBIR companies that have been acquired by large businesses. As shown on attachment two, nine of the very large defense corporations have together acquired 75 SBIR companies of the past few years, a positive indication of the value the defense industry sees in these innovative small businesses

The Defense Appropriations Act for FY 2008 provides \$85 million of Research, Development, Test and Evaluation (RDT&E) funding for the insertion of technologies developed by small businesses. The funding provided is focused on the Future Combat Systems of Systems Engineering and Program Management, Surface Antisubmarine Warfare, New Design SSN and the Joint Strike Fighter. Although the law does not require that the small businesses supported with this funding be SBIR contract recipients, the DoD clearly recognizes that SBIR funded firms and technologies

represent ideal candidates. As such, the DoD has recommended its military departments and agencies examine their program needs, and to consider using the CPP program to help identify projects with the greatest potential to meet high priority requirements for the programs receiving this funding. This is yet another example of how the SBIR program is moving into the mainstream of Defense initiatives to provide timely and cost effective solutions.

A moment ago, I mentioned the 2006 Congressionally-mandated DoD SBIR Commercialization Pilot Program – or CPP --, which is challenging the Army, Air Force and Navy to use the SBIR program with its inventory of technology innovation to identify and implement best practices in commercializing SBIR product in DoD Programs of Record. In just two years, all three services have taken that task far down the implementation road, with careful measurement of what they are managing in their revitalized SBIR programs to ensure that the administrative improvements Congress demanded are working. Navy SBIR in particular sees their new SBIR constructs working, and has reported to the Secretary of Defense dozens of accelerated SBIR projects in both 2006 and 2007. I'll note here that one element all three services have identified as a best SBIR commercialization practice is the provision of special commercialization training to SBIR awardees on a discretionary basis. We would ask that you consider addressing that issue in your reauthorization efforts.

Overall, the key for the Committee's consideration is to require in any SBIR reauthorization a level of reporting sufficient for us to continually measure what we manage, and manage what we measure. That will require adequate administration – and I'll simply note here that federal management of similar contract programs average about 5% to 10% overhead, with industry

management of comparable programs running as high as 25% overhead. Current guidelines restrict SBIR administrative costs to 1 percent.

Is Congressional leadership needed to assert and grow the US innovation franchise?

Without question, Congressional leadership is needed to leverage the nation's small business resource through the SBIR program. It is also without question that without Congressional interest and leadership, especially your Committee, Madam Chairwoman, the SBIR program would have withered on the vine. There are several topics committee may want to consider:

1. Allowing up to 3% of the SBIR set-aside budgets to be used to fund administrative expenses. The most important activities requiring these resources are contracting, technical oversight, and program coordination with systems developers and end-users. Benefits derived from this change will ultimately manifest themselves in overall program performance, such as through the aggregate rate and magnitude of commercialization achieved. Modification of the current discretionary technical assistance authority (15 U.S.C. 638(q)), would provide ample resources for this task, particularly when combined with resources made available through the Commercialization Pilot Program (CPP) authority (15 U.S.C. 638(y))
2. We believe that flexibility is the key to contract award guidelines. In FY 2006, the average DoD Phase I award was \$89,300 and the average Phase II was \$720,800. Approximately 30 percent of these awards were modified due to participation in the Fast Track and Phase II Enhancement programs or to address technical or mission needs. Among this set of awards, the average contract award was about \$135,000 for Phase I and \$1.1M for Phase II.

Current contract award guidelines are \$100,000 for Phase I and \$750,000 for Phase II. These have been in place since 1992 for the SBIR program and have not been increased to reflect inflation's impact on the price of research and development.

The cost of technology development and prototyping is part dependent on the type of technology being developed—some technologies are more expensive than others. For example, manufacturing-related initiatives can run into the millions of dollars to effectively prototype and demonstrate. Additionally, test, evaluation and validation can be quite expensive for technologies destined for military use. Thus, regardless of the level of the award guidelines, technology cost variability and the often high cost of bringing technologies to a transition-ready maturity level need flexibility in program execution. Therefore, flexibility is needed to judiciously go beyond the proscribed guidelines when necessary to be responsive to technology transition opportunities and produce successful outcomes.

3. Given the potential impact of the SBIR program on defense programs, we recognize that There is an on-going debate about raising the amount of the set-aside above the current 2.5 percent. We would encourage you to further examine the benefits of such a change in the context of the overall DoD science and technology investment strategy and meeting the ultimate needs of the warfighter.

Madam Chairwoman and Members of Committee, I'm honored to have had this opportunity to give you an insider's defense industry perspective on the SBIR program as my organization sees it. I encourage you and the Committee to work with us to take the SBIR program to new heights of

accomplishment in securing American competitiveness through technological innovation. In ~~this~~
tight, global economy, you could not leave a brighter legacy to our nation.