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## A Note Concerning Small Business Development

The federal government has over the years established several significant programs to stimulate economic development, with the goals of expanding employment opportunities, increasing productivity and profitability of business, and stimulating private investment in local communities. One such program is the Small Business Innovation Research (SBIR) program, established through Public Law 97-219, the Small Business Innovation Development Act of 1982. The dual purposes of the SBIR program are to encourage small the growth of the nation's small, high-tech, innovative businesses, while at the same time meeting the research and development (R&D) needs of the federal government. The SBIR program is funded by requiring 11 federal research agencies (i.e., the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, and Transportation, and the Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation) that award \$100 million or more to set aside 2.5% of their research budget for SBIR awards. The most recent reauthorization of the program has made available more than \$1 billion for SBIR awards.

The SBIR program provides funding to small businesses through both grants and contracts with request for proposals (RFPs) and requests for applications (RFAs) issued periodically by the participating federal agencies. The RFP or RFA guidelines specify the types of R&D efforts that are eligible for support and the eligibility requirements for those seeking funding. Proposals and applications are reviewed based on small business qualification, degree of innovation, technical merit, and future market potential.

The three phases of the SBIR program are designed to increase the likelihood of eventual commercialization of technological innovations that may result from federally R&D grants and contracts to small businesses:

- Phase I provides startup funding of up to \$100,000 for approximately 6 months to 1 year for proposals that seek to establish the merit and feasibility of a research concept that may lead to a technology or product with commercial potential. The concept may be one that was developed by a small business, or one that was developed at a university or research institution and licensed to a small business. Many of the small businesses that receive Phase I SBIR awards are, in fact, companies that have been created by a faculty member or a student and spun off from the university. During this phase, the quality of the performance of the small business is also evaluated for potential continuation funding through a Phase II SBIR award.
- Phase II provides federal funds of up to \$750,000 for as many as 2 years for the expansion of R&D efforts initiated as Phase I proof-of-concept projects. Only small businesses that received Phase I funding are eligible for a Phase II award. Preference is given to products or technologies with high commercialization potential.

- Phase III, which does not include federal funding, the small business must pursue non-federal support in the private sector for the commercialization of a product or technology derived from a Phase I or Phase II project; that is, to move the innovation from the laboratory to the marketplace.

Another federally funded economic development program aimed at small businesses is the Small Business Technology Transfer (STTR) program, established by Public Law 107-50 of 2001. Unlike the SBIR program, the STTR program requires the partnership of a nonprofit research institution with a small business. The principal investigator for the awards can be from either the small business or the research institution. The small business and the nonprofit research institution must each meet certain eligibility criteria. At present, seven federal agencies support the STTR program; namely, the Departments of Defense, Energy, Education, Health and Human Services, and Homeland Security, and the National Aeronautics and Space Administration, and the National Science Foundation. Total funding is in excess of \$1 billion, with sponsoring federal agencies setting aside 0.3% of their research budgets for this program. The STTR program has the same three phases as the SBIR program.

The U.S. Small Business Administration (SBA) Office of Technology administers both the SBIR and the STTR programs. Additional information about these programs is available from the Web at <http://www.sbir.gov/about/index.htm>. The SBA publishes solicitation information from all participating agencies quarterly in a Pre-Solicitation Announcement (PSA), which provides topics and anticipated release and closing dates for each agency's solicitations. For complete information about upcoming grant and contract solicitations, please see the RFA or RFP for the participating federal agency, for example, the NSF solicitations are available at the Industrial Innovation and Partnerships (IIP) site: <http://www.nsf.gov/div/index.jsp?org=IIP>. The SBA works closely with a designated state agency for the coordination of both economic development programs. In Massachusetts, that agency is the Massachusetts Technology Development Corporation. A number of federal agencies as well as state governments periodically offer proposal writing workshops and conferences to increase awareness of and participation in the SBIR/STTR programs and provide opportunities to meet fellow entrepreneurs with similar interests.

Why would a university researcher even consider looking at SBIR or STTR solicitations for possible funding opportunities? Among the reasons are the following:

- The STTR program requires that at least 30% of a Phase I award goes to a research institution, and up to 60% of the award may go to the research institution and/or other subcontractors of the small business. For typical Phase I awards, this could be \$30K to \$60K over six months, which can fund some very useful research work.
- For SBIR, the value can be nearly as high as for STTR. Up to 1/3 of a Phase I SBIR (i.e. \$33K typically) may be subcontracted, such as to a university. Since the SBIR program, as a whole is approximately ten times the size of the STTR program, there are considerably more opportunities to get funded.
- Companies are often motivated to subcontract to a university for an SBIR proposal, to gain the advantage of research facilities, credible research expertise, and even proposal writing expertise. Experts have noted that the single greatest factor for success in an SBIR proposal is the participation of a research institution, because of the factors noted above.
- Federal agencies have been placing increasing emphasis on the importance of industry

collaboration when awarding university research grants. Establishing such collaborations through SBIR/STTR awards can significantly enhance your potential for winning other research grants.

- New technologies developed by university researchers, or jointly developed by the company and the university researcher can result in long-term royalty income to the inventors. Consider this as an outlet for creative ideas that can make a real impact in the world, as well as a potential source of additional future income.
- SBIR and STTR research topics range from a narrow, specific focus (often the case with DoD) to very broad areas of research interests (e.g. for NIH). The diversity of topics and subject matter may surprise you, and most researchers can easily find a topic of interest to them.

The Venture Development Center in the Office of the Vice Provost for Research will be happy to advise UMass Boston faculty and staff members as they consider SBIR/STTR funding.

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