The Small Business Innovative Research Program (SBIR)

How to get the federal government to pay you to develop your idea

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Personal Background

- Over 25 years writing and managing SBIR programs
- Obtained numerous Phase I and Phase II awards as Principal Investigator
  - 21 Phase I
  - 9 Phase II
- Started two companies based on SBIR research
  - Spinouts from SBIR "Mills"
  - Extreme Devices made field emission electron guns for CRTs
    - Raised over $34 M in VC funding
  - Faradox Energy Storage made high temperature film capacitors
    - Obtained a $1 M from the Emerging Technology Fund

SBIR and STTR Programs

- Dedicated federal R&D funds set-aside for small businesses (<500 employees)
- <u>S</u>mall <u>B</u>usiness <u>I</u>nnovative <u>R</u>esearch (SBIR)
  - 2.3% of federal R&D ~$2.4 Billion
  - Growing to 3.2% by 2017
- <u>S</u>mall <u>B</u>usiness <u>T</u>echnology <u>T</u>ransfer (STTR)
  - Work with University or Not-for-profit Institution
  - 0.35% of federal R&D ~$300 Million
  - Growing to 0.45% by 2016
- Each agency runs its own program using federal guidelines
- Goal of programs is to further agencies mission

Research is Funded in Phases

- Phase I: **Proof of Concept**
  - Typically 6-9 months, $80K - $150K
  - May have Phase I option
- Phase II: **Development of Prototype**
  - Typically 2 years, $1M
- Sometimes Phase I and Phase II can be combined together in "Fast Track" proposal
- Phase III: **Commercialization**
  - Not part of SBIR program
  - Possible BAA, Phase II enhancement or other government funding to continue development
  - Angel / VC funding

Advantages of SBIR Funding

- "Free money" - No repayment required
- No loss of equity
- Fund high-risk laboratory research
- Proposals less than 25 pages (many <20 pages)
  - Really 5-10 pages of original writing
- Preferences for follow-on contracts
- Geared towards "Pre-seed" funding
- Provides technical validation for other investors

Disadvantages of SBIR funding

- Government accounting procedures
- Unfunded periods between proposal submission and award for both Phase I and II
- Proposals are technology based
  - Usually R&D oriented (PhD or MD helps)
  - May require expensive laboratory facilities and equipment
- Must write proposal towards a particular topic
  - Some agencies (DoD) have very specific requirements
  - Some agencies (NSF, NIH) have general topic areas

Realities of SBIR Funding

- SBIR Mills-There are many companies that exist solely on SBIRs
  - Program managers (DoD) tend to fund companies they know
  - Have a core group of PhD's writing SBIR proposals
    - Always looking for next SBIR instead of commercializing existing projects
    - Trying to eliminate this by using commercialization score
- Some topics are written for a particular company (DoD)
- Government accounting is onerous- more detailed than GAP
  - Government (DCAA) audits required for Phase II (DoD)
  - Need to know government terms like CPFF, FPFF, FAR, DFAR etc
  - You can get free help setting up accounting system
    - Procurement Technical Assistance Center (TPAC)
- Rules do not allow direct charge of marketing and sales to contract
- Maximum 7% fee or profit
- Valley of death still exists
  - There is a gulf between Phase II prototype and commercial product

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- Eligibility requirements
  - Small, for profit business (<500 employees)
  - At least 51% US owned
    - Preferences for women owned, HUB zone, Veteran owned businesses
  - PI must be 51% employee at time of contract award
  - PI and employees **may** need to be US citizens (ITAR)
- Proposal
  - < 25 pages in length (including budget)
    - Follows specific guidelines from agency
  - Helps to read solicitation on Agencies web site
  - Helps to know government accounting rules
  - Limited to less than 7% fee (profit) on work

Agencies Giving SBIR Awards

- **Depart of Defense** (SBIR $1.2B / STTR $135M)
  - "War Fighter" oriented, very specific topics, contracts
- **National Institutes of Health** (SBIR $571M/ STTR $69M)
  - Institute centric, general topics, grants – awards can be large
- **Department of Energy** (SBIR $128M / STTR $13M)
  - Energy related and national lab (accelerator) topics - grants
- **NASA** ($102 M SBIR / $12M STTR)
  - Space related research – Phase II deliverable - contract
- **National Science Foundation** ($96M SBIR / STTR $13M)
  - Broad topics Strong focus previous NSF funded research and commercialization - grants
- Department of Homeland Security (SBIR $25M)
  - Emphasis on practical innovations - contracts
- USDA, ED, DOC, EPA, DOT (SBIR ~$54M)

Grants vs Contracts

Contracting Agencies
(DoD, NASA, DHS)

- Focused Topics
- Contract monitor works closely with contractor
- Subject to FARs
- Possible ITAR restrictions
- Usually reviewed by agency employees

Granting Agencies
(NSF, NIH)

- Less specific topics
- Investigator has more flexibility in approach
- Proposals peer-reviewed

Registration Requirements

- All Companies must register with these web sites
  - www.SBIR.gov and www.SAM.gov
  - These sites require EIN and DUNS number
- Additional agency specific required registration
  - DoD: www.dodsbir.net
  - NIH: www.grants.gov and era.NIH.gov (eRA commons)
  - DOE: www.grants.gov and www.pamspublic.science.energy.gov (PAMS)
  - NASA: sbir.gsfc.nasa.gov EHB (electronic hand book)
  - NSF: www.nsf.gov/eng/iip/sbir Fastlane

Winning a SBIR

- **KNOW YOUR CUSTOMER**
  - Different agencies evaluate proposals differently
  - NSF, NIH use peer review panels
    - Typically university experts
    - NSF has investors as members of panel
  - DoD, NASA, DOE use employees to evaluate proposals (Government lab personnel and program managers)
  - Talk to the Technical Point of Contact (TPOC)
    - All agencies have TPOC or program manager to answer questions – Call or E-mail them!
    - TPOC can provide feedback before solicitation opens
- Letters of support important

Network and Collaborate

- Work with Universities, Non-profit labs
  - Technical expertise / facilities
  - Required for STTR, helpful for SBIR
- Work with Prime Contractors
  - Especially useful for DoD
  - Can be buyer at end of Phase II
  - They understand procurement process
  - All primes have SBIR points of contact

Getting Started

- You must register with agencies before submitting proposal
    - Good starting place is www.SBIR.gov
    - DoD: www.acq.osd.mil/osbp/sbir/
    - NIH: grants2.nih.gov/grants/funding/sbir.htm
    - NSF: www.nsf.gov/eng/iip/sbir/
    - NASA: sbir.gsfc.nasa.gov
    - DOE: science.energy.gov/sbir/
- Agency sites have example proposals and information about registration and submission

Final Words of Advice

- Determine "best" agency for your technology
- All agencies have deadlines when proposal are due – START APPLICATION PROCESS EARLY
- Read the solicitation carefully
- Interact with the TPOC
- Many VC's, Angels, ETF, etc view SBIR awards as technical validation of your technology
- There are many successful companies that got their start through SBIR awards