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

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Director Industrial Innovation Engineering Directorate
SBIR Agencies

- DOD  Defense
- HHS  Health
- NASA  Space
- DOE  Energy
- NSF  $105 Million
- DHS  Homeland Security
- USDA  Agriculture
- DOC  Commerce
- EPA  Environment
- DOT  Transportation
- DoED  Education

TOTAL ~ $2.0B
NSF and SBIR

**NSF Vision:**

Enabling the Nation’s future through discovery, learning, and *innovation*

**SBIR Legislation:**

Increase private-sector commercialization of *innovations* derived from federal R&D
NSF SBIR Innovation Model

Unique to NSF

Topics Investment Focused

PHASE I
Feasibility Research
$100k/6 mos

PHASE II
Research towards Prototype
$500k/24 mos

PHASE III
Product Development to Commercial Market

Private Sector or Non-SBIR Investment

MATCH MAKER

$100k/6 mos

$500k/24 mos

Federal Investment

Taxes

Phase IIIB Third-Party Investment 1/2 NSF Matching

Federal Investment
SBIR/STTR Topic Portfolio

- **Investment Focused (VCs, Angels)**
  - Biotechnology (BT)
  - Electronics (EL)
  - Information Based Technology (IT)

- **Industrial Market Driven (Strategic Partners)**
  - Advanced Materials and Manufacturing (AM)
  - Chemical Based Technology (CT)

- **Special Topics in Response to National Needs**
  - Security Based Technology (ST)
  - Manufacturing Innovation (MI)
Two Current Topics

• Electronics
  – Broad technology coverage
  – 15 Subtopics divided further into numerous sub-subtopics!

• Security Technologies
  – Convergence of at least 2 of 3 technologies: Nano/Bio/Info
  – 5 Subtopics with inputs from other federal agencies
Electronics

- Devices
- Nano
- Instrumentation
- Materials
- Manufacturing
Security Technologies 5 Broad Areas

5 components can be arranged in a framework used to describe security-enhancing cycle
Anthrax Detector for Mail Sorting Systems

Language Weaver

Cluster Learning
Partnerships Opportunities in SBIR/STTR

- **SBIR** – Partnership Optional
  - Small Business “Prime”
  - Phase I up to 1/3 of budget can be out-sourced
  - Phase II up to ½ of budget can be out-sourced

- **STTR** – Partnership Required
  - 40% to 70% of the research by the Small Business
  - 30% to 60% of the research by Academia/FFRDC*

*Federally Funded Research and Development Centers
Faculty Partnership in Small Business

- Faculty members can own small firms
- Faculty members can be “Senior Personnel” on the grant budget
- Faculty members can consult
- Faculty members can be Principal Investigators (with official leave from university)
- Faculty members can be part of a university subcontract
- University laboratories can provide analytical testing and other support services
Roles for Students & Teachers in Small Business Grants

- Supplemental Grants to SBIR/STTR companies
- REU – Research Experience for Undergraduates
  - Typically $6,000 support per student
  - 1-2 students per year per grant
- RET – Research Experience for Teachers (K – Community College Faculty)
  - Typically $10,000 support per teacher
  - 1-2 teacher per year per grant
Employment of Scientists and Engineers*

- **Education Sector**: 36%
- **Government Sector**: 13%
- **Large Business/Industry Sector**: 32.50%
- **Small Business/Industry Sector**: 18.50%

* Data from NSF Science Indicators
• Current Solicitation Closes June 8, 2005
  – Electronics
  – Security Technologies

• Solicitation NSF 05-557