DoD/Navy
SBIR/STTR Overview

Small Business Innovation Research (SBIR)
Small Business Technology Transfer (STTR)

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Report Documentation Page

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Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
The SBIR Process

PHASE I
Feasibility Research

PHASE II
Research towards Prototype

PHASE III
Product Development for Gov’t or Commercial Market

Social and Government Needs

Private Sector Investment

Non-SBIR Government Investment

R&D Investment

Federal Investment
About $2.3B in FY10

$148 billion

$150K

$1M

Tax Revenue
# The Early Stage “Valley of Death”

<table>
<thead>
<tr>
<th>Pre-Seed</th>
<th>Seed/Start-Up</th>
<th>Early</th>
<th>Later</th>
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</thead>
<tbody>
<tr>
<td>Founders,</td>
<td><strong>SBIR AWARDS</strong> / Angel Investors / Angel Groups</td>
<td><strong>SBIR AWARDS</strong> / Angel Investors / Angel Groups</td>
<td><strong>SBIR AWARDS</strong> / Angel Investors / Angel Groups</td>
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<tr>
<td>Friends,</td>
<td></td>
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<tr>
<td>Family &amp;</td>
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<td></td>
</tr>
<tr>
<td>Fools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$25,000</td>
<td>$100,000</td>
<td>$1 to 2 million</td>
<td>$5 million</td>
</tr>
</tbody>
</table>

**Valley of Death**

Funding Gap

*Adapted from: Richard Bendis and Ethan Blyer, “Creating a National Innovation Framework, Science Progress, 2009*

*Average Venture Investment is $8.3 million*
Why would a Small Business Want to Participate in the SBIR/STTR Program?

- Largest source early stage R&D funds for Small Business – Fed wide ~$2.5B  Navy >$325M
- No dilution of ownership; owners retain control and retains data rights for 4 years or more (5 for DoD)
- Follow-on awards are contracted non-competitively
- Strong commercialization support
- No repayment is required
  - Government recoupment is through the tax system
- Certification effect draws in additional investment
  - Signal to private investors of technological validity and commercial promise of the innovation
SBIR’s Advantages for Government

- A low-cost technological probe
  - Enables government to explore more cheaply ideas that may hold promise
  - Identifies dead-ends before substantial investments are made

- Quick reaction capability
  - Solicitations topics can respond rapidly to urgent national needs
  - Anthrax attacks led NIH to seek and get innovative bio-defense technologies

- Diversifies the Government Supplier-base
  - Brings in competition, low-cost solutions, new approaches to address mission needs
Over Two Decades of Consolidation:
What was over 100 “name plate” primes in the 80s is now five firms...

Small Business Winners

- Small hi-tech firms from across the country
- Many are firms 0 to 3 years old and SBIR funding first major source of funds
What is unique about the DoD SBIR/STTR Program?

- Focused on the WARFIGHTER
- BIGGEST of the Agencies
- Both an investor and a small business ADVOCATE to the customer
DoD SBIR/STTR Investment
Key Technology Areas

Source: SBIR & STTR solicitations, FY99-FY09
The SBIR and STTR programs are executed by 12 and 6 participating DoD Components, respectively.

### SBIR + STTR Programs
- Navy
- Air Force
- Army
- Missile Defense Agency
- Office of Secretary of Defense
- Defense Advanced Research Projects Agency

### SBIR Program Only
- Joint S&T Office for Chemical and Biological Defense
- Special Operations Command
- Defense Threat Reduction Agency
- Defense Logistics Agency
- Defense Microelectronics Activity
- National Geospatial Intelligence Agency
Historical SBIR Conversion Rates, by Program Phase

Based on all Phase I and Phase II contracts derived from 1996-2005 solicitations. Commercialization data taken from January 2010 DoD SBIR Commercialization Database.
Collaboration during the Solicitation Period

Topic Authors
- Q&A direct during pre-release
- Q&A electronic bulletin board (SITIS) from pre-release to close

Administrative Help Desk
- Telephone 8am-5pm EST @ 866-724-7457
- Email 24 hours a day at www.dodsbir.net/helpdesk
SBIR Award Recipient Distribution by Firm Size

Based on FY09 Annual Report; Firm Data taken from Company Commercialization Report
**SBIR Award Recipient Distribution by Prior Experience**

**Phase I**
- 1-4 Phase II Awards: 32%
- 5 or more Phase II Awards: 41%
- New SBIR Awardee: 20%
- Prior Phase I Only: 7%

**Phase II**
- 1-4 Phase II Awards: 35%
- 5 or more Phase II Awards: 43%
- No Prior Phase II Awards: 22%

Based on FY09 SBIR Annual Report Data
Two main goals of Navy SBIR/STTR Program:

• Use small business to develop innovative R&D that addresses a Navy need

• Commercialize (Phase III) that technology into a Navy platform or weapons system
## Navy by the Numbers

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Funding per FY</td>
<td>$274M</td>
<td>$328M</td>
<td>$342M</td>
</tr>
<tr>
<td>Navy SBIR Topics issued that FY</td>
<td>219</td>
<td>224</td>
<td>233</td>
</tr>
<tr>
<td>Number Of Phase I Proposals</td>
<td>2708</td>
<td>3555</td>
<td>4098</td>
</tr>
<tr>
<td>Navy Phase I Awards from FY Solicitations</td>
<td>555</td>
<td>597</td>
<td>658*</td>
</tr>
<tr>
<td>Avg time to award Navy Phase I contracts</td>
<td>4.5 mo</td>
<td>4.8 mo</td>
<td>4.3 mo*</td>
</tr>
<tr>
<td>Navy Phase II Awards during FY</td>
<td>272</td>
<td>240</td>
<td>296*</td>
</tr>
<tr>
<td>Avg time w/o funding between Phase I &amp; II</td>
<td>8.2 mo</td>
<td>7.5 mo</td>
<td>8.6 mo*</td>
</tr>
<tr>
<td># Phase II.5’s (&gt;1M) ending in FY</td>
<td>43</td>
<td>45</td>
<td>63</td>
</tr>
<tr>
<td>Navy Phase III Awards during FY</td>
<td>90</td>
<td>126</td>
<td>131</td>
</tr>
<tr>
<td>Amount of Navy Phase III Awards that FY</td>
<td>$307M</td>
<td>$362M</td>
<td>$566M</td>
</tr>
<tr>
<td>SBIR/STTR Projects presented at Forum</td>
<td>172</td>
<td>177</td>
<td>205</td>
</tr>
<tr>
<td>Attendees at Navy Opportunity Forum</td>
<td>1,252</td>
<td>1,448</td>
<td>1,367</td>
</tr>
</tbody>
</table>

* Awards still being made

On Average 1500 SBIR and 200 STTR Open Contracts to manage
Navy SBIR Organization

- Program Administered by the Office of Naval Research

- Program Participants
  - Naval Sea Systems Command (NAVSEA): Warfare Centers, PEO’s and Program Managers
  - Naval Air Systems Command (NAVAIR): Warfare Centers, PEO’s and Program Managers
  - Office of Naval Research (ONR): Science & Technology Directorates and Naval Research Laboratory
  - Space & Warfare Sys. Command (SPAWAR): Warfare Centers, PEO’s and Program Managers
  - Marine Corps Systems Command (MARCOR): Direct Reporting Program Managers
  - Naval Supply Systems Command (NAVSUP)
  - Naval Facilities Systems Command (NAVFAC)
Navy follows TECHNOLOGY PULL APPROACH

• Over 80% of Navy Topics are selected by PEO/PM/FNC office and address one of their specific needs -- not just “sponsored by”
• Topics and awards based on their R&D priorities and SBIR funding allocation. The PEO gets back 90% of their tax
• Many contracts awarded/monitored by lab employees with Acquisition Office POC involved
NAVY SBIR/STTR Award Structure and Phase II.5 — Transition Strategies

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Feasibility</th>
<th>Technology Development and Prototype Demo.</th>
<th>Prototype Testing &amp; Evaluation Technology Demonstration &amp; Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
</tr>
<tr>
<td></td>
<td>Year 4</td>
<td>Year 5</td>
<td>Year 6</td>
</tr>
</tbody>
</table>

**Feasibility**
- **Year 1**: 6 mo.  
- **Year 2**: 6 mo.  
- **Base up to $750K**:  
- **Some Require TTP**:  
- **Option 6 mo.**: $80k  
- **Option 6 mo.**: $70k

**Technology Development and Prototype Demo.**
- **Phase 1**: 6 mo.  
- **Phase 2**: 18-24 mo.  
- **Base up to $750K**:  
- **Some Require TTP**:  
- **Option 6 mo.**: $80k  
- **Option 6 mo.**: $70k

**Prototype Testing & Evaluation Technology Demonstration & Validation**
- **Opt. **~ 9 mo.**:  
- **$≤ 250k SBIR**:  
- **Enhancement**:  
- **~ 12 mo.**:  
- **$≤ 750k SBIR**:  
- **Cont. Dev. 12 – 18 mo.**:  
- **$≤ 750k SBIR**:  
- **TP (Transition Project)***:  
- **≤ 2 yr.**:  
- **$≤ 1.50M SBIR**:  
- **TTA Required**:  
- **$≤ 1.50M SBIR**:  
- **TTA Required**:  
- **$≤ 1.5M SBIR**:  
- **TTA Required**:  
- **$≤ 2.65M SBIR**:  
- **TTA Required**:  

**SBIR FUNDS -**
- **NTE $150K**  
- **NTE $1M**  
- **NTE $1.5M**  
- **NTE $2.65M**

**CONTRACT TYPE -**
- **FFP Contract**  
- **CPFF or FFP Contract**  
- **CPFF or FFP Contract**

** Any**

**TRL -**
- **0-3**  
- **2-5**  
- **4 → 7**  
- **6-9**
Upcoming Navy SBIR/STTR solicitations

The Navy SBIR/STTR solicitations are released as part of the DoD SBIR/STTR solicitation process. On average, the Navy and DoD release 3 SBIR solicitations per fiscal year. The Navy STTR program generally participates in only 1 solicitation per year, normally released in January.
**Tips for Succeeding w/Navy**

**Just Getting Started?**
- Research topics consistent with your business strategy. Current and past solicitations identify Navy technology needs. Know Navy structure.
- Submit proposals for solicitations your company can solve. Prepare to be innovative.

**Already have a Phase I?**
- Know your target platform/system for insertion.
- Build strategic partnerships (Primes, Universities, Acquisition Managers, Program Managers).
- Plan commercialization path early with TPOC.
How To Search Current SBIR/STTR Solicitations

Federal Wide
www.zyn.com/sbir

DoD Only
www.dodsbir.net

Good for get list of all topic titles but ZYN is better as topic search tool
Benthic Microbial Fuel Cells Engineered for High Power Density

Summary: Benthic Microbial Fuel Cells Engineered for High Power Density. This will be accomplished by selective preemptive colonization of electrodes with naturally-derived marine or sedimentary microbial populations that most effectively generate electrical current. Anticipated benefits of the benthic fuel cell-based power device as compared to existing marine power sources, such as sea water batteries...

Phase: I
Award Start Date: 06/23/2008
Award End Date: 07/30/2009
Source: Navy Awards

High Power Density Sediment Microbial Fuel Cell for Powering Seafloor Sensors

Summary: High Power Density Sediment Microbial Fuel Cell for Powering Seafloor Sensors. To reach the Navy’s target power density for sedimentary fuel cells a dramatic improvement in microbial fuel cell electrode current density must be achieved. Lynntech, in collaboration with Texas A&M University, proposes to solve these problems utilizing novel materials and unique biomimetic electrode designs to great...

Phase: I
Award Start Date: 06/23/2008
Award End Date: 04/24/2009
Source: Navy Awards

Rapid Bioelectrochemical Monitoring Shipboard Effluent

Summary: Rapid Bioelectrochemical Monitoring Shipboard Effluent. To address the Navy’s need for real time monitoring of organics in wastewater treatment systems, Lynntech proposes a microbial fuel cell-based sensor for monitoring Biological Oxygen Demand (BOD) of shipboard effluents. By providing near real-time feedback about the performance of marine sanitation devices, crew members can adjust the...
Questions ?