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FEDERAL RESEARCH

Interim Report on the Small Business Innovation Research Program

Statement of Victor S. Rezendes,
Director, Energy and Science Issues,
Resources, Community, and Economic
Development Division

Mr. Chairman and Members of the Subcommittee:

We are pleased to discuss the results of our review of the Small Business Innovation Research (SBIR) Program.[1] The Small Business Innovation Development Act of 1982, which authorized the SBIR Program, emphasized the benefits of technological innovation and the ability of small businesses to transform research and development results into new products. Reflecting its view of the program's success, the Congress reauthorized the program in 1992 and provided for a doubling of program funding to approximately $1 billion by fiscal year 1997. Last month, we issued a report that assesses (1) whether quality research proposals have kept pace with the program's expansion, (2) the implementation of a provision for technical assistance to SBIR companies, and (3) the duplicate funding of similar research.

My discussion today highlights the message of our report:

-- To date, the quality of research proposals appears to have kept pace with the program's expansion. Our view is based on the (1) high level of competition, (2) large numbers of proposals that agencies deemed worthy of funding but that received no award, and (3) views expressed by program officials that quality is being maintained. However, it is too early to make a conclusive judgment about the long-term quality of research proposals because the major increases in program funding have not yet occurred.

-- None of the 5 federal agencies that provide over 90 percent of the SBIR funding have taken steps to implement the discretionary technical assistance provision, and future implementation remains uncertain. Program officials saw no

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[1]Federal Research: Interim Report on the Small Business Innovation Research Program (GAO/RCED-95-59, Mar. 8, 1995)

need for technical assistance because projects are selected primarily for their technical merit. However, they have taken steps, independent of the provision, to provide assistance with commercialization of research results.

-- The duplicate funding of similar research has become a problem, especially with the increasing numbers of research proposals submitted to the SBIR program. According to agency officials, a few companies received funding for the same proposals twice, three times, and even five times before agencies became aware of the duplication. Several factors are contributing to this problem, including (1) the evasion of certification procedures whereby companies fail to identify similar proposals to other agencies, (2) the lack of a consensus on what constitutes a duplicate proposal, and (3) the general lack of interagency access to and exchange of current information about recent awards by other agencies.

BACKGROUND

The Congress established the SBIR program in 1982 to stimulate technological innovation, to use small business to meet federal R&D needs, to foster and encourage participation by minority and disadvantaged persons in technological innovation, and to increase private sector commercialization of innovations derived from federal R&D.

Eleven federal agencies participate in the SBIR program. Five of them--the Department of Defense (DOD), the National Aeronautics and Space Administration (NASA), the Department of Health and Human Services and particularly its National Institutes of Health (NIH), the Department of Energy (DOE), and the National Science Foundation

(NSF)--provide over 90 percent of SBIR funds.[2] Each agency manages its own program while the Small Business Administration (SBA) plays a central administrative role, including issuance of policy directives and annual reports for the program.

The legislation establishing the program required each agency with an extramural (or external) R&D budget in excess of $100 million to set aside a certain percentage of this amount for the program. The percentage was increased incrementally until it reached 1.25 percent in 1986. The reauthorization legislation[3] increased program funding to not less than 1.5 percent for fiscal years 1993 and 1994, not less than 2 percent for fiscal years 1995 and 1996, and not less than 2.5 percent for fiscal year 1997 and thereafter.

SBIR funding is provided in two phases. Phase I is intended to determine the scientific and technical merit and feasibility of ideas; it generally lasts about 6 months. Phase II further develops the proposed ideas and generally lasts about 2 years. The size of awards in phases I and II was generally limited under an SBA directive to $50,000 and $500,000, respectively. However, the 1992 reauthorization directed SBA to raise the general limits on the size of phase I and II awards to $100,000 and $750,000, respectively, although awards may be for less than these amounts.

The 1992 reauthorization also included a discretionary technical assistance provision that authorized the use of SBIR program money to assist award recipients in achieving the technical and commercial goals of SBIR projects. The provision permits

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[2]The other 6 agencies include the United States Department of Agriculture, the Department of Commerce, the Department of Education, the Department of Transportation, the Environmental Protection Agency, and the Nuclear Regulatory Commission.

[3]Public Law 102-564, Oct. 28, 1992

agencies to enter into an agreement with a vendor to provide this assistance. In funding this arrangement, the provision authorizes not more than $4,000 for phase I and $4,000 annually for phase II award recipients.

QUALITY RESEARCH PROPOSALS KEPT PACE WITH INITIAL PROGRAM EXPANSION

Although it is too early to make a conclusive judgment about the effect of funding increases on the quality of SBIR research proposals receiving awards, the quality of research proposals appears to have kept pace with the program's initial expansion.

First, the level of competition for awards remained high following the initial increase in funding in fiscal year 1993. In all five major agencies during fiscal year 1993, the number of proposals rose between 9 and 30 percent. These increases were important in maintaining the competitiveness of the program during the first year that the program's funding percentage grew to 1.5 percent. In addition, the ratio of awards to proposals within each agency remained fairly constant, ranging from 8 percent (for DOE) to 28 percent (for NIH). Among all five agencies, the data for fiscal year 1993 showed virtually no change in the ratio from the previous 2 years, suggesting that the funding increase exerted no adverse effect on the competitiveness of the program.

Second, agencies deemed many more proposals worthy of award than they were able to fund. In some agencies, the large number of worthy but unfunded projects greatly exceeded the number of projects receiving awards; for example, the Air Force deemed 1,174 proposals worthy of award in fiscal year 1993 but funded only 470. In general, the data showed substantial reserves of projects deemed worthy of funding but receiving no award. In addition, SBIR program officials in the five major agencies stated that, in their view, the quality of research proposals was being maintained or

even improved. They cited the level of competitiveness and the large reserves of unfunded but worthy projects as the principal reasons for their view.

Among the five major agencies, NIH was the only one in which we found some cause for concern about the expansion of the program in fiscal year 1993. We found that the National Cancer Institute (NCI), which accounted for about 18 percent of the program at NIH, funded nearly all of the projects deemed worthy during fiscal year 1993. Top NCI officials expressed concern about the quality of research proposals in relation to the funds available in fiscal year 1993 but concluded that all of the projects selected should have been funded. NCI data for fiscal year 1994 showed a lower ratio of awards to proposals and a large number of unfunded but worthy proposals, suggesting that the difficulty experienced in fiscal year 1993 was not recurring.

THE TECHNICAL ASSISTANCE PROVISION IS NOT BEING IMPLEMENTED

No agency has implemented the technical assistance provision, and future implementation remains uncertain. Agency officials were critical of the provision for several reasons. First, they noted that it calls for the use of program funds, thereby reducing the number of awards they can make. In this respect, they view the provision as competing for the same funds that could be used in making additional awards.

Second, they see little need for technical assistance when projects are selected primarily for their technical merit. NASA's SBIR director, for example, pointed out that the largest single portion (40 percent) of a company's score in the selection process is based on technical merit. In his view, a company would be eliminated from the competition if any indications of technical inadequacies appeared.

Third, they believe implementation would impose a significant administrative burden arising from case-by-case considerations of company requests for support. SBA officials told us that implementation would lead to difficulties because there would be a need for review and approval of each small award ($4,000 or less) to each awardee that requested funding.

Fourth, they feel that specific proposed technical assistance requirements, such as a single vendor of technical assistance for each agency, are unrealistic because one vendor could not respond adequately to potentially hundreds of requests.

Program officials, however, have taken steps, independent of the provision, to provide assistance with commercialization. For example, DOE has provided special training sessions and conferences on commercialization for its awardees. DOE's SBIR manager told us that the second training session, conducted in 1991, has proven very successful. He noted that 43 percent of the companies participating in the session have received additional, non-SBIR funding, which has totaled $14 million as of July 1994 with a further $24 million expected over the next 3 to 5 years. He also believes that the sessions in 1993 and 1994 will prove successful but indicated that more time is needed for results to emerge.

In DOD's commercialization efforts, we found several new initiatives. The most striking was the special strategy adopted by the Navy's program manager for emphasizing the importance of commercialization. Starting in 1994, a company must have a plan for commercialization in order to receive the last 20 percent of each phase II award. Because funding for Navy SBIR phase II awards is set at about $750,000, the 20 percent holdback amounts to $150,000 and is encouraging companies to take commercialization seriously.

DUPLICATE FUNDING HAS BECOME A PROBLEM

Duplicate funding of similar proposals submitted to more than one agency has become a problem. Agency officials informed us that they are investigating some companies that allegedly received duplicate funding by multiple federal agencies for substantially identical proposals. A few cases are under review by the Department of Justice for possible criminal and civil prosecution. In one case, the Department of Justice has filed an action for trebled damages of $4.2 million under the False Claims Act. The complaint alleges that the SBIR company had fraudulently obtained approximately $1.4 million in duplicate funding from NSF, NASA, and various DOD agencies. The complaint also alleges that the company "recycled" 11 research ideas 40 times in duplicate submissions.

In further work on this problem during 1994, agency officials found evidence of other companies receiving duplicate funding. According to agency officials, a few companies received funding for the same proposals twice, three times, and even five times before agencies became aware of the duplication. In these cases, the companies also submitted equivalent reports at the end of their Phase I work without informing agencies of the duplicative research.

Several factors are contributing to the problem of duplicate funding. First, companies proposing projects have not identified identical proposals they have made to other agencies, thereby fraudulently evading the certification procedure that requires them to provide such information. SBA's 1993 policy directive and individual SBIR agencies require proposers to indicate the name and address of the agencies to which duplicate or similar proposals were made and to identify by subject the projects for which the proposal was submitted and the dates submitted.

In response to this evasion of the certification requirement, officials in NSF's Office of Inspector General told us that they were concerned about the need for more complete certification procedures. Such procedures would require applicants to certify, under criminal penalties for perjury, exactly what, if any, applications for similar research were pending in other agencies. These officials also recommended that the existing NSF certification form should be revised and strengthened. The agency agreed and implemented this recommendation. SBA's Assistant Administrator told us that the forms in use in other agencies could also be reviewed and, if necessary, revised and strengthened to address potential problems with certification.

Second, the lack of definitions and guidelines regarding key terms such as "similar" research has resulted in disagreement about what constitutes duplicate research. SBA's policy directive and individual agency solicitations do not define key terms and thus provide no guidance in avoiding the risk of duplicate funding. According to an SBA official, certain key terms--such as "duplicate," "similar," "equivalent," "overlapping," "substantially similar," and "proposals of similar content"--occur in the solicitations. However, little effort has been made to bring them into the context of scientific research and give them a more specific meaning.

In fact, the vagueness of key terms can lead to differences of opinion by federal and company officials. In one case, NASA officials became concerned that a company, which received Phase I and II awards from NASA and the Army for potentially similar research, did not inform NASA of the Army awards. The company contended that it did not inform NASA of the Army awards because, in its view, the research was not duplicative. NASA disagreed and rescinded the company's Phase II award.

Third, agencies have lacked interagency access to and exchange of current information about recent awards that might help to prevent or detect duplicate awards. At present, SBA maintains an SBIR program database that it uses primarily to produce its annual report to the Congress regarding the program. However, the information has a "time lag" of about 9 months because it is first processed by each agency and then forwarded to SBA. Individual agencies maintain records of recent awards, but this information is generally not available to other agencies. If an official in one agency wants to obtain information from another agency about a specific proposal or company, such information is available only through personal contacts and conversations.

Some program officials believe that the present methods may not be adequate for detecting duplication when dealing with 20,000 proposals annually. Officials at NASA and SBA have led the initial efforts to improve interagency access to and exchange of current information. An SBA official told us that the new approach will overcome the time lag regarding information on current awards and help in avoiding duplicate funding. In general, however, efforts to provide interagency access to current information were at an early stage of planning at the time of our review. Minimal documentation existed to describe the proposed approach.

Nevertheless, officials in several agencies told us that, in the context of the 20,000 or more proposals now being submitted annually, the problem is limited to relatively few cases of fraud while the instances of genuine confusion about what constitutes duplication may be somewhat more frequent. However, they agreed that the problem should be addressed and that recommendations would be helpful in resolving it.

Accordingly, our March 1995 report recommended that the Administrator, SBA, take steps to (1) determine whether the certification form that accompanies SBIR proposals needs to be

improved and, if so, take the necessary steps to revise it, (2) develop substantive definitions and guidelines for agencies and companies regarding "duplicate" research, and (3) provide interagency access to current information regarding recent SBIR awards.

In summary, to date, the quality of research proposals appears to have kept pace with the program's expansion. However, it is somewhat early to make a conclusive judgment about the long-term quality of research proposals because the major increases in program funding have not yet occurred. None of the five major agencies has implemented the technical assistance provision, and future implementation remains uncertain. Duplicate funding has become a problem. We have made three recommendations to SBA that would help in addressing this issue.

We will conduct a final review of the program in a report mandated by the reauthorization legislation. That report is scheduled for completion in October 1997.

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This concludes my statement. I would be happy to respond to any questions you or Members of the Subcommittee may have.

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