Navy SBIR Program

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Extramural Programs Reserved for Small Business

SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM

Program Descriptions

- SBIR: Set-aside program for small business concerns to engage in federal R&D -- with potential for commercialization.

- STTR: Set-aside program to facilitate cooperative R&D between small business concerns and U.S. research institutions -- with potential for commercialization.

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, disadvantaged persons and women in technological innovation
- Increase private-sector commercialization innovations derived from federal R&D

Brief History of SBIR Program

- Established 82 under Small Business Innovation Development Act, P.L 97-219. Required federal agencies with annual outside RDT&E budget over $100 million to establish SBIR programs.
- Been extended and modified several times; in 1986, P.L. 99-443; in 1992, P.L. 102-564.
- Current program is due to sunset in Oct of 2000, it is presently in committee and expected to be passed for another 7 to 10 years.
- Since 82' approximately 50,000 SBIR awards have been made with approximately $9 billion dollars across the Federal Government.

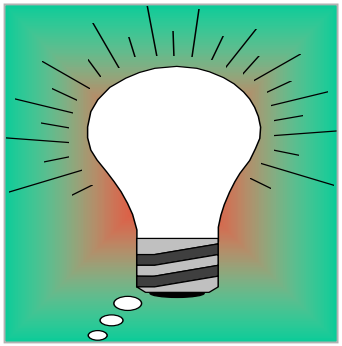
1992 REAUTHORIZATION

PURPOSES OF P.L. 102-564, SIGNED 10/28/92

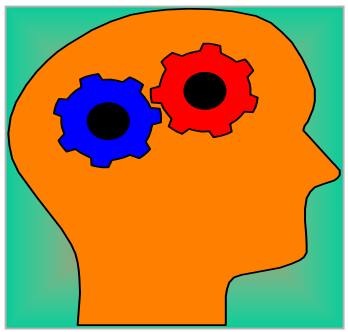
- Expand and improve SBIR Program
- Emphasize goal of increasing private sector commercialization
- Increase small business participation in federal R&D
- Improve dissemination of information on SBIR Program

SBIR/STTR: 3-Phase Program

- PHASE I
  - Feasibility study
  - $100K and 6 months (SBIR) or 12 months (STTR)



- PHASE II
  - Full R/R&D
  - 2-Year Award and $750K (SBIR) or $500K (STTR)



- PHASE III
  - Commercialization Stage
  - Use of non-SBIR Funds

Some important facts to remember

- Eligibility is determined at time of award
- No appendices allowed in Phase I
- The PI is not required to have a Ph.D.
- The PI is required to have expertise to oversee project scientifically and technically
- Applications may be submitted to different agencies for similar work
- Awards may not be accepted from different agencies for duplicative projects

SBIR PROGRAM

- Program re-authorized through FY 2000
- 10 agencies with R&D budgets greater than $100 million participate
- Amounts to be set-aside of R&D budget:

FY 1987-92:	1.25%
FY 1993-94:	1.5 %
FY 1995-96:	2.0 %
FY 1997 and beyond:	2.5 %

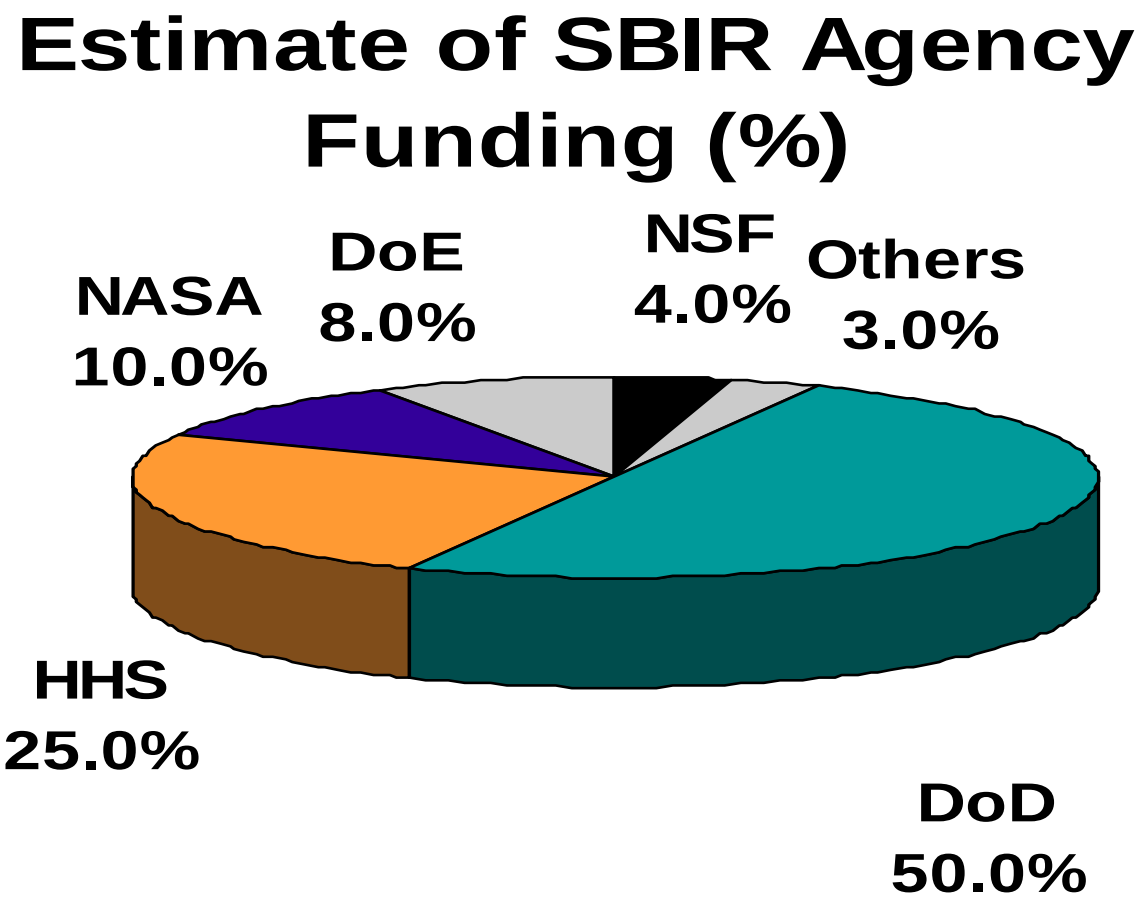
SBIR/STTR Participating Agencies

TOTAL ~ $1.2 B
FY 2000

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

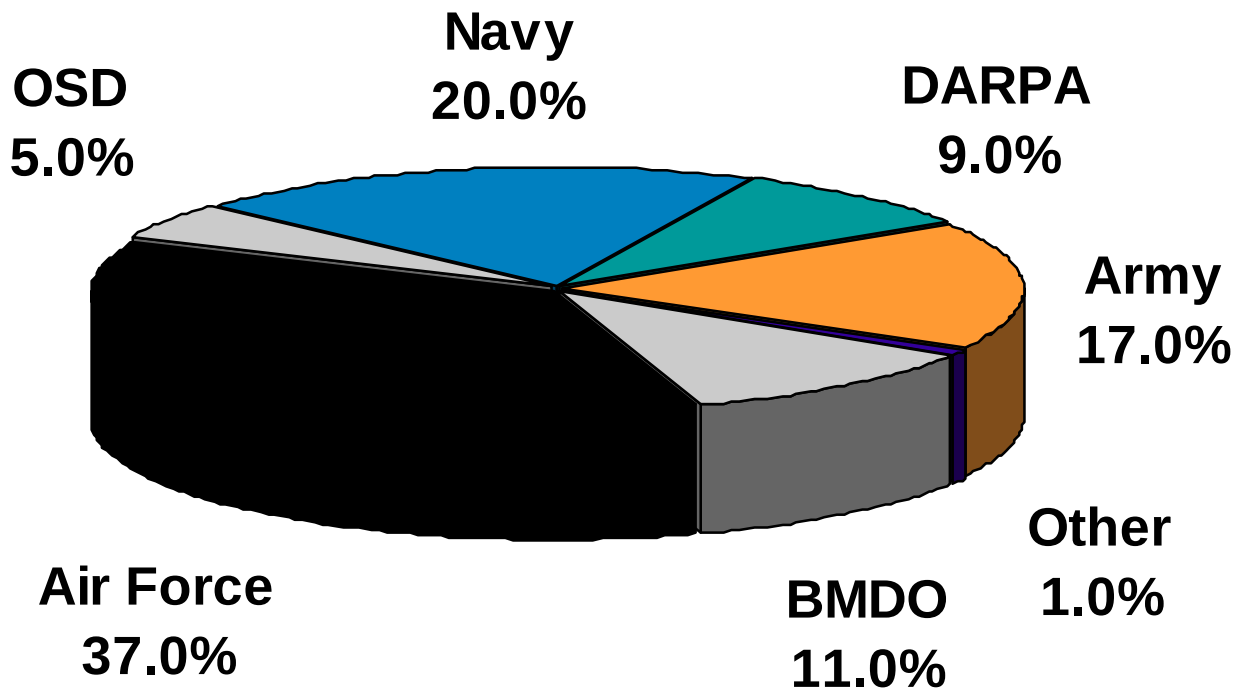
SBIR Funding Allocation Across Federal Government

National SBIR Funding:$1.2 billion projected in FY00



SBIR Funding Allocation Across DoD

- DOD SBIR Funding: $550 million in FY2000
- DOD STTR Funding: $30 million in FY2000



Agency SBIR/STTR Differences

- R&D Topic Areas
- Dollar Amount of Award (Phase I and II)
- Receipt Dates / Number and Timing of Solicitations
- Proposal Review Process
- Proposal Success Rates
- Type of Award (Contract or Grant)
- Many other details:
  - Profit or fee allowed
  - Phase I to Phase II gap funding
  - Payment types and schedule

SBIR vs STTR
UNIQUE FEATURES

		SBIR	STTR
Set-Aside of Agency Budget		2.5%	0.15%
FY00 SBIR/STTR Budget		**~ $1.2 Billion**	
Award Guidelines	**Phase I**	$100K/6mos	$100K/12 mos.
	Phase II	$750K/2 yrs	$500K/ 2 yrs
Subcontracts	**Phase I**	<33%	<60%
	Phase II	<50%	<60%
Academic Component		Not Required	>30%
Business Employment of PI		>50%	n/a

SBIR AND STTR PROGRAMS CRITICAL DIFFERENCES

- SBIR: 2/3 project by small business - Phase I
  1/2 project by small business - Phase II

✦ STTR: 40% work by small business and
  30% work by research institution

- SBIR: PI's primary employment must be
  with small business concern

STTR: PI can be from research institution or
small business concern

SBIR PROGRAM ELIGIBILITY CHECKPOINTS

- ✓ Organized for- profit U.S. business
- ✓ At least 51% U.S.-owned and independently operated
- ✓ Small Business located in the U.S.
- ✓ P.I.'s primary employment with small business during project
- ✓ 500 or fewer employees

STTR PROGRAM

- ✓ **FORMAL COOPERATIVE R&D EFFORT**
  - → Minimum 40% by small business
  - → Minimum 30% by research institution

- ✓ **U.S. RESEARCH INSTITUTION**
  - → College or University; other non-profit research organization; federal R&D center

- ✓ **PRINCIPAL INVESTIGATOR FROM SMALL BUSINESS and/or RESEARCH INSTITUTION**

- ✓ **AWARD MADE TO SMALL BUSINESS**

SBIR/STTR: Historical Relationships

1982 **1997**

Federal Government

Small Businesses

SBIR/STTR: Historical Relationships

1982 **1998**

Federal Government

State Government

- ⇒ Quasi-Government Corporations
- ⇒ Economic Development Entities
- ⇒ Technology Centers

Small Businesses

SBIR/STTR: Historical Relationships

1982 **2000**

Federal Government

State Government

- ⇒ Quasi-Government Corporations
- ⇒ Economic Development Entities
- ⇒ Technology Centers

Small Businesses

Academia

- ⇒ University Research Parks
- ⇒ Faculty & Graduate Students
- ⇒ Technology Incubators
- ⇒ Research Foundations

Research Institution Partnership Opportunities

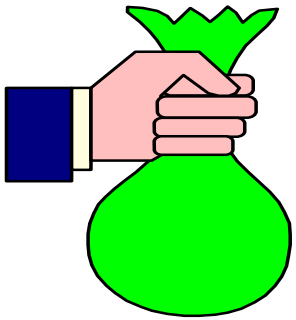
- Own small firms (assign *someone else* PI)
- Principal Investigator
  (with official permission from University)
- Senior Personnel on SBIR/STTR
- Consultants on SBIR/STTR
- Subcontract on SBIR/STTR
- University facilities can provide analytical and other service support

Reasons to Seek
SBIR/STTR Funding Opportunities

- Over $1.2 Billion available
- Seed money to fund high risk projects
- NOT A LOAN - no repayment of award
- Intellectual property rights retained by small business
- Recognition, verification and visibility

Reasons to Seek SBIR/STTR Funding Opportunities

- **Potential leveraging tool to attract venture capital/other sources of $$$**
- **Small business concerns are increasingly recognized as the principal source of technological innovation**



Benefits of SBIR Program to Federal Government

- It's a Safe Way to Try Out High-Risk R&D.
- You are already paying for it, so it is in your best interest to see that the topics benefit your program.
- Small Business are often much more cost effective then the large primes.
- It helps new companies establish a track record with the government.
- It allows program managers to establish another source/method for R&D or equipment and augment their ongoing programs.

Navy SBIR Program Description

- Navy SBIR is a mission oriented S&T program with the goal of <u>transitioning</u> SBIR technology into Navy/DoD systems.
- Use SBIR program to provide the small business with an opportunity to address Navy/DOD technological needs.
- It is to the Navy's benefit if the technology is also commercialized in the private sector. It becomes COTSware

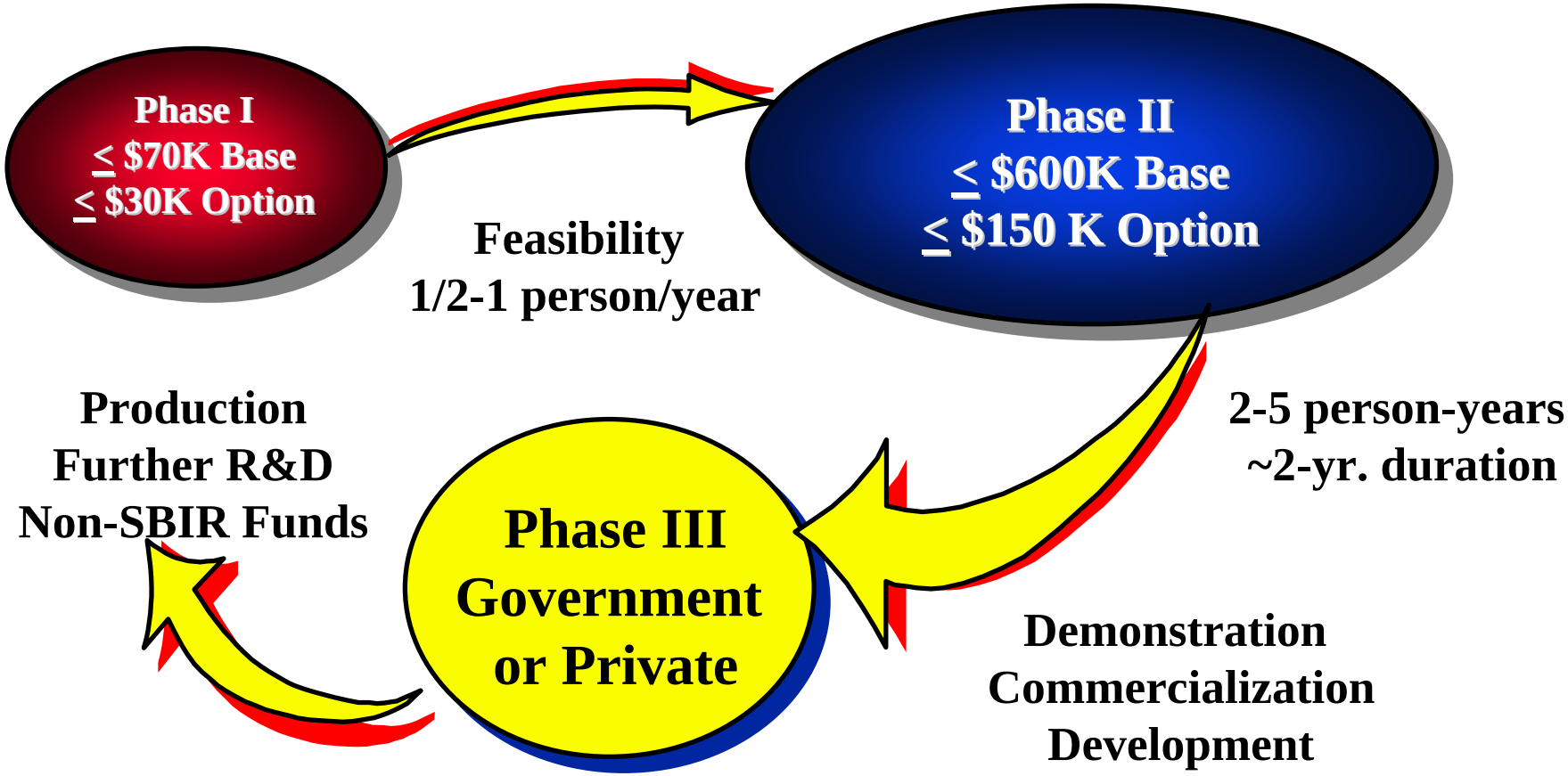
Organizational Structure

- Program is Administered by the Office of Naval Research
- Program Participants
  - Naval Sea Systems Command: Warfare Centers, PEO's and Prog. Managers
  - Naval Air Systems: Warfare Centers, PEO's and Program Managers
  - Office of Naval Research: Science & Technology Directorates and Naval Research Laboratory
  - Space & Warfare Sys. Command: Warfare Centers, PEO's and Prog. Managers
  - Marine Corps Systems Command: Associated Program Managers
  - Naval Supply Systems Command
  - Naval Facilities Systems Command: NAVFAC

New ACAT I SBIR Liaisons For DOD

- A list of ACAT I SBIR Liaisons has been developed and is posted on the DoD SBIR Website at; http://www.navysbir.brtrc.com/DoDhome.htm
- These are the program's that are assessed to provided funding for the SBIR program and are looking to transition the technology into their system.

Program Phases



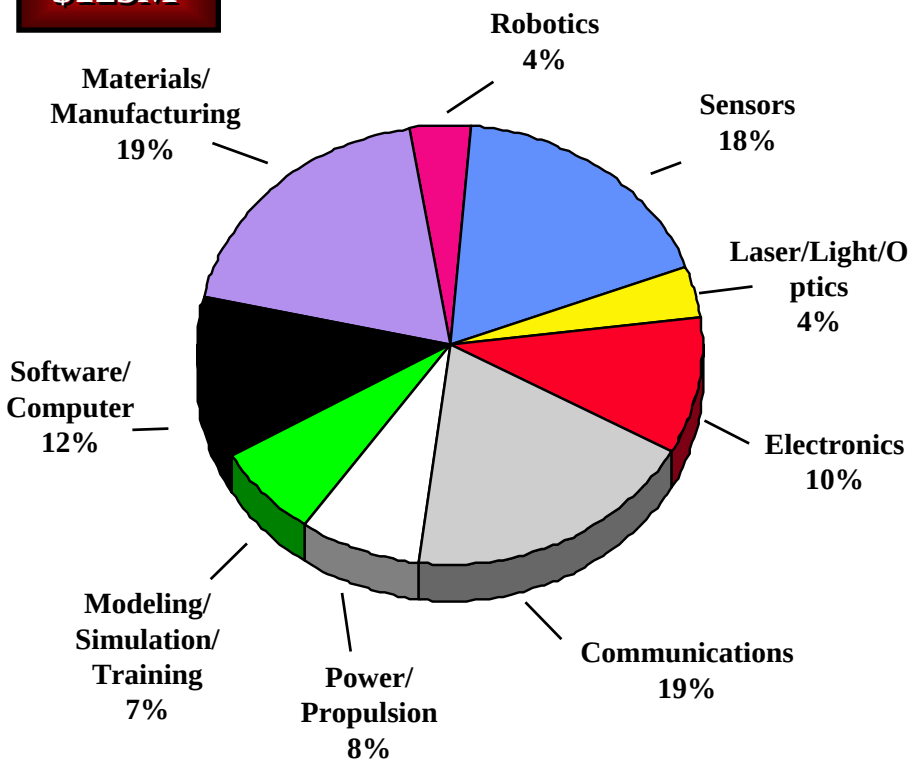
Navy SBIR Statistics

	FY98	FY99	FY00	FY01*
Funding ($M)	108	110	125	120
Number of Topics	172	172	126	120
Phase I proposals	1774	2167	1311	1300
Phase I awards	236	358	300*	360
Phase II awards	117	98	130*	125

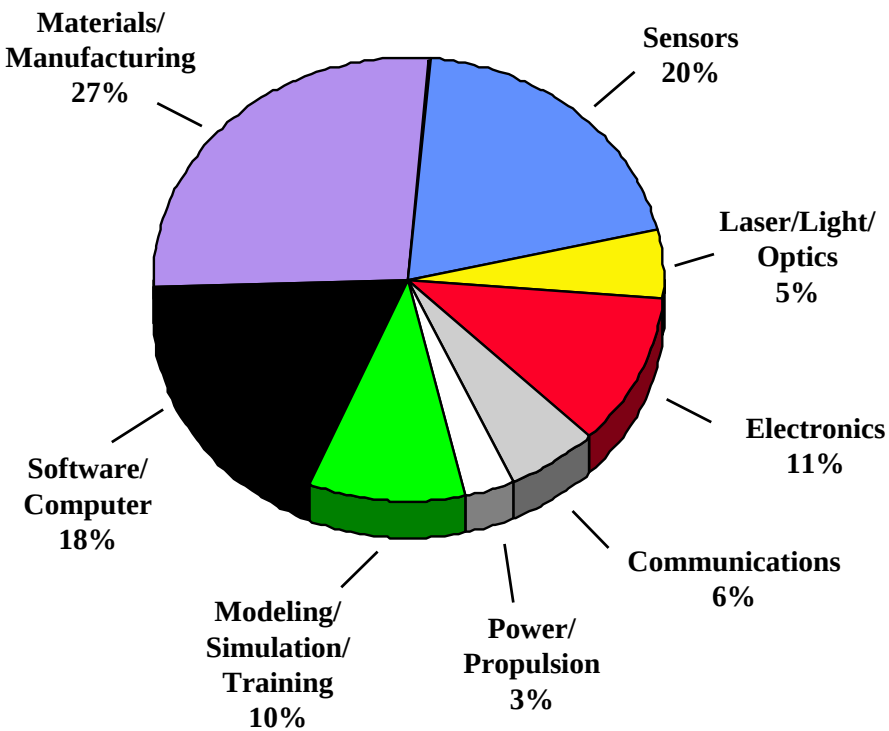
* Estimated

Navy SBIR Technology

FY00
$125M



FY01
***120M**



*** All FY01 amounts are estimates**

Specific Topics in Current Solicitation Closes 10 January 2001

Strategic Systems Programs (SSP)

N01-001 Radiation Hardened Electronics Packaging for Strategic Missile Guidance System Upgrades

Marine Corps Systems Command (MARCORP)

N01-002 Ceramic Barrels for Small Arms

N01-003 Enabling Technologies for Eye-safe Laser Range Gated System Development

N01-004 High Performance Composite Backing Armor System for the AAAV Vehicle

N01-005 Personnel Identification

N01-006 Short Wavelength Diode Array Illuminator

Naval Air Systems Command (NAVAIR)

N01-008 Automatic Test Equipment (ATE) for COTS Replacement for Obsolete Instruments

N01-009 Low-Cost Sonobuoy Geographic Position Locator

N01-010 Large Format Resistive Arrays (LFRA) for Infrared Scene Projectors (IRSP)

N01-011 Web-Based and Traditional Classroom Lesson Design Guide

N01-012 Wire Chafing Diagnostic Technology for Aircraft

N01-013 Mid-Air Collision Avoidance System (MCAS) Using Mode 5

N01-014 Environmental Assessments and Mitigation of Naval Operations (Air and Surface)

NAVAIR AND NAVFAC

N01-015	Digital Data Download (D3) with Crash Survivable Memory
N01-016	Development of New Processes for the Refurbishment of IRST Germanium (Ge) domes
N01-017	Shallow Water Bottom Characteristic Measurement Sensors
N01-018	Semi-Active Side-Lateral Engine Mounts for Control of Vibration and Shock Loading
N01-019	Advanced Rotorcraft Shipboard Landing Aerodynamic Interference Software Modules
N01-020	Software Cost and Schedule Estimating
N01-021	Low-Drag Aircraft Slip Resistant Surface Treatment
N01-022	Fasteners/Rivets for Watertight Integrity and Corrosion Prevention in Permanent Application
N01-023	Low-Cost Missile Environment Monitor
N01-024	Innovative Gas Turbine Engine Propulsion
N01-025	Fiber Optic / High Voltage Cables and Connectors
N01-026	Nondestructive Evaluation (NDE) of Composite Parts Prior to Cure

Naval Facilities Engineering Services Command (NAVFAC)

N01-027	Sprayable Polysulfide Elastomeric Development
N01-028	Flexible Marking Paint for Asphaltic Airfield Pavements
N01-029	Marking Paint for Portland Cement Concrete (PCC) Airfield Pavements with High Adhesion

ONR

Office of Naval Rsearch (ONR)

N01-030	Breaking the 1 Joule/cm3 Barrier for High Power Capacitors
N01-031	Digital Compensation for Distortion
N01-032	Simulating Data for the Development of Decision-Making Systems
N01-033	Innovative Sensor Technologies for In-Situ Air and Ocean Sampling under Extreme Conditions
N01-034	Compact High-Power Electronic Components
N01-035	Remote Data Link for Integrated Ocean Observing System
N01-037	Technology for Shipbuilding Affordability
N01-038	Wireless Sensors System for Aircraft Health Management
N01-039	Integrated Simulation-Based Design Environment
N01-040	Modeling of Composite Solid Propellant Combustion
N01-041	Prediction of Hyperbaric Oxygen Seizures with Neural Networks
N01-042	Needleless Topical Administration of Dengue DNA Vaccine
N01-043	Underwater Sampling and Chemical Analysis System as Payload for an UAV
N01-044	Device Independent Voice-To-Voice Language Translation Software
N01-045	Blue Optoelectronics
N01-046	Sonar Stimulation for Virtual Targets in Netted, Tactical ASW Training on Legacy Submarines
N01-047	Optical Particle Size Spectrometer For Monitoring Particle Size And Concentration In Aircraft Sampling Inlets And Ducts

SPAWAR

Space & Naval Warfare Systems Command (SPAWAR)

N01-048	**Indications and Warning (I&W) Inference Engine for the Information Warfare (IW) Picture**
N01-049	**Enhanced Data Rate Performance for VLF/LF**
N01-050	**Bandwidth Efficient Remote Manipulation and Fusion of Huge Data Sets**
N01-051	**Optical Powering Of Systems**
N01-052	**Compressed Internet Protocol (IP) Data Via Geosynchronous Earth Orbit (GEO) Satellite Circuits**
N01-053	**Simulation Runtime Prediction System**
N01-054	**Precise Time and Frequency for Navy Applications**
N01-055	**IW (Information Warfare) Sensor and Wireless Network for Recovery of Wide-band Data**
N01-056	**Characterizing the Shallow Water Environment and Ambient Noise using In Situ and Remotely Sensed Information**

NAVSEA

Naval Sea Systems Command (NAVSEA)

N01-057	**Effectiveness of doubler plates as a permanent repair under cyclic loads in a highly corrosive**
N01-058	**Wireless Interface to Programmable Logic Controllers (PLC)**
N01-059	**Portable, wireless transmitting accelerometer for measuring vibration**
N01-060	**Damage Tolerant Composite Scuttles and Hatches**
N01-061	**Development of Probabilistic Design Primary Loads for use in a Weight-Optimized Structural**
N01-062	**Relay Replacement**
N01-063	**Data-fusion for Advanced Cathodic Protection Monitoring and Control for Marine Structures**
N01-064	**Aircraft Carrier Oxygen Producer Lower Cost Alternative**
N01-065	**High Temperature Pipe and Equipment Insulation**
N01-066	**Fully Automated Cargo Handling System**
N01-067	**Reverse Osmosis (RO) for use in Polluted Waters**
N01-068	**Chaos Techniques to Predict Ship Motion for Amphibious Operations**
N01-069	**Shipboard Bio-mechanical Oil Water Separator**
N01-070	**High Volume Underway Replenishment Circulating Ropeway**
N01-071	**Water-Wet Pelletized Nitrocellulose Dehydration**
N01-072	**Improved Magnetostrictive Materials**
N01-073	**Development of Low-Cost Manufacturing Process for 1, 2, 4-Butanetriol (BT)**

NAVSEA

N01-074	Drag Reduction in Water
N01-075	Advanced, High Momentum Recoil System for Naval Guns
N01-076	Flexible, Low-Noise Air Management
N01-077	Projectile inertial navigator from COTS instruments
N01-078	Improved Sonar Dome Window Materials that are Acoustically Transparent
N01-079	Run-Time Reallocation of Computing Resources in a Heterogeneous Networked Computing
N01-080	Fault Location in an Intelligent Open Sensor Network
N01-081	New Sabot and Pusher Plate Concepts for Barrage Round
N01-082	Application of JINI Technology to Tactical System Integration
N01-083	Submarine Mast Detectability Reduction
N01-084	Technology for Torpedo Affordability
N01-085	Investigation into the use of wireless technology to eliminate cabling in Submarine (C4I) System
N01-086	Transient Shock Resistance of COTS Electronics
N01-087	Low Cost Compression Techniques Applied To Encrypted Data Distribution System
N01-088	Affordable High Performance Shock and Vibration Mitigating Mount
N01-089	Dynamically Optimized Team Performance
N01-090	TBMD Tactical Telemetry Transmitting System
N01-091	Interference Suppression Techniques Development for Future Combat Scenarios

NAVSEA

N01-092	Dynamic Sensor/Weapon Alignment Algorithms
N01-093	Advanced Personal Communicator (APC)
N01-094	Model Based Tools and Methodologies for Embedded Systems Software Development.
N01-095	Main Beam Jamming Nulling in Phased Array Radars
N01-096	New Non-Cooperative Target Recognition (NCTR) Techniques Development
N01-097	Electrostatic Discharge Analysis of Reactive Material Formulations
N01-098	A Navigation Agent (NavAgent) Tool for Shipboard Navigation & Weapons Systems Integration
N01-099	Utilization of Atmospheric Refractivity Information to Improve Radar Operation in Littoral
N01-100	Mission Planning for Tactical Shipboard EW Systems
N01-101	Maintenance Skills Training Through Distributed Learning Principles
N01-102	Risk-Based Maintenance Strategies to Reduce Total Ownership Costs
N01-103	Ultra Wideband Active Acoustic Conformal Array Module
N01-104	Underwater Velocity Indicator
N01-105	All Optical Towed Array Position Measurement System
N01-106	Propulsion Shaft Interrogation

Pennsylvania Navy Award Winners

Firm	Location	Phase
Acoustech Corporation	State College	I/II
CHI Systems, Inc.	Lower Gwynedd	I/II
Combustion Propulsion and Ballistic	State College	I
Daniel H. Wagner Associates, Inc.	Malvern	(2) PH IIs
Daryoush GEMS, Inc.	Bryn Mawr	II
General Sciences, Incorporated	Souderton	I/II
Lawrie Technology, Inc.	Girard	II
Materials Research & Design, Inc.	Rosemont	(2) PH IIs
Materials Sciences Corporation	Fort Washington	II
Nanomat, Inc.	Somerset	I
Navmar Applied Sciences Corp.	Warminster	I
RDA Inc.	Doylestown	(2) PH Is/(3) PH II
Rydal R & D (Group 16)	Rydal	II
TRS Ceramics, Inc.	State College	II
Zeger-Abrams Incorporated	Wyndmoor	II

Pennsylvania Statistics

Phase I Proposals Received

99.2 & 00.1	*98.2 & 99.1*	*97.2 & 98.1*	*96.2 & 97.1*
63	90	73	88

Phase I Awards

99.2 & 00.1	*98.2 & 99.1*	*97.2 & 98.1*	*96.2 & 97.1*
10	20	11	18

Phase II Awards

FY1999	*FY1998*	*FY1997*	*FY1996*
8	9	11	12

Navy Statistics

- For Fiscal Year 1999 the Navy made 245 Phase I and Phase II Awards
  There were 245
- 37% of the total awards were to first time Navy Winners
- 45% of the total firms were first time Navy Winners

What Is New with Navy SBIR?

- New and Enhanced Query Database
  - Access past and current Navy SBIR/STTR Awards through searchable database engine
- Require SBIR/STTR companies to submit final report summaries electronically through Navy SBIR Website
- Require electronic submission of Abstract and Company Commercialization Reports through DoD Website
- Request companies submit success stories through our website and recently published a 1999 Success Story Book

Navy SBIR/STTR Bulletin Board

Get the most updated information on the Navy program
http://www.onr.navy.mil/sbir

Brings up Full Abstract of Current and Past Awards

Search Results

Documents 11 to 20 of 112 matching the query "corrosion".

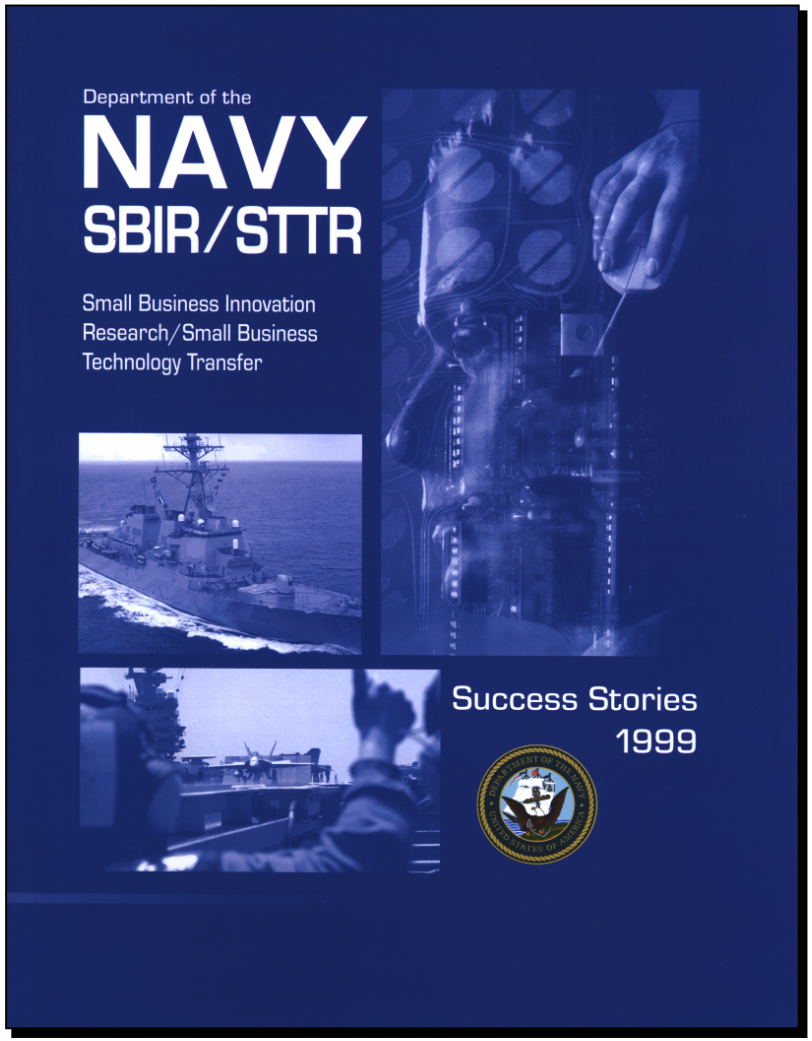
New query | Previous 10 documents | Next 10 documents

11. **N97-058 - Phase I Award - Develop A Generic Structural Composite Material to Meet MIL-STD-2031 - Texas Research Institute Austin Inc - Cmd: NAVSEA**
    Abstract: The use of polymer matrix composites aboard U.S. Navy submarines has been limited to . .

12. **N97-056 - Phase I Award - Portable Infrared Thermographic System for Detection of Corrosion Under Paint - Industrial Quality, Inc. - Cmd: NUWC**
    Abstract: The development of a man-portable infrared thermal inspection system for the detection of . .

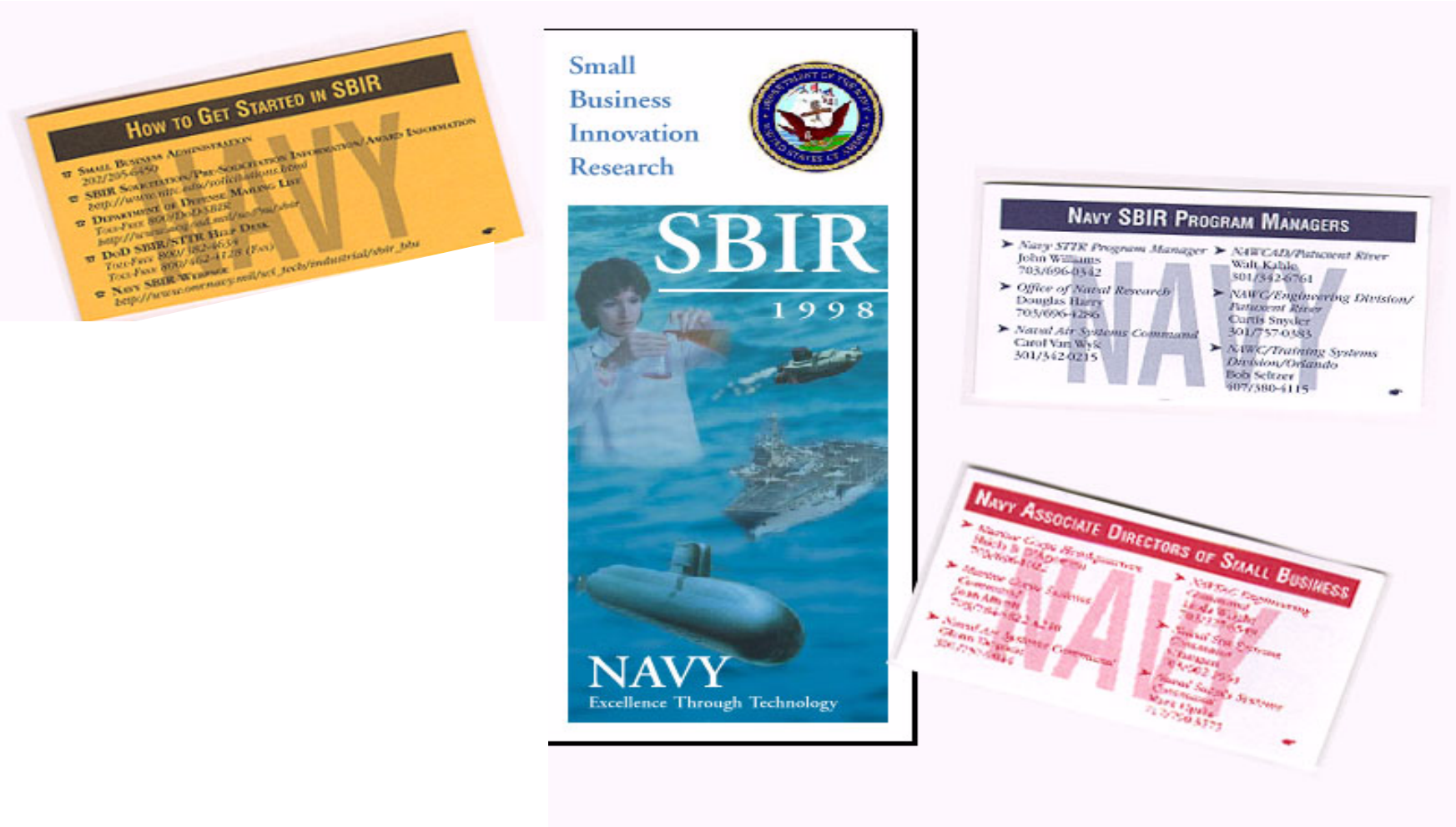
Title:	Portable Infrared Thermographic System for Detection of Corrosion Under Paint
Command:	NUWC
Solicitation #:	97.1
Topic #:	N97-056
TPOC:	Kirk Jenne, (407) 857-5117
Award Amount:	70000
Phase:	I
Contract Number:	N66604-97-M-3561
Award Start/End:	5/6/97 - 11/6/97
FY Rept:	1997
Firm:	Industrial Quality, Inc.

Success Story Publication



- Navy printed first success story book highlighting 48 Small Businesses
  - Over 7,000 copies were disseminated to Congressional leaders, PEO/PM's, Large Primes, and Small Business
- Next book is under development and should be printed in January 2001

I have provided Brochures, POC cards and Website information



Tips for Succeeding

- Select topics consistent with your business strategy. If you don't have a plan, set one.
- Conduct a strategic assessment, identify your strengths and weaknesses, and determine how to access needed resources
- Build strategic partnerships
- Plan commercialization path early on

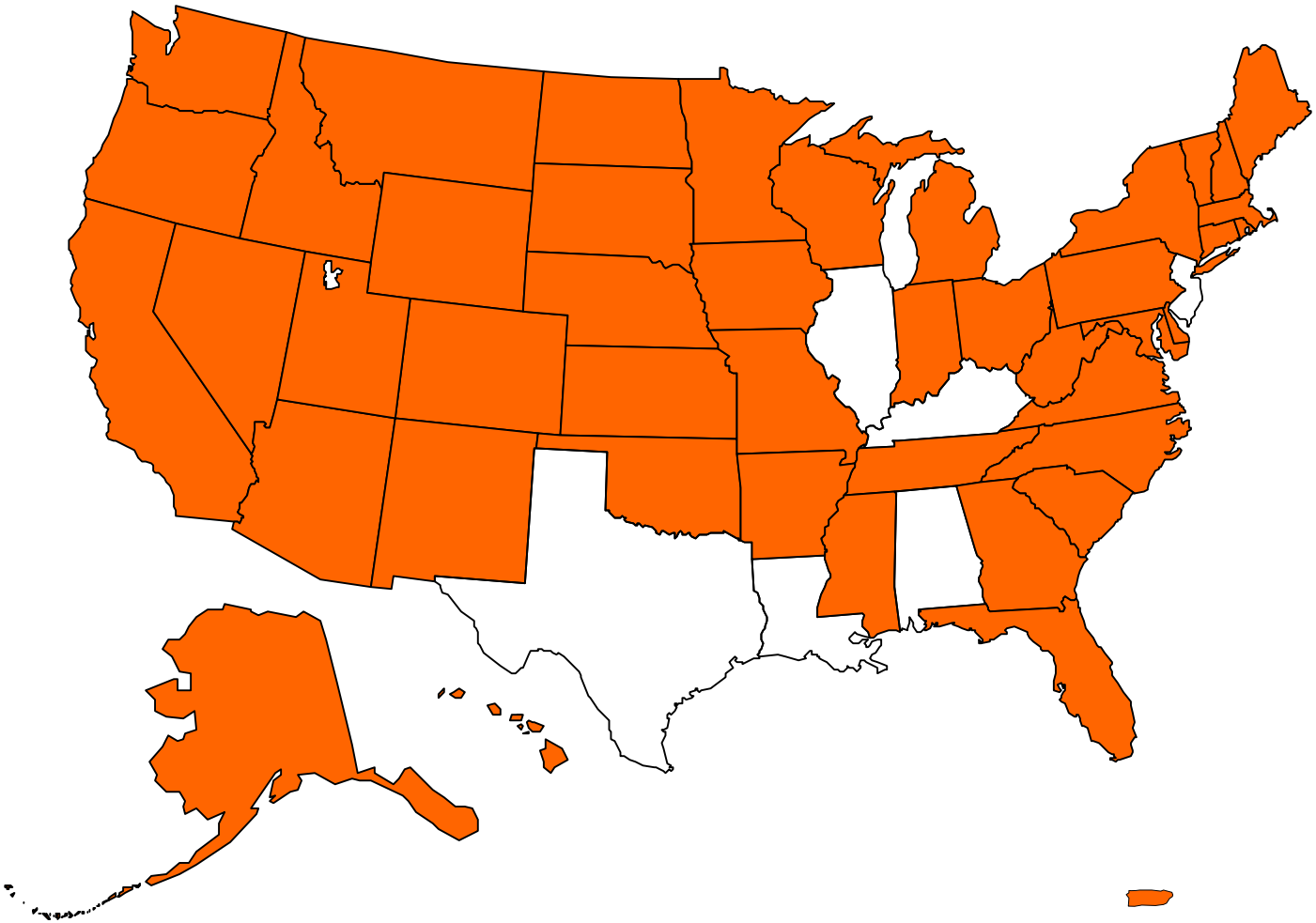
SBIR/STTR TIPS CHECKLIST

- ✓ Get to know your **agency Program Manager**
- ✓ Understand **agency's mission & needs**
- ✓ Read solicitation and **follow instructions**
- ✓ Do not depend **solely** on SBIR funding
- ✓ Don't go it **alone**
- ✓ Have an **outcome**
- ✓ Be **PERSISTENT**.

For more information…..

- Contact individual agency websites
- Cross-agency website:

  http://www.zyn.com/sbir

  - ➡ Conferences / workshops
  - ➡ Topic search engine for *all* agency solicitations

Navy SBIR Outreach 1999/2000 Visits