

2008 HOMELAND SECURITY
**S&T STAKEHOLDERS
CONFERENCE WEST**
PUTTING FIRST RESPONDERS FIRST

► Explosives ► Chemical & Biological ► Command, Control & Interoperability
► Borders & Maritime Security ► Human Factors ► Infrastructure & Geophysical

SCIENCE AND TECHNOLOGY



LOS ANGELES CONVENTION CENTER • LOS ANGELES, CA

JANUARY 14-17, 2008
[HTTP://EVENTS.NDIA.ORG](http://events.ndia.org)
EVENT # 0900

SBIR Tutorial

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SBIR Program Manager

Office of Innovation/HSARPA

Science and Technology Directorate

Department of Homeland Security

“Putting First Responders First”



**Homeland
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Science & Technology

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.



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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



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2000 Reauthorization

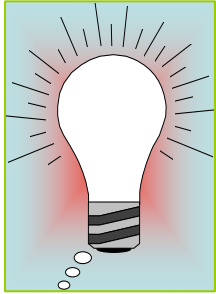
Major Provisions of Public Law 106-554; Signed 12/21/00

- Program Extension until 9/30/2008
- Output and Outcome Data
 - ✓ Public Database: **basic award information**
 - Tech-Net-- <http://technet.sba.gov>
 - ✓ Government Database: **program evaluation**
 - Phase II awardees -- e.g., new product sale revenues; other investment funding sources



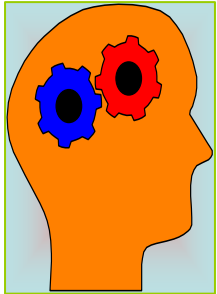
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SBIR – A Three Phase Program



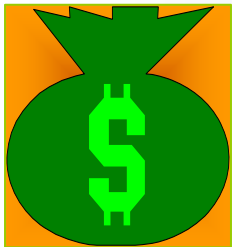
PHASE I

- **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**



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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>



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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



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Agency SBIR Differences

Read the Solicitation

- **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)**

	DOD	NASA	DOT	EPA	DOE	DHS	DOC	NSF	USDA	DoED	NIH
Award Type <i>Contract Grant</i>	C	C	C	C	G	C	C	G	G	G/C	G/C
Award Amount <i>Phase I</i>	70K-100K ^a Options ^c	70K SBIR 100K STTR	100K	70K	100K 9 mos	100K 150K ^d	75k	100K	80K	100K	100k ^b
Award Amount <i>Phase II</i>	750K	600K	720K	225K ^c	750K	750K 1M ^d	300k	500K ^c	325K	750K	750K ^b
Review Process	I	I	I	I	E	I	I	E	E	I	E
Research Topics	S	S	S	S	S	S	S	B	B	S	B
Gap Funding	Y	N	N	N	Y	N	N	Y	Y	N	Y
Communication	R	R	R	R	R	R	R	O	O	O	O

C - Contract

I - Internal Review

S - Specific

R - Restricted

G - Grant

E - External Review

B - Broad

O - Open

^a Varies among DOD subcomponents.

^b Deviations permitted with justification

^c Some agencies offer Ph II options

^d DHS Domestic Nuclear Detection Office

***Agency Differences
ALWAYS CHECK
WITH AGENCIES***

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



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Organization charts available at:

http://www.dhs.gov/xlibrary/assets/DHS_OrgChart.pdf

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





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FROM SCIENCE...SECURITY

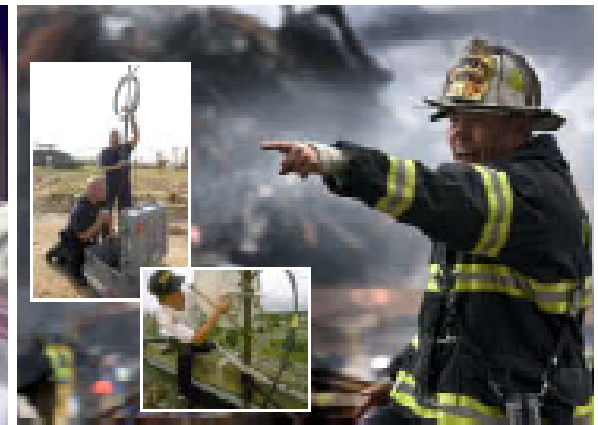
Explosives



Chemical/Biological



Command, Control, & Interoperability



Borders/Maritime



Human Factors



Infrastructure/Geophysical



FROM TECHNOLOGY..TRUST

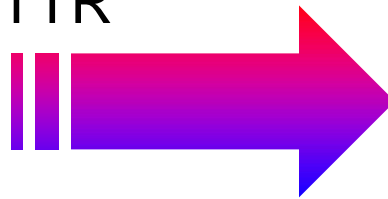
DHS S&T SBIR Strategy

- 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

	SBIR
Phase I: Scientific and Technical Feasibility	<i>NTE* 6 months</i> \$100K (33% may be outsourced)
Phase II: Concept Development	<i>NTE 24 months</i> \$750K (50% may be outsourced)
Phase III: Product Development	Private or non-SBIR government funding



DHS S&T SBIR Program

- Two solicitations per year
 - Posted in Federal Business Opportunities at www.fedbizopps.gov and on www.sbir.dhs.gov
 - 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

	FY04 \$19M		FY05 \$23M		FY06 \$35M (includes STTR)		FY07 \$25.2M	
Solicitation	4.1	4.2	5.1	5.2	6.1	6.2	7.1	7.2
Number of Topics	8	6	6	6	10	6	10	7
1,740 Phase I Submissions	368	157	215	208	194	178	236	184
293 Phase I Awards	66	31	32	30	45	28	38	23
81 Phase II Awards	21	13	11	17	19	TBD		
Cost Match	2	1						
Funding Provided to Other Agency Phase II Awards	3		1		3		1	
Phase III Awards	2		2					



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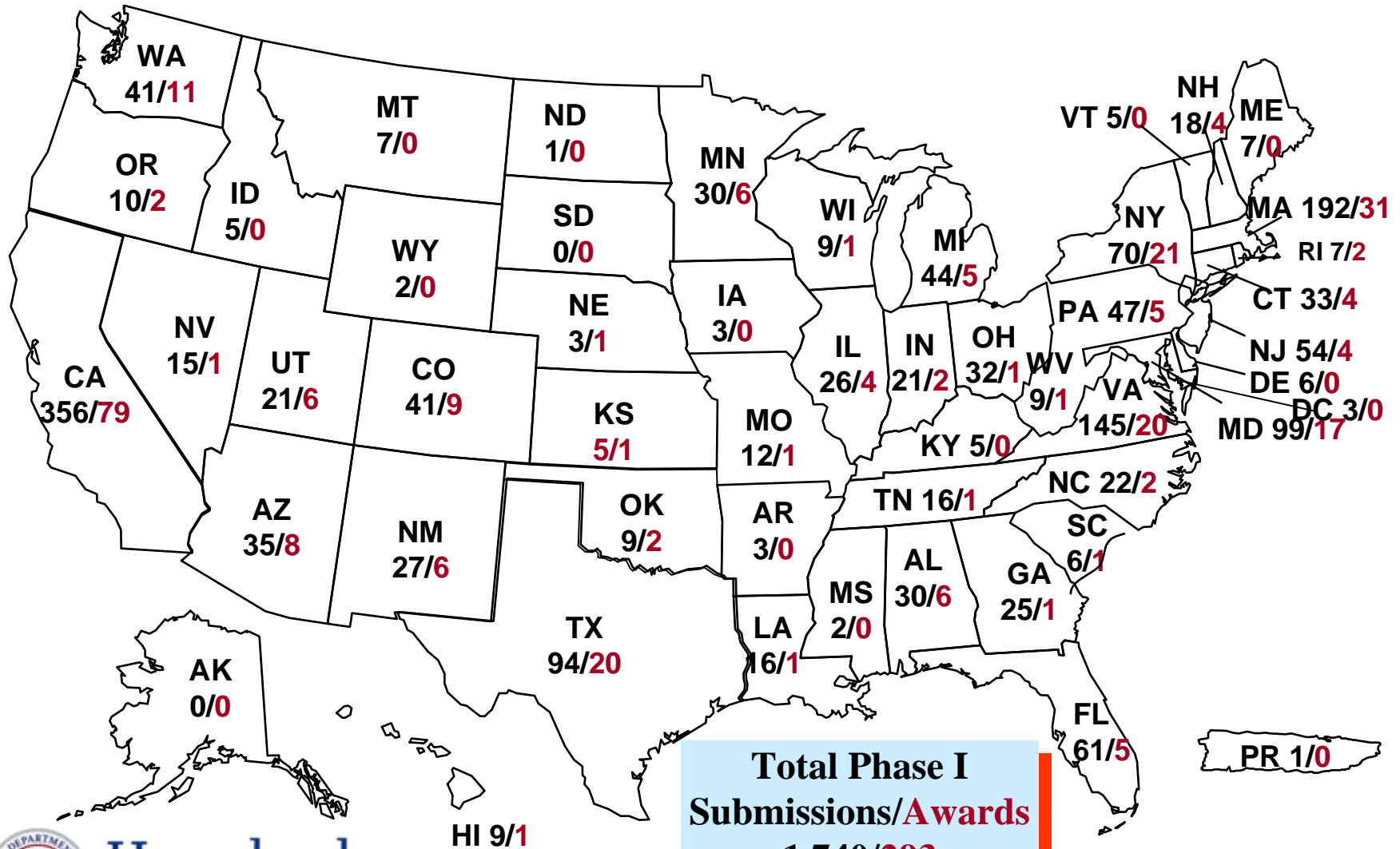
Award Average

Phase I: 17 %

Phase II: 40 %

DHS SBIR Phase I

*Data from 8 Competitions through FY07.2**



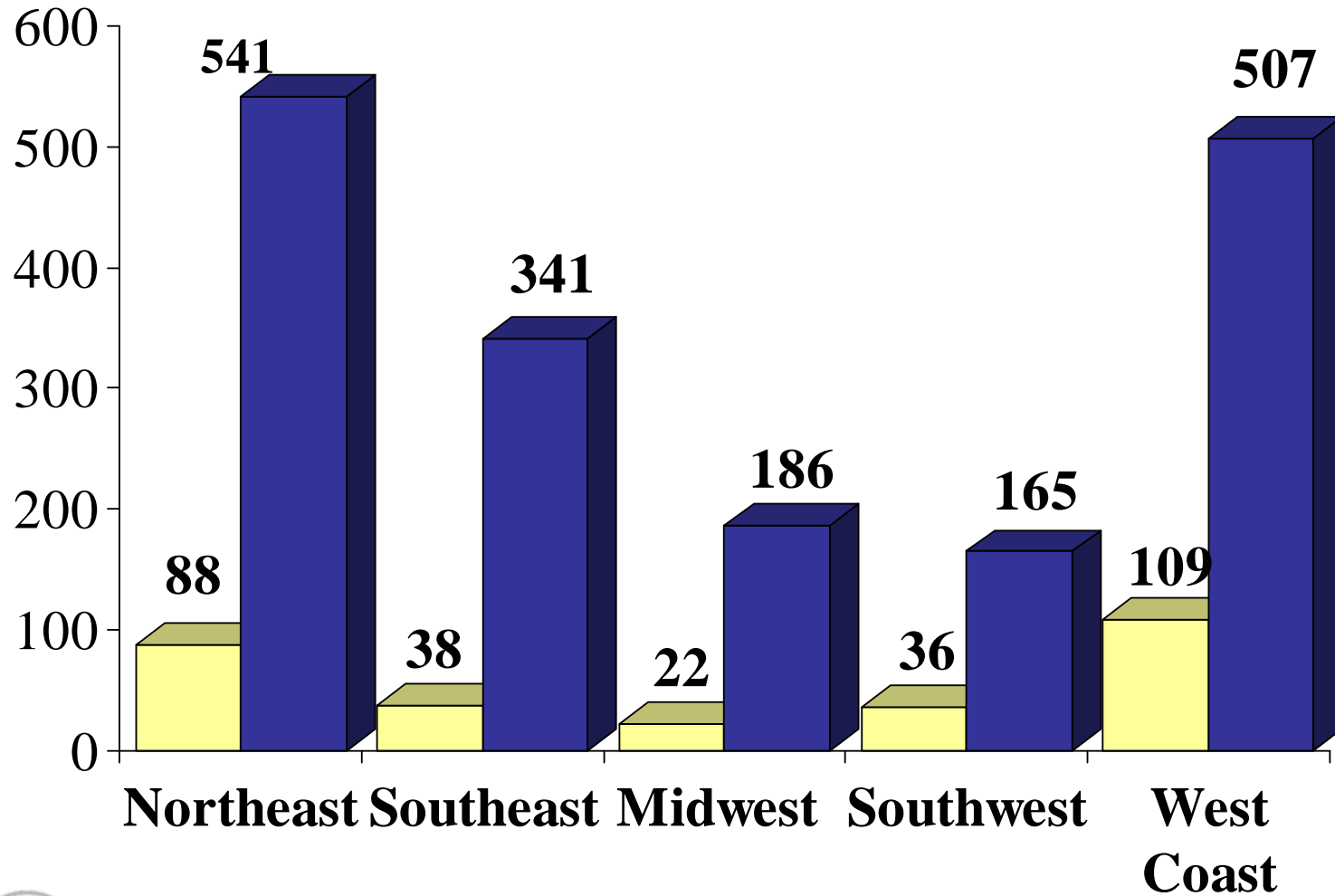
**Total Phase I
Submissions/Awards
1,740/293**

* Includes STTR data



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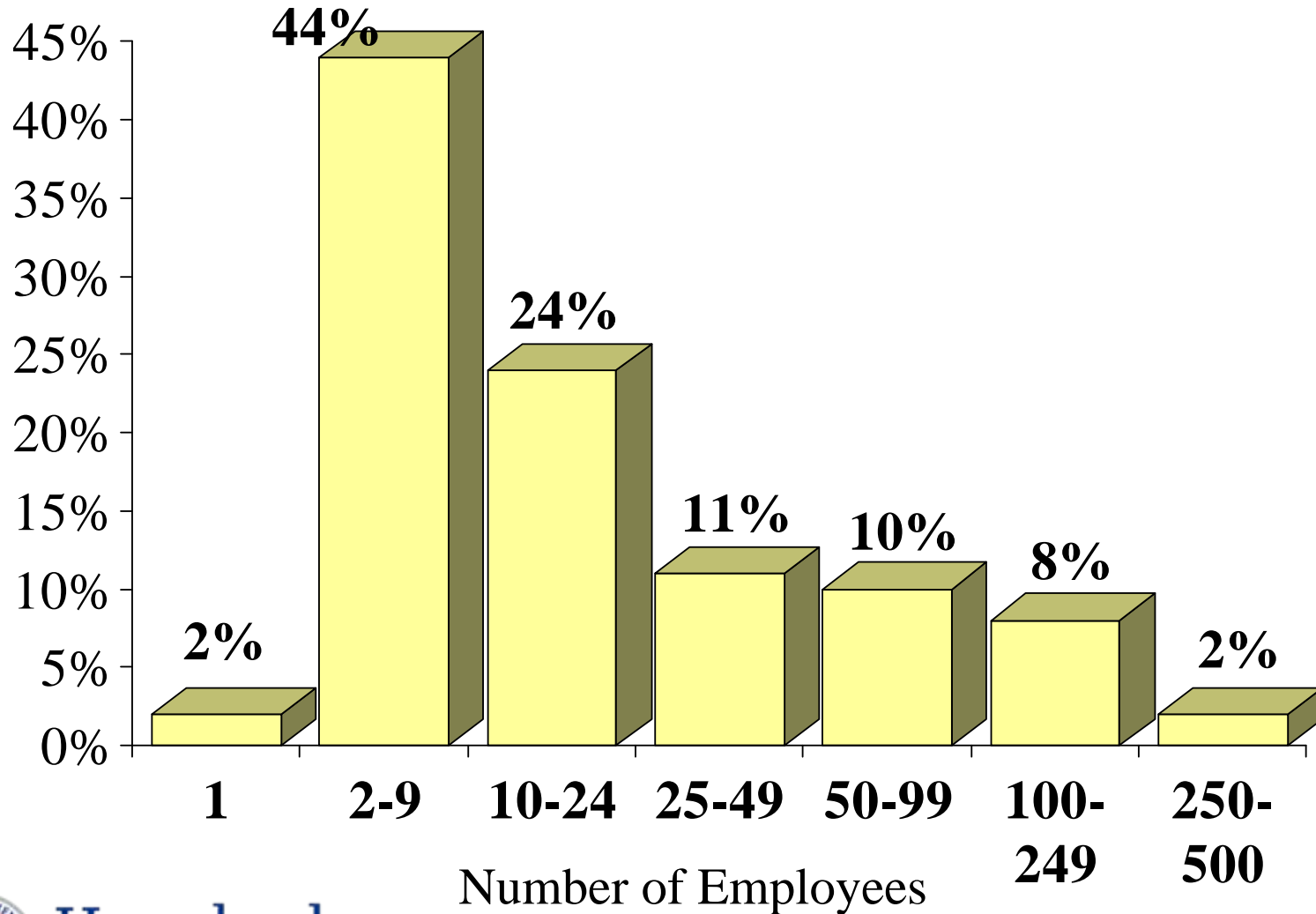
DHS SBIR Phase 1 Awards Versus Submissions by U.S. Regions*



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* Includes STTR data

Who Participates in the DHS SBIR Program?



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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

	FY04 \$19M		FY05 \$23M		FY06 \$35M (incl. STTR)	
Solicitation	4.1	4.2	5.1	5.2	6.1	6.2
Invited Phase IIs	30	18	15	19	29	8
Selected Phase IIs	21	13	11	17	19	TBD
Pre-Contract Approval	5	5				

Jump Start Phase II
Award Average
 73 %

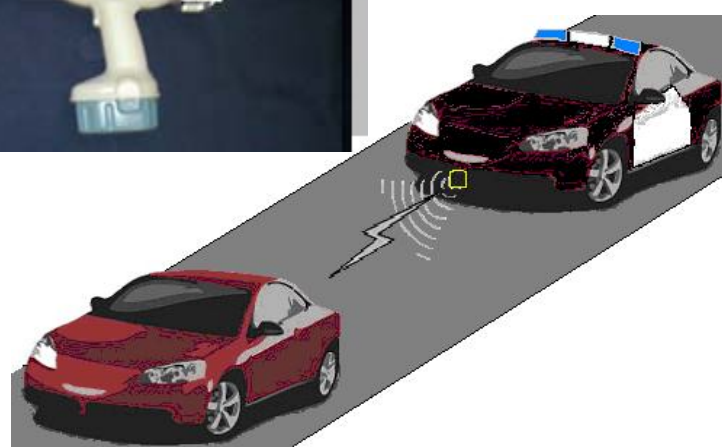
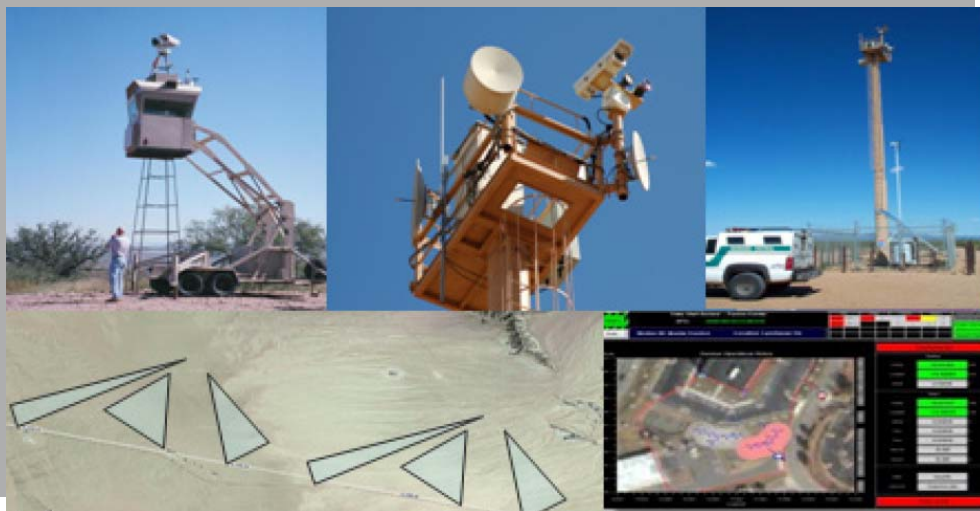
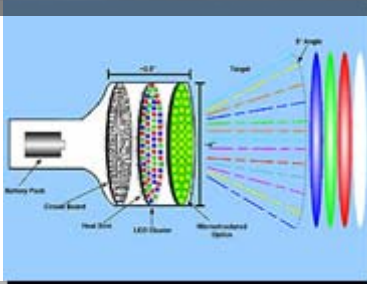
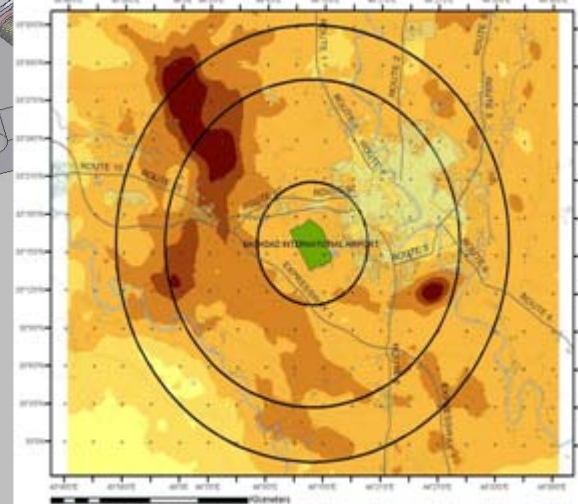
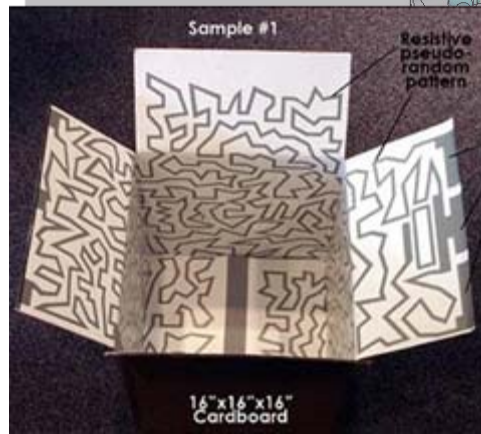
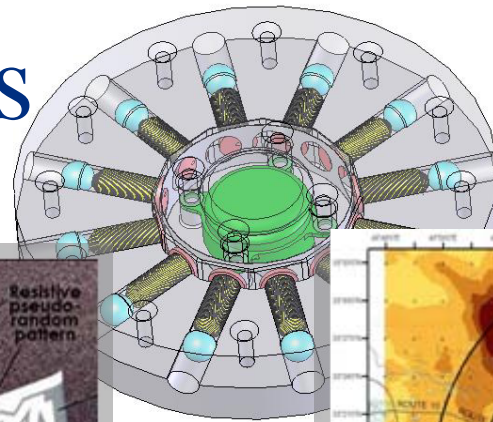


Cost Match

- 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



U.S. DEPARTMENT OF
HOMELAND SECURITY
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FY08 SBIR Schedule

- 08.1

- Pre-solicitation posted: December 3, 2007
- Solicitation posted: December 19, 2007
- Proposals accepted: December 19, 2007 – February 4, 2008
- 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



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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



SBIR Home



Department of Homeland Security

SBIR PROGRAM

News and Events

Solicitation Deadlines

[Homeland Security](#) | [Science & Technology](#) | [HSARPA BAA](#) | [DSDBU](#) | [SBA](#) | [SAFETY Act](#) | [Contact Us](#) | [Privacy Policy](#) | [Join HSARPA Mailing List](#)

Proposal Submission

[DHS SBIR has opened its 8.1 Solicitation on Wednesday, December 19, 2007](#)

SBIR Solicitations

Department of Homeland Security Science & Technology SBIR/STTR Program

Safety Act

Awards

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.

Other Funding Opportunities

Proposal Review

Collaboration Opportunities

Collaboration Opportunities

SBIR Contact Information

FAQ

Links

Topic Recommendations

Topic Recommendations

Presentations



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.fedbizopps.gov
- www.sbir.gov

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