

FREE MONEY FEDERAL SBIR/STTR PROGRAMS

AMERICA'S SEED FUND™

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Ralph Hershberger CV

- Graduated from CMU in 1973 in Metallurgy & Material Science (Material Science & Engineering).
- MBA from Wharton in 1981.
- Entered the start-up world in 1990.
- Active in 3 startups with a 2-1 record.
- NSF SBIR commercial reviewer since 2001.
- Member of the NSF I-Corp pilot team.
- SBIR writer since 2005.
- Small Business columnist for the Arizona Daily Star.
- Member of Desert Angels and Maine Angels.
- Former Mentor-in-Residence at the AZ Center for Innovation.
- Former member and past President of the Southern Arizona chapter of SCORE.

SBIR SEMINAR TOPICS

- 1. History, Purpose, Participants, Definitions, Funding Continuum, Reasons to Consider
- 2. Proposal Mechanics, Registrations, Agency and Domain Selections, Awards
- 3. Proposal Review Process, Reviewers, Helpful hints
- 4. FAQ

SBIR/STTR HISTORY

- Government side-aside program, administered by the SBA, that requires 3.2% of an agency's award budget goes to small businesses.
- Started in 1974 by NSF.
- 11 Federal Agencies participate with multiple entities.

SBIR/STTR HISTORY

- SBIR (Small Business Innovation research) are for company and individual researchers. 87% of awards are for SBIRs.
- STTR (Small Business Technology Transfer) is a cooperative effort to expand public private partnerships that usually involves universities.

GENERAL REQUIREMENTS FOR AN SBIR.

- To be defined as a small business the grantee must:
 - Set up as a for profit organization
 - 500 or fewer employees
 - Principal Investigator (PI) must be employed by the company
 - Must be U.S. majority owned



PARTICIPATING AGENCIES

Agriculture

Commerce (2) NIST, NOAA

Defense (13)

Education

Energy

Health & Human Services-NIH (30), CDC

Homeland Security

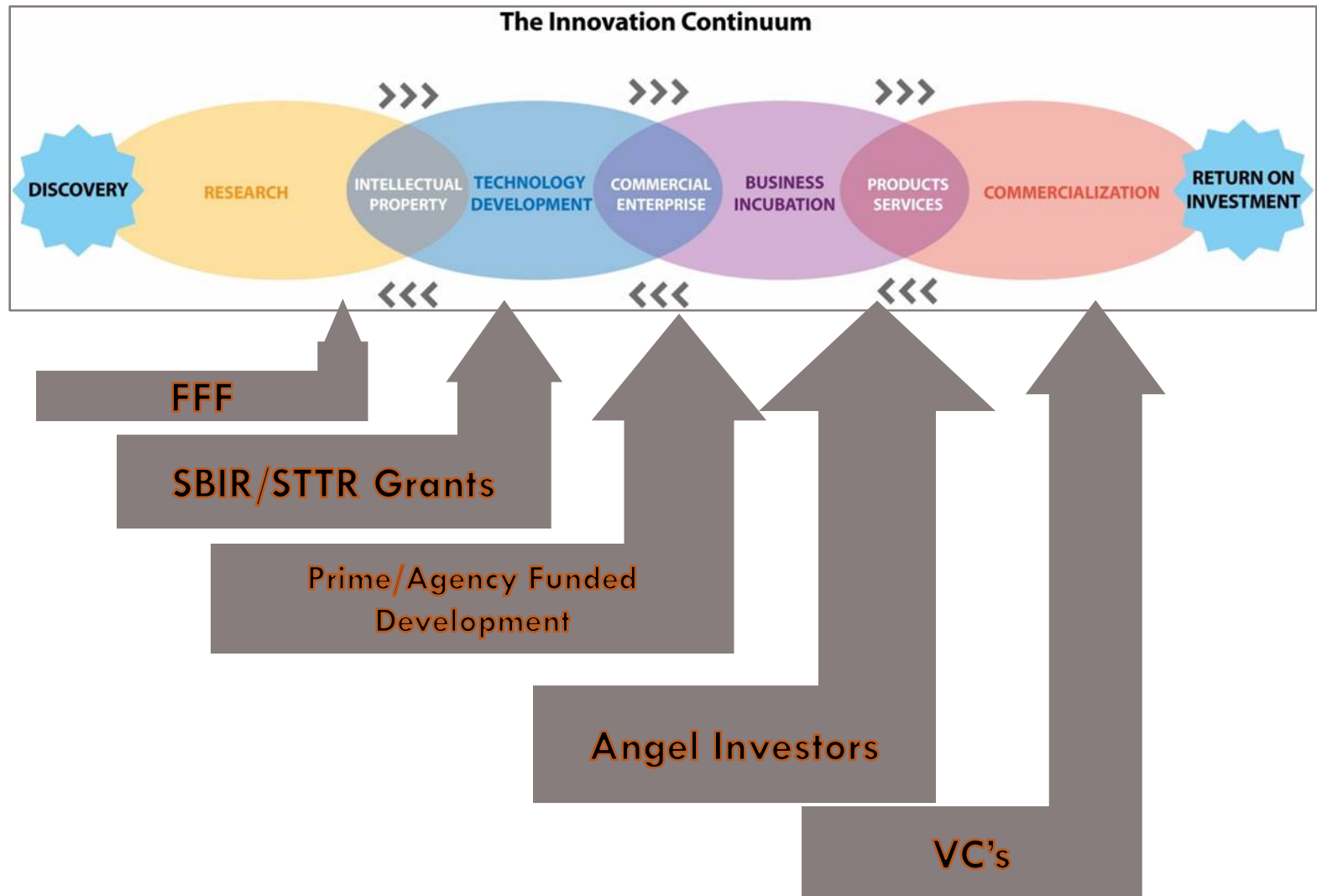
Transportation

EPA

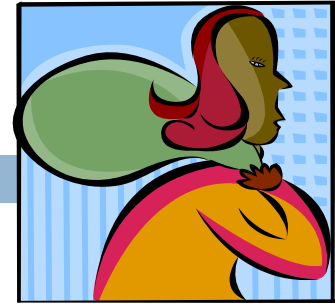
NASA

NSF

THE INNOVATION CONTINUUM



WHY DO THIS?



- SBIR programs fill a gap.
- What are the traditional sources of funding?
 - FFF - limited amounts.
 - Banks - reduce exposure, want 3 years of statements.
 - Angel investors - equity dilution, favored verticals
 - Venture capital - selective & moved to mezzanine financing
 - SBA loans - insured by the SBA but local bank determines approval, rates, and terms. They want collateral.
 - Microloans-Loans for small amounts.

WHY DO THIS (NSF)?

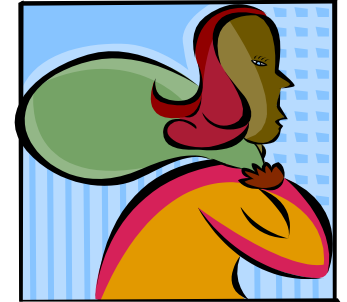
- All phases=\$1.505MM grant

- Phase 1 = \$225,000

- Phase 1B = \$ 30,000 @ 50%

- Phase II = \$750,000

- Phase IIB = \$500,000 @ 50%



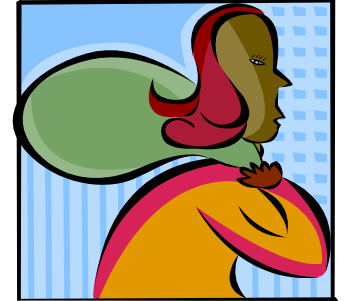
- PLUS the \$1.06MM raised to secure the "B" money.

WHY DO THIS (NIH)?

□ All phases=\$1,932,000 grant

□ Phase 1 = \$ 252,000

□ Phase II = \$1,680,000



HOW DO I GET STARTED?

- Create a corporate entity e.g. LLC
- Obtain an E.I.N.
- Register for a DUNS number
- Register in SAM
- Register in grants.gov
- Review agency SBIR websites for an appropriate domain.

DOMAIN SELECTION

- NIH & NSF are open solicitations i.e.
 - You define the problem and propose a solution
 - Select a relevant domain
- Most other agencies have determined what problem they want solved. You are proposing a solution.

NSF DOMAINS

- Biomedical
- Educational Technologies and Applications
- Information Technologies
- Advanced Manufacturing & Nanotechnologies
- Chemical Technologies
- Energy & Power Systems
- Digital Health
- Advanced Materials and Semiconductors
- Biological Technologies
- Other Topics
- Internet of Things (IOT)

ARE YOU READY?

- ❑ Phase I - \$225K (NSF)
 - ❑ Technology Elements
 - ❑ Research to establish innovation
 - ❑ Review prior awards/awardees
 - ❑ Proof of Concept
 - ❑ Do the critical experiment!
 - ❑ A realistic work scope (12 months).
 - ❑ Qualified team & facilities.



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ARE YOU READY?

□ Phase I

□ Commercial Elements

- Business Plan
- Potential Customers
 - Letters of support
- Early stage financing
 - Explore all options
- Prior commercial experience

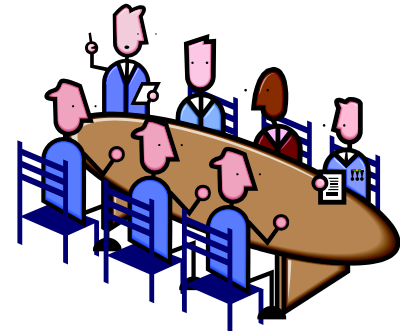


Unique Aspects of NSF SBIR/STTR

- Must be high-risk, high-payback innovations with the potential for commercialization.
- NSF does NOT fund
 - ▣ *Evolutionary* optimization of existing products and processes or modifications to broaden the scope of an existing product, process or application.
 - ▣ Analytical or “market” studies of technologies.
 - ▣ Combinations of existing technologies.

THE AUDIENCE (NSF)

- You are writing for two groups.



- Domain Area Program Directors
- Panel Reviewers

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THE AUDIENCE



□ PANELISTS

- NSF & NIH use outside experts.
- Panel consists of 6-10 reviewers divided between technical and commercial expertise.
- Technical reviewers are academics, heads of R&D, CTO, or CEO of start-ups.
- Commercial reviewers are business development pros, CEO, strategic & commercial leads from corporations & start-ups, and VC's.
- Some may have in-depth knowledge, but the proposal should include a tutorial element.

REVIEW DYNAMICS

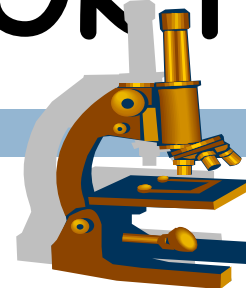
- At least 2 technical & 2 commercial panelists review each proposal.
- Prior to the panel meeting, reviewers rate proposals.
- Receive abstracts and select the subject areas that are within our expertise.
- Comment on the complete proposal based on a template of issues (www.nsf.gov).
- Excellent, very good, good, fair, poor.

WHAT DO WE LOOK FOR?



- Tell me a story.
 - Best to start with an identified market need v. a better mouse trap looking for a home.
 - Impress me. NSF wants a homerun. Incrementalism is fatal.
 - Context - a review of existing technology, patents, and products in the marketplace.
 - Reviewers will check your claims of needs, uniqueness, and patent coverage.
 - **DIFFERENTIATION**

WHAT DO WE LOOK FOR?



□ Phase 1

- Phase 1 emphasizes the proof of concept.
- Perform the critical experiment.
- Emphasize innovation, clarity of proposal, acknowledgement of key challenges.
- Evidence/validation of market need.
 - Third party support letters from potential partner companies, alternative funding sources.

REVIEW DYNAMICS

Meet at NSF to review proposals and rate them as:

- ▣ HR - Highly recommended
- ▣ R - Recommended
- ▣ DNC - Do not consider.



- ▣ PD's make final selections and recommendations to senior NSF Engineering Directorate staff.

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FAQ

WHAT ARE THE ODDS?



- The current NSF Phase 1 review cycle has an award pool of \$33,750,000. Awards are \$225K so there are 150 Phase 1 awards per this cycle.
- NSF reports that the success rate for Phase 1 proposals is 10-15%. This is entirely dependent on the number of proposals submitted.

□

FAQ

IS MY IDEA WORTHY?



- That's the purpose of the initial summary to the relevant PD. If they believe the idea has merit, you will be invited to submit a full proposal.

□

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FAQ-WHAT CONSTITUTES A COMMERCIALIZATION PLAN?

- ❑ The key element is validation of customer interest.
- ❑ You must approach potential customers and discuss your concept. Try to answer:
 - Does it solve any of their problems?
 - If so, what is it worth to them?
 - How many would they buy over time?



FAQ-Can A Rejected Proposal be Resubmitted?

- **Varies by Agency**
 - **NSF Phase 1-Yes**
Phase 2-No
 - **NIH Phase 1-Yes**
Phase 2-Yes

Each proposal receives a detailed set of reviewers' comments that explains pros and cons of the proposal and suggestions to include for a resubmission.