Small Business Innovation Research Program (SBIR) Mission

Supporting scientific excellence and technological innovation through the investment of federal research funds in critical American priorities to build a strong national economy...

one small business at a time.
SBIR Program Description

• Set-aside program for small business concerns to engage in federal R&D -- with potential for commercialization
• 2.5% of the extramural R&D Budget of an Executive Agency or Military Department
Why SBIR????

Small Business Innovation Development Act of 1982

Congress designated 4 major goals:

• Stimulate technological innovation

• Use small business to meet federal R&D needs

• Foster and encourage participation by minorities and disadvantaged persons in technological innovation

• Increase private-sector commercialization innovations derived from federal R&D
2000 Reauthorization

Major Provisions of Public Law 106-554; Signed 12/21/00

• Program Extension until 9/30/2008

• Output and Outcome Data
  ✓ Public Database: **basic award information**
  ✓ Government Database: **program evaluation**
    ➢ Phase II awardees -- e.g., new product sale revenues; other investment funding sources
SBIR – A Three Phase Program

PHASE I
• Feasibility Study
• $100K (in general) and 6 month effort

PHASE II
• Full Research/R&D
• $750K and 24 month effort
• Commercialization plan required

PHASE III
• Commercialization Stage
• Use of non-SBIR Funds
SBIR Program: Eligibility Checkpoints

- Organized for-profit U.S. business
- 500 employees or fewer, including affiliates
- PI’s primary employment must be with the small business concern at the time of award and for the duration of the project period
- At least 51% U.S.- owned by individuals and independently operated or at least 51% owned and controlled by another (one) for-profit business concern that is at least 51% owned and controlled by one or more individuals
SBIR Program Eligibility: Ownership and Control

Got questions?

- Contact the SBA Size Specialists
- Request an eligibility determination

http://www.sba.gov/size/indexcontacts.html
Performance of R&D Activities

“All research/R&D must be performed in its entirety in the U.S.”

- Rare cases to conduct testing of specific patient populations outside U.S. is allowable
- Travel to scientific meeting in foreign country is allowable
- Foreign consultants/collaborators allowable, but must perform consulting in U.S.
Fee/Profit

Up to 7% of total direct and F&A costs may be requested for fee

- Must be REQUESTED/JUSTIFIED in application/proposal
- Only SBC eligible; no contracts, consortium or other third party are eligible for fee
- Not direct or indirect cost

*DISCUSS WITH CONTRACTING OFFICE*
Agency SBIR Differences

- Number and Timing of Solicitations
- R&D Topic Areas -- (Broad vs. Focused)
- Dollar Amount of Award (Phase I and II)
- Proposal Preparation Instructions
- Financial details (e.g., Indirect Cost Rates, Gap Funding)
- Receipt Dates
- Proposal Review Process
- Proposal Success Rates
- Type of Award (Contract or Grant)
<table>
<thead>
<tr>
<th>Award Type Contract Grant</th>
<th>DOD</th>
<th>NASA</th>
<th>DOT</th>
<th>EPA</th>
<th>DOE</th>
<th>DHS</th>
<th>DOC</th>
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<tr>
<th>Award Amount Phase I</th>
<th>70K-100K &lt;sup&gt;a&lt;/sup&gt; Options &lt;sup&gt;b&lt;/sup&gt;</th>
<th>70K SBIR 100K STTR</th>
<th>100K</th>
<th>70K</th>
<th>100K 9 mos</th>
<th>100K</th>
<th>150K &lt;sup&gt;d&lt;/sup&gt;</th>
<th>75k</th>
<th>100K</th>
<th>80K</th>
<th>100K</th>
<th>100k &lt;sup&gt;b&lt;/sup&gt;</th>
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<tr>
<td>Award Amount Phase II</td>
<td>750K</td>
<td>600K</td>
<td>720K</td>
<td>225K</td>
<td>750K</td>
<td>750K</td>
<td>1M &lt;sup&gt;d&lt;/sup&gt;</td>
<td>300k</td>
<td>500K</td>
<td>325K</td>
<td>750K</td>
<td>750K &lt;sup&gt;b&lt;/sup&gt;</td>
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| Review Process             | I   | I    | I   | I   | I   | E   | I   | I   | E   | E   | I   | E   |

| Research Topics            | S   | S    | S   | S   | S   | S   | S   | S   | B   | B   | S   | B   |

| Gap Funding                | Y   | N    | N   | N   | N   | Y   | N   | N   | Y   | Y   | N   | Y   |

| Communication              | R   | R    | R   | R   | R   | R   | R   | R   | R   | O   | O   | O   |

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**Agency Differences**

ALWAYS CHECK WITH AGENCIES

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**Legends**

- **C** - Contract
- **G** - Grant
- **I** - Internal Review
- **E** - External Review
- **S** - Specific
- **B** - Broad
- **R** - Restricted
- **O** - Open

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<sup>a</sup> Varies among DOD subcomponents.

<sup>b</sup> Deviations permitted with justification

<sup>c</sup> Some agencies offer Ph II options

<sup>d</sup> DHS Domestic Nuclear Detection Office
DHS… a single, integrated agency

- Directorates
  - Management
  - **Science and Technology (S&T)**
  - National Protection & Programs

- Offices
  - Policy
  - Health Affairs
  - Intelligence and Analysis
  - Operations Coordination
  - **Domestic Nuclear Detection Office (DNDO)**
  - Federal Law Enforcement Training Center

- Major Component Agencies
  - Transportation Security Administration
  - U.S. Customs and Border Protection
  - U.S. Citizenship and Immigration Services
  - U.S. Immigration and Customs Enforcement
  - U.S. Secret Service
  - Federal Emergency Management Agency
  - U.S. Coast Guard

DHS SBIR Program

• Two contributing organizations:
  • Science and Technology (S&T) Directorate
  • Domestic Nuclear Detection Office (DNDO)
    • Point of Contact: Dr. Austin Kuhn, austin.kuhn@dhs.gov

Remainder of presentation focuses on the S&T SBIR Program
<table>
<thead>
<tr>
<th>Explosives</th>
<th>Chemical/Biological</th>
<th>Command, Control, &amp; Interoperability</th>
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<td><img src="image2" alt="Chemical/Biological Image" /></td>
<td><img src="image3" alt="Command, Control, &amp; Interoperability Image" /></td>
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<td>Borders/Maritime</td>
<td>Human Factors</td>
<td>Infrastructure/Geophysical</td>
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<td><img src="image5" alt="Human Factors Image" /></td>
<td><img src="image6" alt="Infrastructure/Geophysical Image" /></td>
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</table>

FROM SCIENCE...SECURITY

FROM TECHNOLOGY...TRUST
DHS S&T SBIR Strategy

• Engage all program managers (PMs) within the divisions of the S&T Directorate

• SBIR topics are:
  – Authored by DHS PMs based on DHS need
  – Medium width (not point solutions, not open topics) and have near-term commercialization potential

• Award multiple Phase I and Phase II projects

• Reduce or eliminate the gap between Phase I and Phase II

• Provide active involvement to reach Phase III
  – Encourage teaming and collaboration
  – Involve ultimate user
SBIR/STTR Participating Agencies ($2.3B FY 07)

- DOD SBIR/STTR
- HHS SBIR/STTR
- NASA SBIR/STTR
- DOE SBIR/STTR
- NSF SBIR/STTR
- DHS SBIR
- USDA SBIR
- DOC SBIR
- ED SBIR
- EPA SBIR
- DOT SBIR

FY04 SBIR $19.6M
FY05 SBIR $23.0M
FY06 SBIR $31.8M
FY06 STTR $3.2M
FY07 SBIR $25.2M
S&T $18.4M
DNDO $6.8M
FY08 SBIR S&T ~$12.5M
# DHS S&T SBIR – A Three-Phase Program

<table>
<thead>
<tr>
<th>Phase I: Scientific and Technical Feasibility</th>
<th>SBIR</th>
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<tbody>
<tr>
<td>NTE* 6 months</td>
<td>$100K</td>
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<td></td>
<td>(33% may be outsourced)</td>
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</table>

<table>
<thead>
<tr>
<th>Phase II: Concept Development</th>
<th>SBIR</th>
</tr>
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<tbody>
<tr>
<td>NTE 24 months</td>
<td>$750K</td>
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<td>(50% may be outsourced)</td>
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</table>

<table>
<thead>
<tr>
<th>Phase III: Product Development</th>
<th>SBIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private or non-SBIR government funding</td>
<td></td>
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</tbody>
</table>

*NTE* Not To Exceed
DHS S&T SBIR Program

• Two solicitations per year
  – 15-day pre-solicitation posting and 45-day proposal period
  – Historically, approximately six – ten topics per solicitation

• Awards
  – Multiple contract awards based on evaluation, funds available, and programmatic considerations
  – Typically three Phase I awards per topic area
  – Historically, 1/3 of the Phase I awards go on to Phase II

• Electronic Processing
  – Proposals submitted/evaluated via web site at www.sbir.dhs.gov
  – Electronic notification of proposal receipt/results
  – Submission of reports via web site at www.sbir.dhs.gov
DHS S&T SBIR Evaluation Criteria

• The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution

• The qualifications of the proposed principal investigators, supporting staff, and consultants
  – Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results

• The potential for commercial (government or private sector) application and the benefits expected to accrue from this commercialization
DHS S&T SBIR Evaluation Process

• Proposals processed and made available to appropriate DHS technical program manager for evaluation and recommendation
  – PM may seek technical advice from qualified Federal Government employees and/or non-Federal Government employees

• Each proposal evaluated, on a competition basis, on its merit and relevance to the specific SBIR topic area, rather than against other proposals

• Evaluators use an adjectival rating system:
  – Excellent Strongly Recommended for Funding
  – Very good Recommended for Funding
  – Good Fund Availability
  – Fair Fund Availability
  – Unacceptable Not Recommended for Funding
## DHS SBIR Statistics

<table>
<thead>
<tr>
<th></th>
<th>FY04 $19M</th>
<th>FY05 $23M</th>
<th>FY06 $35M (includes STTR)</th>
<th>FY07 $25.2M</th>
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<tr>
<td>Solicitation</td>
<td>4.1</td>
<td>4.2</td>
<td>5.1</td>
<td>6.1</td>
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<tr>
<td>Number of Topics</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>10</td>
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<tr>
<td>1,740 Phase I Submissions</td>
<td>368</td>
<td>157</td>
<td>215</td>
<td>194</td>
</tr>
<tr>
<td>293 Phase I Awards</td>
<td>66</td>
<td>31</td>
<td>32</td>
<td>45</td>
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<tr>
<td>81 Phase II Awards</td>
<td>21</td>
<td>13</td>
<td>11</td>
<td>19</td>
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<tr>
<td>Cost Match</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>Funding Provided to Other Agency Phase II Awards</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Phase III Awards</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Award Average**

- Phase I: 17%
- Phase II: 40%
DHS SBIR Phase I
Data from 8 Competitions through FY07.2*

Total Phase I Submissions/Awards
1,740/293

* Includes STTR data
DHS SBIR Phase 1 Awards Versus Submissions by U.S. Regions*

* Includes STTR data
Who Participates in the DHS SBIR Program?

- 2% of participants have 1 employee
- 44% of participants have 2-9 employees
- 24% of participants have 10-24 employees
- 11% of participants have 25-49 employees
- 10% of participants have 50-99 employees
- 8% of participants have 100-249 employees
- 2% of participants have 250-500 employees

Number of Employees
Jump Start to Phase II

• Only for meritorious Phase I projects with clear potential for Phase II

• Invitation (at the discretion of DHS PM) for Phase II proposal submission before the completion of Phase I
  – Invitation no earlier than 2/3 of period of performance (i.e., not earlier than month 4)

• Invitation basis:
  – Performance toward Phase I technical objectives
  – Monthly and/or final reports
  – Site visits
  – Plans for Phase II

• Phase II proposals evaluated and awarded incrementally

*Decreases/eliminates funding gap between phases and accelerates development of technology*
## Jump Start Statistics

<table>
<thead>
<tr>
<th></th>
<th>FY04 $19M</th>
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<th>FY06 $35M (incl. STTR)</th>
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<td>Solicitation</td>
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<tr>
<td></td>
<td>5.1</td>
<td>5.2</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>6.2</td>
<td></td>
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<tr>
<td>Invited Phase IIs</td>
<td>30</td>
<td>18</td>
<td>15</td>
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<td>19</td>
<td>29</td>
<td>8</td>
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<tr>
<td>Selected Phase IIs</td>
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<td>17</td>
<td>19</td>
<td>TBD</td>
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<tr>
<td>Pre-Contract Approval</td>
<td>5</td>
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### Jump Start Phase II Award Average

73%
Cost Match

• Allows small businesses to seek additional funding for Phase II projects from non-SBIR sources
• Minimum of $100,000 to maximum of $500,000 of outside funding
• Matched by DHS SBIR up to $250,000 in a 1:2 ratio
• Example: $500,000 of outside funding may generate an additional $250,000
  – DHS funding = $750,000 (Phase II funding) + $250,000 (matched funds)
  – Outside funding = $500,000
  – Total project funding = $1,500,000
• Additional funds require additional scope – need to either add R&D on SBIR contract or other development and commercialization activities (or some of both)
• Cost match is a motivator for, and an indicator of, commercial potential
DHS SBIR Projects
FY08 SBIR Schedule

• 08.1
  – Pre-solicitation posted: December 3, 2007
  – Solicitation posted: December 19, 2007
  – Contracts awarded: ~April/May 2008

• 08.2 (Tentative)
  – Pre-solicitation posted: ~ April 2008
  – Proposals accepted: pre-solicitation date + 15 days
  – Proposals accepted: 45 days from solicitation date
  – Contracts awarded: ~ September 2008

Solicitations posted on:
www.fedbizopps.gov
and
www.sbir.dhs.gov
DHS SBIR S&T FY08.1 Topics

H-SB008.1-001  Assess Ability to Use Eye Tracking and Pupil Dilation to Determine Intent to Deceive

H-SB008.1-002  Miniature Chem/Bio/Explosive Sensors

H-SB008.1-003  Mapping of Long-Term Threats, Vulnerabilities, and Impacts

H-SB008.1-004  Trace Explosives Sampling for Vehicle Borne Improvised Explosives Device (VBIED)

H-SB008.1-005  Smart Sensor System
http://www.sbir.dhs.gov

DHS SBIR has opened its 8.1 Solicitation on Wednesday, December 19, 2007

**SBIR Program:**
The Department of Homeland Security (DHS), Homeland Security Advanced Research Projects Agency (HSARPA) launched the Small Business Innovation Research (SBIR) program in December 2003. Today, HSARPA administers the DHS SBIR Program for DHS’s Science and Technology (S&T) Directorate and the Domestic Nuclear Detection Office (DNDO). Our goal is to increase the participation of innovative and creative small businesses in Federal Research/Research and Development (R/R&D) programs and challenge industry to bring innovative homeland security solutions to reality.

All Federal agencies with an annual extramural R&D budget exceeding $100M are required to participate in the SBIR Program. Each fiscal year not less than 2.5 percent of the annual extramural budget is reserved for awards to small businesses for R/R&D through a three-phase process.
Useful Web Sites and DHS S&T SBIR Points of Contact

Useful Web Sites

- www.sbir.dhs.gov
- www.hsarpabaa.com
- www.dhs.gov
- www.fedbiziopps.gov
- www.sbir.gov

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