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National Science Foundation (NSF) SBIR Program Basics

The National Science Foundation (NSF) Small Business Innovation Research (SBIR) program offers entrepreneurs an opportunity to acquire seed grants, a Phase I award and a Phase II award, for the development of innovative, marketable, problem-solving healthcare or medical solutions. Phase I funding is used for six months to demonstrate the feasibility of a proposed technology concept. Phase II funding is used for two years to produce a product prototype.



Through a competitive proposal development and submission process entrepreneurs are awarded the money. By using a company's business plan, market research & analysis findings and scientific reports/studies, applicants apply the necessary information to prepare a winning SBIR Phase I proposal. A Phase II proposal includes the same information sources plus the results from the successfully completed Phase I feasibility study.



After completing both funding phases, the company is expected to commercialize its new healthcare technology or medical device. The company, in particular, uses its business plan to enter the new technology into a designated market and offer it to identified potential buyers, such as hospitals, individuals, health systems, health insurers, pharmaceutical companies or large employers. On the other hand, the company can seek additional money from private sector investors, e.g., venture capitalists, business angels or corporate venture capitalists, to help manufacture, promote and sell the new technology solution.



NSF SBIR Phase I and Phase II Funding Rounds

<u>Funding Rounds</u>	<u>Funding Amount</u>	<u>Use of Funds</u>
Phase I	\$225,000	Money is used, for six months, to conduct research to determine whether or not the proposed technology concept is actually feasible.
Phase II	\$750,000	Money is used, for two years, to produce a technology prototype.



NSF SBIR Program Eligibility

- ◎ Small companies organized for profit, with a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the United States economy through payment of taxes or use of American products, materials or labor.
- ◎ Small companies formed as an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture, there must be less than 50 percent participation by foreign business entities in the joint venture.
- ◎ Small companies that have no more than 500 employees.

NSF SBIR Program Benefits

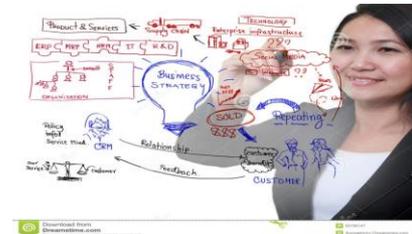
▶ Thirty percent (**30%**) of Phase I and Phase II grant budgets can be used to hire experienced personnel or experts needed to augment the project team.



▶ Small companies can earn a **7%** profit off the proposed project budgets.



▶ Small companies retain the Intellectual Property (IP) rights from their inventions.



▶ Awarded companies are attractive candidates for private capital investors, e.g., Venture Capital, Business Angels, and Corporate Venture Capital.



NSF SBIR New Health Technology Developing Funding Process



Start Early: NSF SBIR Phase I proposal submission deadline mid – December 2018

An Illustration : How The NSF SBIR Program Funding Process Works



Health Tech Startup



NSF SBIR Grants



New EHR Software



Patient Application

(1) Based on its own background and market research findings, the health technology startup identifies an opportunity to develop data-mining software for Electronic Health Records (EHRs). The proposed technology solution is intended to help physician practices better use their EHRs as a clinical decision tool and improve outcomes for senior diabetic patients.

(2) The startup researched NSF SBIR's awards database and reviewed past request for proposals (RFPs) about the agency's interest in funding EHR solutions. The research revealed that NSF SBIR's Digital Health (DH) technology topic area offered funding to develop EHR solutions.

(3) The startup prepared a two page executive summary that included the identified problem, the proposed solution and its potential commercial viability, the targeted technology users, the industry's competitors, and the firm's proposed research & development approach. Next the small firm sent the executive summary to the NSF SBIR Digital Health program director for review.

(4) Following discussions with the NSF SBIR Digital Health program director, the startup used market research, technical & scientific studies and its business strategy to prepare a winning NSF SBIR Phase I funding proposal. The successful completion of the Phase I project enabled the company to win Phase II money for the development of a technology prototype.

(5) After winning two rounds of NSF SBIR program grants to develop the data-mining software, the startup sold the technology solution worldwide to physician practices providing health services to senior diabetic patients. The startup, moreover, owned a new market-driven novel healthcare IT solution that helped grow its business.

Using A Business Model To Prepare A NSF SBIR Phase I proposal

Business Model

- Designed to identify a problem, technology solution, revenue sources, targeted customers, competitors, products, resources, partnerships, business team, and operational expenses.
- Lays out a step-by-step plan of action for profitably operating the business in a specific marketplace.
- Elements: Identified problem, proposed concept, identified customers, value proposition, revenue model, market opportunity, channel, competitive advantage, key activities, and key resources.

NSF SBIR Phase I proposal

- Key Content: Identified healthcare/medical problem, proposed solution, targeted customers, competitors, market size & opportunity, resources, research team, research & development process, partnerships.
- Ninety (90%) of the business model information/content can be used to prepare a NSF SBIR Phase I funding proposal.

Use Your Business Model Information To Prepare NSF Phase I Proposals

Business Model Information

- Describes Healthcare/Medical Problem
- Identify Patients/Targeted Audience Impacted
- Proposed Technology: Problem Solver
- Market Opportunity: Size & Competition.
- Research & Development: Technology Development Process
- Team: Management, Staff & Research Personnel

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Ninety (90%) of the business model information/content can be used to prepare a NSF SBIR Phase I funding proposal.

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NSF SBIR Phase I Proposal

- Identify Healthcare/Medical Problem
- Patient Population/Targeted Audience Impacted
- Innovative Proposed Technology Solution
- Market Opportunity
- Research & Development Process
- Research Team

Preparing Winning NSF SBIR Phase I Funding Proposals

Winning NSF SBIR funding Phase I and Phase II proposals incorporate **five** things: Identified problem, defined technology concept, reliable market and scientific research information, realistic business case and qualified team.

Identified Problem The ideal identified problem affects a significant number of individuals, including patients, with few existing options to solve it. Moreover, the problem is either linked to lives being lost/injured, high costs of providing healthcare services, burden on the economy, or negative treatment outcomes.

Defined Technology Concept A defined technology concept includes a purpose, unique features, dimensions and potential benefits. It also focuses on solving an unmet medical, healthcare or public health problem. More importantly, the technology concept, as an alternative to existing solutions, discusses how it intends to save lives, reduce healthcare costs, or improve patient outcomes.

Reliable Market & Scientific Research Information Market research data and scientific studies are used to substantiate the development of the proposed technology concept. For example, the market research findings are needed to show the potential commercial viability of the proposed solution. The scientific studies support the company's research & development (R&D) testing approach.

Realistic Business Case Information from the company's business plan is used to illustrate how the new health technology will be introduced, marketed and sold in a designed marketplace.

Qualified Team The team includes individuals with outstanding qualifications, professional experiences and appropriate skills necessary to implement the research & development process and produce a prototype.

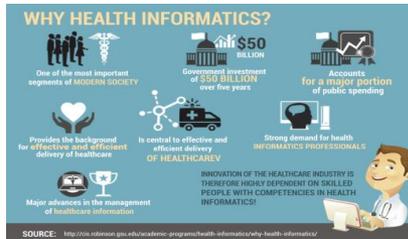
NSF SBIR Phase I Proposal Development Strategy

<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>
Define and detail proposed health technology concept.	Contact /forward project two page executive summary to NSF SBIR program director.	Contact potential research team members and gather their biographical information.	Complete NSF SBIR small business registration.	
Conduct market and information research to support proposed health technology concept.	Follow-up with NSF program director about proposed project.	Secure work facility commitment, through written agreement if necessary.	Use NSF SBIR checklist to review/revise Phase I proposal draft.	
Establish business case for proposed health technology concept using market research.	Start identifying potential research team members, materials & equipment, and work facility.	Complete 1s draft NSF SBIR Phase I proposal draft.	Send 2 nd NSF SBIR Phase proposal draft to reviewers.	NSF SBIR Phase I Proposal Deadline
Identify accepted research and development (R&D) approach that will be used.	Identify and contact two outside proposal reviewers.	Send NSF SBIR Phase I proposal draft to reviewers.	Review/revise proposal draft based on comments.	
Review NSF SBIR proposal development process. Identify designated NSF SBIR program director.	Start drafting NSF Phase I proposal using collected research information, R&D approach and suggestions from NSF program director.	Revise NSF SBIR Phase I draft based on comments and suggestion from proposal reviewers.	Finalize NSF SBIR Phase I proposal.	
Start NSF SBIR small business registration process.	Continue NSF SBIR small business registration process.		Submit NSF SBIR Phase I proposal.	
Start drafting two page executive summary of proposed technology concept.				

NSF SBIR New Health Technology Development Opportunities

Healthcare technology solutions and medical devices developed with NSF SBIR grants are expected to be sold in the \$3 trillion dollars U.S. healthcare market. In fact, entrepreneurs and small emerging firms have a chance to produce novel health technology solutions in a variety of industry sectors like:

Health Informatics



Mobile Health



Social Robotics



Telemedicine/Telehealth



Internet Of Things



Wireless



NSF SBIR Health Technology Development Request For Proposals (RFPs)

The NSF SBIR program issues broad request for proposals (RFPs) allowing health technology entrepreneurs and small businesses to self describe a specific problem and propose a creative, marketable, problem solving solution associated with the RFP. Below are some new health technology development RFPs currently offered by the NSF SBIR program.

Digital Health

The Digital Health subtopics aim to support the early-stage development of novel devices, components, systems, algorithms, networks, applications, or services that will enable the transformation of healthcare from reactive, hospital-centered, and indemnity-based to proactive, person-centered, preventive, and cost-efficient. The Digital Health subtopics are not aimed at supporting clinical trials, the clinical validation of information technologies, or medical devices or studies performed primarily for regulatory purposes. Limited studies with human subjects may be acceptable to the extent that they are performed in support of feasibility, proof-of-concept studies of early-stage technologies. Proposals that request support for clinical studies will be deemed non-compliant with the SBIR/STTR solicitations and may be returned without review. **Key Subtopics:** Business Models for User-Centered Healthcare, Digital Health Information Infrastructure and From Data to Decisions and Interoperability of Health Record Systems, Medical Sensors, Devices and Robotics.

Start Early: NSF SBIR Phase I proposal submission deadline is mid – June 2019

NSF SBIR Health Technology Development Request For Proposals (RFPs)

Pre-National Science Foundation (NSF) Small Business Innovation Research (SBIR) Phase I Proposal Development Audits

The audit consist of a comprehensive review of the potential NSF SBIR applicant's proposal development strategy. More importantly, it is designed to highlight the approach's strengths and weakness before a preparing a winning funding document.

Using a questionnaire to determine the focus of your proposed project, the audit helps to determine if the company possess the necessary aims and information needed to prepare a responding Phase I proposal.

The audit will cover a review of the following areas:

- Identified healthcare or medical problem
- Proposed technology solutions and existing competing technology solutions
- Patient populations affected by the identified problem
- Targeted technology users and buyers
- Supportive market and scientific/technology research information/data
- Appropriate research & development approach
- Experienced, skilled research team
- External supporters who can endorse the project.

Contact Mr. Williams at Darrell@eightenventures.com or (305) 322-2443 to sign up for the free pre-proposal development audit.

Start Early: NSF SBIR Phase I proposal submission deadline is mid – June 2019

About Eighteen Ventures

Based in the Miami-Fort Lauderdale, FL metro area, Eighteen Ventures (EV) is a small business development consulting firm offering services nationwide. In particular, we help health technology entrepreneurs, such as engineers, physicians, nurses, researchers, inventors, technologists, scientists and experienced healthcare industry professionals, start and build successful small businesses. We also help health technology entrepreneurs and startups organize and prepare National Science Foundation (NSF) and National Institutes of Health (NIH) Small Business Innovative Research (SBIR) grant funding proposals for the production of innovative, marketable, problem solving healthcare or medical solutions.

Eighteen Ventures' consulting services are designed to help health technology entrepreneurs achieve three things:

(1) Establish and build prosperous small businesses.

(2) Prepare responsive, successful Small Business Innovation Research (SBIR) Phase I proposals and win seed grants for the development of innovative, marketable, problem solving healthcare technologies or medical devices.

(3) Attract and acquire private investment growth capital from Venture Capitalists, Business Angels and Corporate Venture Capitalists.

Mr. Darrell Williams, Eighteen Ventures' founder President and CEO, is an experienced small business development consultant, who has been involved in the Small Business Innovation Research (SBIR) program since 1999.

Mr. Williams can be reached at Darrell@eighteenventures.com or (305) 322-2443. Contact him today to learn how we can help you successfully win NSF SBIR new health technology development funding.



Health Technology Entrepreneur

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Innovative Health Technology

We help health technology entrepreneurs acquire and use SBIR grants to develop innovative healthcare technologies