

Federal SBIR/STTR Program

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Agenda

- Welcome, Introductions *
- Overview of SBIR/STTR *
- Is SBIR/STTR Right for me?*

*** *Interactive Discussion***

The SBIR & STTR Programs

Small Business Innovation Research (SBIR)

- A set-aside program for small business to engage in Federal R&D – with potential for commercialization
- **3.2% of the extramural research budget agencies with a budget greater than \$100M per year.**

Small Business Technology Transfer (STTR)

- A sister set-aside program to facilitate cooperative R&D between small business concerns and U.S. research institutions – with potential for commercialization.
- **0.45% of the extramural research budget for all agencies with a budget greater than \$1B per year.**

– in the beginning ...

ANNUAL
> \$2.2B !!

- **SBIR was created by Federal legislation in 1982.**

- SBIR was created to provide funding for some of the best **early-stage** innovation ideas, ideas that however promising, are too **high risk** for private investment.

*Roland Tibbets
Ronald Regan*

- **Envisioned as “Economic Stimulus”**

- SBIR is not an allocation to help needy small companies. It is strong signal to Federal Agencies to make more effective use of the innovative scientists and engineers employed by aggressive small companies that have the potential to convert R&D funds into **new products** and **create new jobs** – to optimize return on taxpayers’ dollars.

➤ \$40 B
➤ 450K
*engineers and
scientists
involved*

*Largest and most important source of early-stage technology
R&D financing for America’s Entrepreneurs !!!!*

SBIR Legislative History

- **1992 Reauthorization:**
 - Greater emphasis on increasing private sector commercialization;
 - Creation of STTR program
- **2000 Reauthorization:**
 - Expanded Phase II program; larger grants & commercialization plan
 - Phase III follow-on funding agreements
- **2011 Reauthorization:**
 - Extends Program to 2017
 - Increases SBIR set-aside to 3.2%
 - Increases STTR set-aside to .45%
 - Authorizes up to \$150K Phase 1 Awards & up to \$1M Phase II Awards
 - Crossover Flexibility
- **2017 Reauthorization:**
 - Extends Program to 2022

SBIR/STTR Program Objectives

- Goal is **commercialization** of new innovations from U.S. small businesses:
 - Stimulate technological innovation in the Private Sector
 - Strengthen the role of small business in meeting Federal research and development needs
 - Increase commercialization of innovations derived from Federal R&D funding
 - Encourage participation by socially and economically disadvantaged persons
- Significant risk reduction:
 - Funds projects that are too early to attract investment capital

SBIR/STTR is a Gated Process

Phase I – Feasibility Study

- Will your idea work?
- Submit ~25 page proposal
- Performance period – 6-12 months
- Funding level – Up to \$150,000
- Average success rate 10% - 13%

SBIR/STTR is a Gated Process

Phase II – Prototype Development

- **Bench level – develop commercialization potential**
- **General submission from Ph I typically**
- **Submit ~25-50 page proposal**
- **Performance period – 2 years**
- **Funding level – Up to \$1,000,000**
- **Average success rate 40-50%**

SBIR/STTR is a Gated Process

Phase III – Commercialization

- **No SBIR/STTR funding, but other Federal funding may be available**
- **Three “F’s”, Angels, Venture Capital**

SBIR/STTR Eligibility Requirements

- Applicant is a small business located in the U.S. (500 employees or less) organized **for-profit**
- At least **51% owned** and controlled by US **individuals**
- R&D must be performed in the United States in company controlled facility
- Universities can only be subcontractors, not recipients, of SBIR/STTR awards

SBIR/STTR Principal Investigator

▶ **SBIR Program:**

- Primary employment of the Principal Investigator must be with the small business. (51% or more)
- Spend ~ 10% or more of time on project

▶ **STTR Program:**

- The Principal Investigator may be from either the small business or the partnering institution
- Check with institution

▶ **Is not required to have a Ph.D./M.D.**

- ▶ Should have appropriate expertise to oversee project scientifically and technically

Subcontractor Eligibility – SBIR

- Small Business MAY subcontract with a non-profit research institute
- SB must perform up 2/3 of the work based on budget in Phase I. Phase II – 50%
- Can subcontract with individual or company, large or small, for profit or non profit.

Subcontractor Eligibility – STTR

- Small Business MUST partner with a non-profit research institution
- Must perform 40% of the effort
- Research Institution must perform 30% of the effort
- Balance of effort for either or additional parties
- IP agreement must be negotiated between parties

Small business is ALWAYS the applicant & awardee!

Differences Between SBIR and STTR

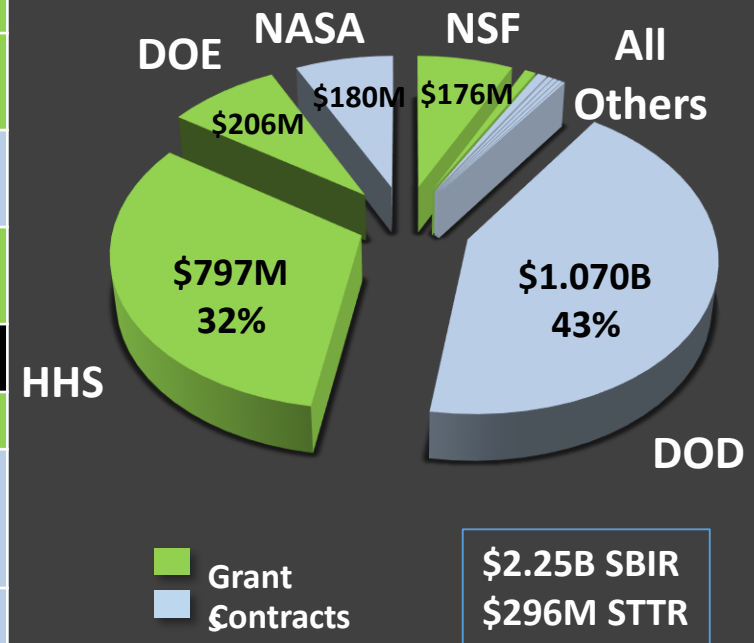
| | SBIR | STTR |
|------------------------|--|---|
| Partnering Requirement | Permits partnering | Requires a non-profit research institution partner |
| Principal Investigator | Primary employment (>50%) must be with the small business | PI may be employed by either the research institution partner or small business |
| Work Requirement | Guidelines: May outsource up to 33% (Phase I), 50% (Phase II) | Minimum Work Requirements: 40% Small Business 30% Research Institution Partner |
| Program Size | 3.2% (FY15 - \$2.25B) | 0.45% (FY15 - \$296M) |
| Participating Agencies | 11 agencies (extramural R&D budget > \$100M) | 5 agencies (extramural R&D budget > \$1B) |

The small business is ALWAYS the applicant and awardee!



SBIR/STTR Budget by Agency, FY2015

| Agencies with SBIR/STTR Programs | Budget |
|---|------------|
| Department of Defense (DOD) | \$ 1.070 B |
| Department of Health and Human Services (HHS), including the National Institutes of Health (NIH)* | \$797.0 M |
| Department of Energy (DOE), including Advanced Research Projects Agency – Energy (ARPA-E) | \$206.1M |
| National Aeronautics and Space Administration (NASA) | \$ 180.1 M |
| National Science Foundation (NSF) | \$176.0 M |
| Agencies with SBIR Programs | Budget |
| U.S. Department of Agriculture (USDA) | \$20.3M |
| Department of Homeland Security (DHS): Science and Technology Directorate (S&T) and Domestic Nuclear Detection Office (DNDO) | \$17.7 M |
| Department of Commerce: National Oceanic and Atmospheric Administration (NOAA) and National Institute of Standards and Technology (NIST)* | \$8.4M |
| Department of Transportation (DOT) | \$7.9 M |
| Department of Education (ED) | \$7.5 M |
| Environmental Protection Agency (EPA) | \$4.2 M |



Agency Differences

- ▶ Agency mission and success metrics
 - Never judge an agency by its title!
 - Wide variety of topic areas
 - Dual-use technologies
- ▶ Number and timing of Solicitations, proposal instructions, receipt dates, and review process.
- ▶ Award type, size and structure – contract vs. grant; base-and-options, etc.
- ▶ R&D Topic areas -- broad vs. specific, commercial market vs. acquisition focus
- ▶ Assistance available to awardees for commercialization

Typical Phase I Release and Close Dates

| AGENCY/PROGRAM | RELEASE | CLOSE |
|---|----------------------|-----------------------------------|
| Dept. of Commerce (DOC) (NIST & NOAA) | Jan / Nov | Mar / Feb |
| Dept. of Defense (DOD) Release 1.A / 2.B / 3.C | Dec / Apr / Aug | Feb / Jun / Oct |
| Dept. of Education (DOEd) Release | Dec | Feb |
| Dept. of Energy (DOE) Release 1 / 2 | Aug / Nov | Oct / Feb |
| Dept. of Health/Human Services (NIH, CDC, FDA) Omnibus Special Topics Contracts | Jan Varies Aug | Apr / Sept / Jan Varies Oct |
| Dept. of Homeland Security (DHS) (S&T & DNDO) | Nov | Jan |
| Dept. of Transportation (DOT) | Oct | Dec |
| Environmental Protection Agency (EPA) | Has Varied | Has Varied |
| Nat'l. Aeronautics and Space Admin. (NASA) | Jan | Mar |
| National Science Foundation (NSF) Release 1 / 2 | Oct / Apr | Dec / Jun |
| U.S. Dept. of Agriculture (USDA) Release | Jul | Oct |

Contracts vs. Grants

Contracting Agencies

- Agency establishes plans, protocols, requirements
- Highly focused topics
- Procurement mechanism
- More fiscal requirements
- Invoiced on Progress
- DoD, DHS, NASA, EPA, DOT

Granting Agencies

- Investigator initiates approach
- Less-specified topics
- Assistance mechanism
- More flexibility
- Allows upfront payment
- NSF, DoE, USDA

Contracting and Granting Agencies: HHS/NIH, DOC, ED

Is SBIR/STTR Program Right for Me?

- Do you have an idea for a technology that is:
 - Revolutionary not evolutionary, or a novel application of an existing technology
 - Improves the social, medical or other aspects of a person's life
 - Advances the existing state of science
- Starting a business or developing new products or services:
 - There Should Be a Sizable Market Awaiting Your New Product or Process, & a Realistic Plan for Getting There

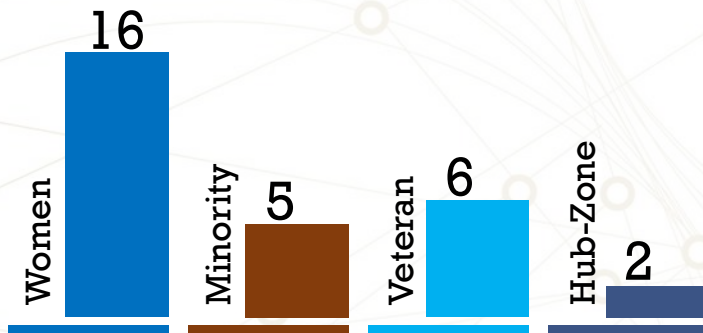
SBIR/STTR Highly Competitive

- Overall about 1 in 6 win Phase I
- For “Newbies” odds ~1:10
- 40 – 60 hours to write *decent* proposal
- Most companies lose money during Phase I
- Must prove feasibility and still compete for Phase II

Overall ~40% of Phase I awardees win Phase II

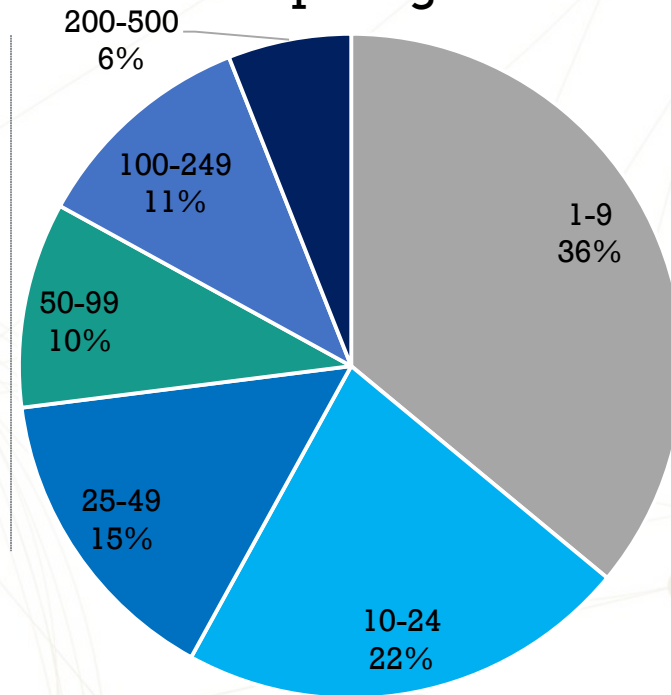
Who Participates?

% Phase I Awards



For statistical purposes only, small business self-certify ownership on the proposal coversheet. No preference is given.

of Employees of Participating Firms



Top 10 States = 72% of Awards

1. CA
2. MA
3. VA
4. NY
5. OH
6. MD
7. TX
8. CO
9. PA
10. FL

SBIR/STTR Advantages:

- Provides very early stage high-risk (high-payoff) R&D product development funding
- Not a loan – no repayment required;
- No loss of equity ownership
- No royalty payback
- Provides leverage for follow on funding
- Intellectual property rights remain with the small business
- Preferences, including sole source contracts, for follow-on Phase III government funding or procurement possible

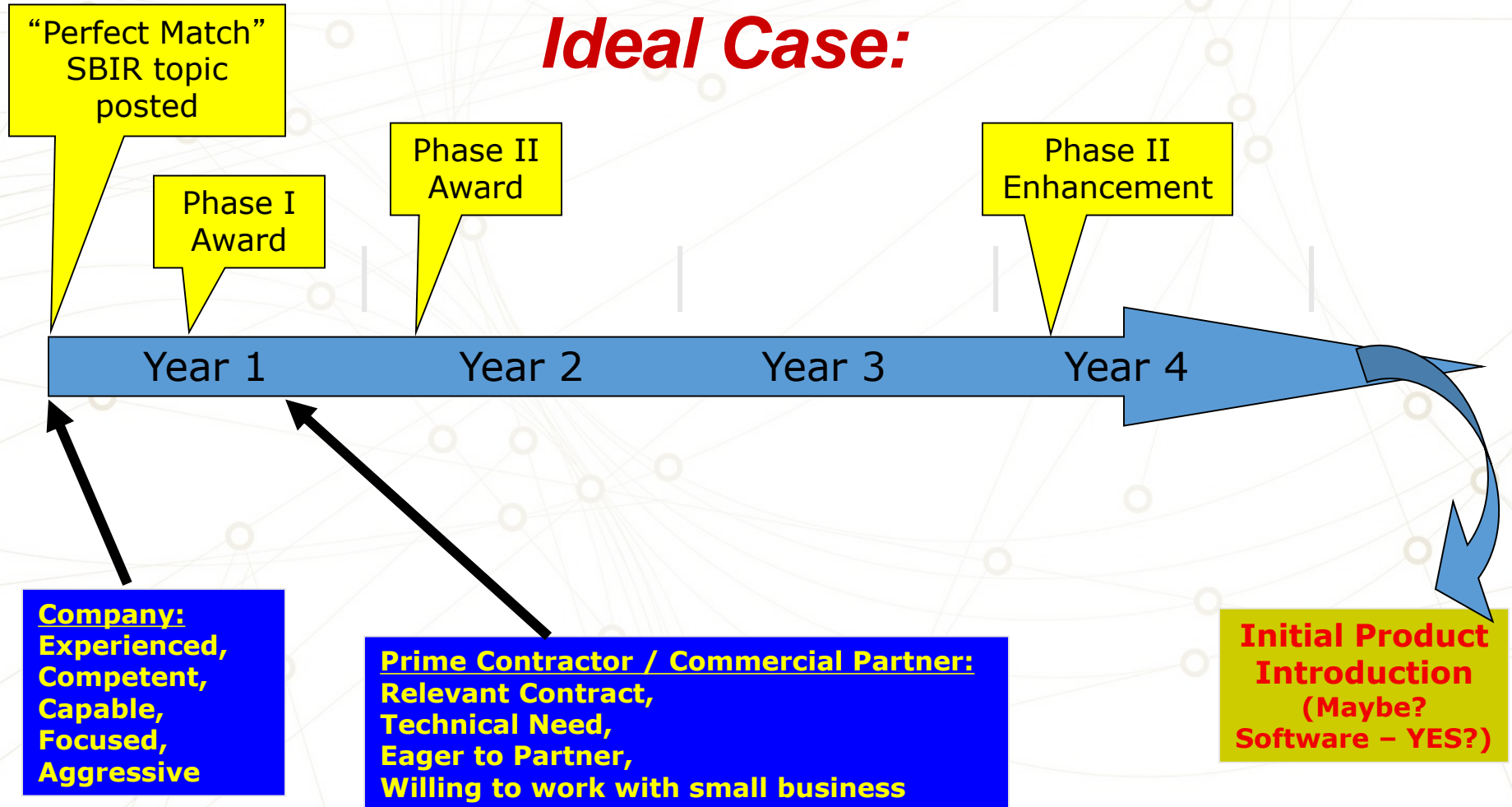


SBIR/STTR Disadvantages:

- Government, Government, Government
- Government contracts and accounting can be onerous
- Slow process (3-5 years through Phase II)
 - Not appropriate for short windows of opportunity
- Requires R&D capability and writing skills
- Must propose what agencies ask for
 - Very specific for contracting agencies
 - Much more leeway for granting agencies

Timeline: SBIR to Commercialization

Ideal Case:



Plan Ahead for SBIR Success:

- **Phase I is Required Step, Not Objective**
 - Most companies actually lose money in Phase I
 - Phase I required before Phase II
- **Phase II Much More \$\$ - Still Just a Step**
 - Strong Commercialization Plan is one key to winning
 - Need to show intent and ability to develop the product or service and get it to the customer (market).
- **Commercialization is Goal – Phase III!**
 - Commercial or other sales
 - Follow-on gov' t contracts for DoD, NASA, others

Keys to Long-Term Success:

- **Focus Strategically**

- Don't chase money opportunities "just 'cause we can"
- Focus on opportunities that take you towards goals
 - Work with customers (agencies) to create new opportunities

- **Network, Collaborate, Partner!**

- Work with university researchers wherever possible
 - Biggest single factor in winning Phase I SBIR
- Partner with fed. labs, esp. if agency is target customer
 - Cooperative R&D Agreements (CRADAs), Test Service Agreements may be paid for with SBIR/STTR funds
- Work with Prime Contractors where relevant
 - Can be subcontractor on SBIR/STTR
- Other partners for design, mfg., dist., service, etc.

University Partnership:

The single greatest factor for SBIR success is partnering with a research institution (esp. a university).

*Observation noted by top SBIR
experts and Program Managers*

- Nearly 50% of SBIR and 95% of STTR projects across agencies have university involvement
 - For some agencies, universities are involved in more than 50% of SBIR projects (e.g. NIH – 70%, NSF – 80%)
- ~20% of SBIR awards have sub-awards to universities
- Over 350 different research institutions have been involved in SBIR projects alone Recognized scientific expertise adds credibility

Writing for SBIR/STTR Submitting Winning Proposals

1

-
- Decide to apply – Commercialization Focus
 - Don't underestimate commercialization. State your plan NOW!
 - Read and follow announcement instructions (*each agency is different*)
 - Look at past awards to find focus areas. Know your customer. Make sure your approach is relevant
 - Talk to the Government P.I. about your idea
 - Register early – may take a few weeks
 - Carefully read the entire solicitation
 - Assemble a strong technical team
 - Get access to facilities and equipment

Writing for SBIR/STTR Submitting Winning Proposals

2

-
- Solve their problem (not a problem, or your problem)
 - Articulate how your innovative approach compares to the state of the art
 - Clearly and concisely answer who, what, when, where, how, and importantly, why
 - If there are technical barriers...address them!
 - Provide a detailed work plan and schedule with tasks that flow smoothly
 - Ensure that the proposed solution is reasonable, realistic, and feasible
 - Check spelling and grammar. Proposals can be difficult to read due to poor grammar

SBIR Proposal Review

- **Evaluation Criteria**
- Responsive to Solicitation Topic
- Scientific/Technical Merit
- Probability of commercial success
- Adequacy of research plan
- Qualifications of PI and other key personnel
- Adequacy of facilities

www.sbir.gov

- Links to all 11 SBIR/STTR agencies
- Key word search on topics – search both open and closed solicitations
- Past award information
- Agency solicitation release/proposal due dates agency
- SBIR/STTR Conference information

The screenshot displays the SBIR.gov website layout. It features four main columns of content. The first column, titled 'LEARN ABOUT', lists various informational links. The second column, titled 'I'M A(AN)...', lists roles and is highlighted with a red arrow pointing to 'Applicant'. The third column, titled 'I WANT TO...', lists action-oriented links. The fourth column contains social media feeds. At the bottom, there are sections for 'STATE SERVICES' (highlighted with a red circle) and 'NEWS'. The 'STATE SERVICES' section includes a map icon and a dropdown menu for selecting a state. The 'NEWS' section features a calendar icon and recent news items.

LEARN ABOUT

- Overview
- Policy Directive
- Authorization Act
- Intellectual Property
- Commercialization Successes
- FAQs
- Performance Benchmarks
- Participating Agencies
- How to Apply
- Report Fraud, Waste & Abuse

I'M A(AN)...

- Applicant
- Awardee
- Investor
- Large Business
- Agency Representative

I WANT TO...

- SBA** START A SMALL BUSINESS
- REGISTER MY COMPANY
- UPDATE MY COMPANY PROFILE/COMMERCIALIZATION
- SUBSCRIBE TO SOLICITATION POSTINGS
- CONTACT AN SBIR AGENCY
- SUBMIT AN SBIR/STTR RELATED EVENT
- FILE FOR IP PROTECTION
- LEARN MORE ABOUT GLOBAL INNOVATION EXCHANGE
- VIEW SELF HELP ONLINE TUTORIALS

STATE SERVICES

Update Closest Resources & Events
Select State ...

NEWS

Jazz Up Your Knowledge of NIH at the Spring 2017 NIH Regional Seminar in New Orleans

SBIR Pulse: 2016 Tibbetts Awards Special Edition (O&A with EnChroma CEO and

Social Media:

- NASA Small Business @NASA_OSBP
- SBIR/STTR Program @sbirgov

IPart Website – Your 1 Stop Resource



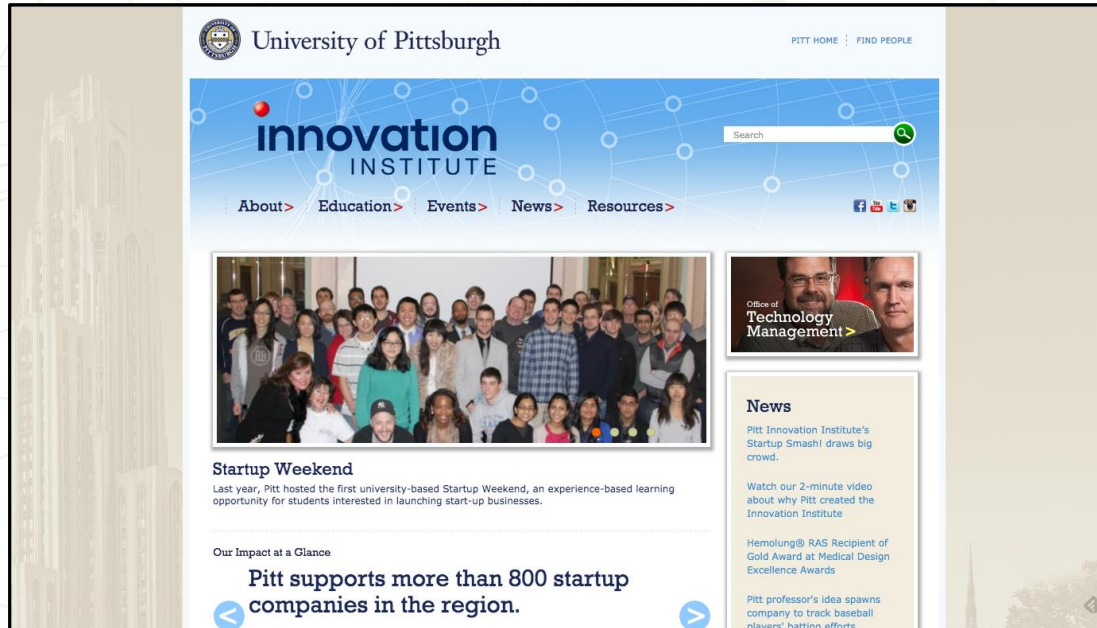
Plan Ahead: Registration Requirements

| | DoD | HHS/NI H | DOE | NASA | NSF | DHS | USD A | ED | DO C | EPA | DO T |
|---------------------------------------|-----|-------------|-----|------|-----|-----|----------|----|---------|-----|---------|
| SBIR.gov | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| SAM (sam.gov) | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| DUNS (dnb.com) | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| EIN (irs.gov) | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Grants.gov | | √ | √ | | | | √ | √ | | | |
| DoDSBIR.net | √ | | | | | | | | | | |
| eRA Commons (NIH.gov) | | √ | | | | | | | | | |
| FastLane (nsf.gov) | | | | | √ | | | | | | |
| PAMS (energy.gov) | | | √ | | | | | | | | |
| ASAP (asap.gov) | | | √ | | | | | | | | |
| FedConnect (fedconnect.net) | | | √ | | | | | | | | |
| EHB (nasa.gov) | | | | √ | | | | | | | |

Why Small Businesses Participate

-
- **Largest source of Federal R&D funds** for small businesses
 - **SBIR invests more than VC community** in pre-seed and early stage technology
 - **No dilution of equity**
 - Company retains **data rights** for 4 years (5 years in DoD)
 - SBIR companies produce:
 - 20X # patents/\$R&D as universities
 - 5X # patents/\$R&D as large companies
 - One in every **six VC dollars** goes to an **SBIR-involved firm**
 - Follow-on Phase III awards can be **sole sourced**
 - Company may maintain **ownership of equipment** purchased under Phase I and II
 - **Builds credibility** of company's research while learning government contracting processes to become a supplier
 - State economic development programs, angels, and VC use **SBIR as a pre-qualifier** for their investment

Questions?



innovation.pitt.edu

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2014 Annual Report