Regional Resources for High Technology Companies

“The Basics of SBIR/STTR Grants and other Public & Private Funding Sources: For Innovation and Technology

Clinical and Translational Science Center (CTSC)
Cornell Center for Technology Enterprise and Commercialization (CCTEC)

Friday, February 27, 2009
Wikipedia

• *innovation* may refer to both radical and incremental changes in thinking, in things, in processes or in services. *Invention* that gets out in to the world is innovation…something new must be substantially different to be innovative, not an insignificant change.

• *Commercialization* is the process of introducing a new product into the market. The actual launch of a new product is the final stage of *new product development*, and the one where the most money will have to be spent for advertising, sales promotion, and other marketing efforts.
What is ITAC?

- 20 year old hybrid economic development corporation

- Mission: is to strengthen the economy of New York City by improving the performance of small to mid-sized firms that create or produce technical and manufactured products

- ITAC provides in-depth, highly specialized support to technology & advanced manufacturing firms in NYC to help them grow. ITAC’s areas of practice include:
  - Energy Tech
  - Life Sciences
  - Green Tech
  - Software
  - Advanced Manufacturing
Why companies use us?

- Outside/independent look at the company.
- We build capacity in the company through training.
- We create the best team for the job using outside and internal resources.
- Our knowledge of small and emerging Tech & Mfg solutions & NYC issues.
- We are evaluated based on the impact on the companies.
- Low cost and some free services
How we work with companies?

- **Assess** the company’s technology, market opportunity, operations, management team & identify opportunities

- **Determine** the CEO’s willingness to take advice, tell their story and how they relate to and utilize strategic partners

- **Prioritize** the issues with the business owners (what keeps you up at night?)

- **Create** best team, resources and strategic partners to implement solutions

- **Access** funding (Grants, loans, Angel, VC)

- **Manage** project/task through to successful implementation.
Grants are an overlooked source of early stage funding

- Federal SBIR/STTR grants to build and test innovative new products
- State NYSERDA grants—energy-related new product development
- State NYSTAR TTIP grants—for businesses commercializing university technology
- Federal TIP (NIST MEP—was ATP Program)
- QETC Tax Credits (NY)
 Reasons for Academic Researchers to Be Interested in SBIR

• Non-profit research funds at universities are limited

• Congress demands return on investment for R&D programs

• The U.S. supports technology development to meet national objectives in military, commerce, health, education, space, energy, agriculture, transportation, the environment and basic science
SBIR/STTR: innovative ideas that meet federal R&D needs

- Small Business Innovation Research (SBIR)/Small Business Tech Transfer Program (STTR)
- Highly competitive
- Three-phase award system
- The Government is your customer
- Exploitation of scientific breakthroughs
- Innovative use of emerging technologies
- New application or major improvements to existing technologies
- STTR works like SBIR you just need a research or university partner is required
SBIR "Innovation" Model

Private Sector Investment/Non-SBIR Federal Funds (before/during/after!)

PHASE I
Feasibility Research

PHASE II
Research towards Prototype

PHASE III
Product Development to Commercial Market

Federal Investment

Taxes
Reasons to seek SBIR/STTR funding

- More than $2.3 Billion available
- NOT A LOAN – no repayment
- Provides recognition, verification, and visibility to the agencies
- Potential leveraging tool to attract venture capital/other sources of $$$
- Stimulates local and state economies = stronger national economy
- Provides seed money to fund high risk projects
- Small business concerns are recognized as a unique national resource of technological innovation
- **DO YOUR PATRIOTIC DUTY…SPEND THIS MONEY**
Data: SBA Tech-Net web site

• In 2005, New York increased its number and amount of SBIR/STTR awards for the fifth straight year -- an almost 250% increase to $106.3 million.

• Since 1995, New York companies have received almost 2,000 SBIR and STTR awards totalling over $682 million.

• In 2005, almost $2.1 billion in SBIR and STTR funds were awarded by the eleven participating Federal agencies.

• California and Massachusetts have consistently ranked first and second in the nation, respectively, in the amount of SBIR/STTR funds awarded. In 2005, Massachusetts was awarded 2.6 times more funding and California almost 4 times.

• (http://tech-net.sba.gov/tech-net/public/dsp_search.cfm)
SBIR builds value in your business

- Not dilutive like equity investment
- No future debt accrued
- Inventor retains 100% intellectual property and commercialization rights
- Licensing and royalties = future revenue streams
- Proof of concept
- First customer
- First level of investment
- Verification of your innovative technology
- Peer-reviewed
- Approximately 1 in 10 are funded for Phase I
- Reduces technological risk for investors (angels/VCs will NOT fund R&D)
Funding for SBIR projects differ by agency and solicitation

- Phase I---from $75,000-100k for proof of concept
- Phase II---$750K- $1.5 million for prototype
- Phase III---commercialization opportunities with agencies and private firms
- 2.3 Billion available
- **NYS Firms raised over 100m-Ranked 5th in country (CA 1st 416m)**
Three Phases of SBIR

• Phase I: Scientific and technical feasibility (Six months)
• Phase II: Concept refinement, generally leading to prototype (Two years)
• Phase III: Commercialization (non-SBIR funded phase)
12 agencies host SBIR programs, and 6 host STTR programs

- Agriculture
- Commerce
- Defense - also STTR
- Education
- Energy - also STTR
- EPA
- Health and Human Services -
  - National Institutes of Health - also STTR
  - Health Care Financing Administration
- Homeland Security - also STTR
- Transportation
- National Aeronautics and Space Administration - also STTR
- National Science Foundation - also STTR
- (New) Homeland Security
Eligibility for SBIR/STTR

- American-owned, independently operated
- For-Profit business less than 500 employees
- Not dominant in the proposed field of operation
- The Principal Investigator is employed by the business over 50% time (SBIR)
- Research space must be available to and under the control of the SBIR grantee for the company’s portion of the proposed project
General Evaluation Criteria

- Scientific and Technical Merit of the Innovation (the Research) and it’s relevance to the Agency’s objectives and mission

- Qualifications of the Key personnel and the Principal Investigator (PI)

- The strategy for Commercial Potential ("Marketability") of the Innovation
Agency Differences

1. R&D topic areas (broad vs. focused)
2. Number and timing of solicitations
3. Dollar amount of award (Phase I and II)
4. Availability of funds
5. Proposal preparation instructions
6. Proposal review process
Important facts to remember

- Eligibility is determined at time of award
- No appendices allowed in Phase I
- PI is NOT required to have PhD. or M.D.
- 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
Read And Follow Solicitation Instructions Carefully

- Administrative review
- What counts towards page limits?
- What is the deadline: **date and time**
- How to submit: electronic vs. mail (EPA)
- Formatting:
  - Font type and size
  - Margins
  - Figures, graphs, and tables
- Include all components **in order**
Give Yourself Time

- If possible, allow at least 8-12 weeks for preparation
- Plan ahead for letters of support
- Electronic submission may take time and/or multiple tries (NIH)
  - Register early (today!)
  - Grants.gov registration takes up to two weeks
  - Month before deadline
  - Must have Tax ID (Be a company)
  - Miss a check box? FILE 13
Tactical strategies

- Have a clear vision of the customer
- Leverage federal and state resources
- Leverage relationships with outside organizations
- Consider the use of experts
- Leverage personal resources
- Ask for letters from potential customers
- **Program is not static. Read the rules.**
- Having a Ph.D. in the company doesent hurt
- Write about commercialization strategy in the SBIR/STTR
Business Development Issues

• Developing a Business Plan
• Understanding your market
• Protecting Intellectual Property
• Accounting Systems and Audits
  – Record keeping and cost allocation
  – Direct and indirect costs
Step 1: ID all topics that relate to your company’s R&D interests

www.zyn.com
www.sbir.gov

Links to SBIR information resources
SBIR/STTR solicitation schedules
Step 2: review solicitation information for the opportunities you have selected

- Pre-solicitation announcements
- Guidelines
  - Requirements - technical and personnel
  - Award amounts
  - Application and submission details
- Research funded in the past
- Sample or model proposals
Step 3: to contact each agency to learn why the agency is funding your topic

- Treat each agency as you would treat any customer
- Technical questions allowed before release date
- Only administrative questions after release date
- DOD has a pre-release period
- HHS and Agriculture not concerned about release date restrictions
You must be prepared to sell

• An investor is an investor
• Evaluate how you fit the funder’s needs
• Understand the funder’s motives and values
• Be able to articulate how your approach is different from competing technologies and how you plan to bring your product to market
General Writing Tips

• Be clear and concise
• Use figures, bullets, and call-out boxes so a browsing review can understand
• One picture = 1,000 words
• In technical section, write at a level to show your depth of understanding
• Anticipate problems you may encounter and what you may do about them
• don’t be BORING
Make Key Points Obvious

- Reviewers do not necessarily read your proposal carefully
- Use the same language and order for the various sections as the solicitation instructions
- Use formatting to highlight important points
- Consider the whole document to be a marketing tool: sell your idea, your company and your unique ability to complete the project
Be Persistent

• Programs are highly competitive
• Chances of receiving funding are better if you submit multiple, high quality proposals
• No one can guarantee a “secret” method for submitting a winning proposal
• Not wasted effort: can assist with business plan, refine development, establish productive relationships, regardless of award
• Resubmit, ask why you didn’t get it, and learn from it
Identify Potential Strategic Partners

- “Strong interest” is all that is required at Phase I
  - Write the letter for the company
- A “name brand” strategic partner who expresses strong interest in the technology effectively guarantees high marks on a Phase I commercialization strategy
- Have a letter of interest from a key U.S. strategic partner (or lead customer) that demonstrates access to channels to market, financing to bring the product forward
Sources of Capital

- Friends, family, fools
- SBIR/STTR
  - Key – funding of high risk, early stage ideas
- Corporate funding
- Angel Investors
- Venture Capital
- Debt Capital (Banks)
- QETC Tax Credits
NIST/TIP
(Technology Innovation Program)

- TIP is to make cost-shared awards of no more than 50 percent of total project costs to high-risk R&D projects that address critical national and societal needs in NIST’s areas of technical competence.
- Projects may be proposed either by individual, for-profit companies or by joint ventures that may include for-profit companies. Awards are to be limited to no more than $3 million total over three years for a single-company project or no more than $9 million total over five years for a joint venture.
NYSTAR-NYS Foundation for Science, Technology and Innovation

• **CATS**-Centers for Advanced Technology support university-industry collaborative research and technology transfer in commercial relevant technologies. The CAT program was created in 1983 to facilitate the transfer of technology from New York’s top research universities into commercially viable products produced in the private sector.

• **CARTS**- (Mini-CATS) The CART Program is designed to: spur technology-based research and economic development in New York; promote research collaboration and innovation with New York businesses; promote workforce development; better leverage State funding with investments from the Federal government, industry, foundations, and not-for-profit organizations with an economic development mission; and increase competitiveness of New York companies.

• **TTIP**-The Technology Transfer Incentive Program supports a wide array of activities associated with bringing new technologies to the marketplace including improvement of product prototypes and existing commercial products, new product development, development of manufacturing processes to commercialize prototypes, and filing patent applications. $$$
NYSTAR-NYS Foundation for Science, Technology and Innovation (2)

- The NYS Science and Tech Law Center advises Centers for Advanced Technology, Strategically Targeted Academic Research Centers, Advanced Research Centers, Centers of Excellence, Generating Employment Through New York Science Centers, and other academic institutions and NYSTAR on technology-related legal issues. The Law Center will conduct research on issues relating to the work being performed at these Research Centers to increase awareness and understanding of such issues as the protection and commercialization of intellectual property, technology transfer practices, patents, copyright and trademark law, and licensing agreements. In addition, the Law Center will make relevant information available to startup and early stage technology companies outside of university settings.

- The Small Business Technology Investment Fund (SBTIF) provides start-up high-tech companies throughout New York State with a source of venture capital to promote new job creation and economic growth. The Fund makes early stage equity investments in companies that have developed innovative technology products or services and that display significant competitive advantage. It also offers technical and managerial services to growing technology-based business ventures. $$ $$

- www.nystar.state.ny.us
NYS Energy Research and Development Authority

http://www.nyserda.org/funding/

- areas of interest:
  - Industry, buildings, energy resources, transportation, environment
- Grant size varies, up to $500,000+
  - Minimum 50-50 match required
- New initiatives announced:
  - Green building design
  - Alternative-fuel vehicle strategies
  - Future energy systems
Three tax credits for Qualified Emerging Technology Companies:
1. The Capital Tax Credit \textit{(nonrefundable)},
2. The Employment Tax Credit \textit{(refundable)} and
3. The Facilities, Operations and Training Credit \textit{(refundable)}.

Has three components:
1. An 18\% credit for capital costs for R&D facilities;
2. A 9\% credit for qualified research expenses; and,
3. A credit of up to $4,000 per employee for job-related coursework at New York state universities or colleges. The entire Facilities, Operations, and Training Credit is refundable up to $250,000 a year (but is not a refundable credit) and is available for up to four consecutive years.
Who Can Claim the QETC Credit:

1. Must be a QETC.
2. 100 full-time employees or less, of which at least 75% are employed in New York State.
3. Gross revenues, (including affiliates and related members), of $10 million or less as a stand alone company or $20 million as part of a controlled group in the *preceding tax year*.
6. The company’s primary products or services must be classified as emerging technologies. This means more than 50% of gross receipts must be derived from emerging technologies.
QETC Example

QETC Benefit Example of Facilities, Operations, and Training Credit

$1 million – Total Assets – Software Developer – Investment Planning Tools
Qualified Research Expenses - $211,000 * 9% = $18,990
R&D Computer Equipment - $160,000 * 18% = $28,800
Total QETC-Refundable $47,790
Third Party Investors

- Another company
  - Con Ed, Intel, Kodak
- Venture capital firm
  - Advise, resources
- Individual “angel” investor
- State Government
  - NYSTAR, TTIP, SBTIF
- Local Government
- Federal Govt
  - NIST, Federal Labs
- Universities
- Any combinations of the above!
- Grants alone don’t solve all issues and are part of an overall strategy
ITAC
SBIR Regional Specialists

We *can*:  
- Help you find the right opportunity  
- Match you with a research lab partner  
- Match you with a small business  
- Advise you on proposal strategy  
- Read your proposal with comments

We *can’t*:  
- Write the proposal *for you*
Summary Points for SBIR/STTR

- Form partnerships and establish credibility
- Tremendous diversity among agencies, programs, solicitations, reviewers, and winning proposals
- No guaranteed “WIN” strategies
- Guidelines and suggestions based on 11 agencies and regional companies’ experiences
- The SBIR program is not static—Look for evolutionary changes
Examples

- Childrens Progress: 3 mil to date (SBIR)
- Transcendent Intl, Inc: 2.5 mil to date (SBIR)
- Zweave 1.5 mil (SBIR)
- Gaia Power Tech (NYSERDA) 2 mil to date
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On the horizon

• (new) NYC Seed  http://www.nycseed.com/  $200k No idea is too early & NY CIF, NY CEDC, ITAC. Polytech (Launched)

• Planet Eureka: National Innovation Marketplace  
  http://www.planeteureka.com/  (Rollout September 2009) Grumman; Herman Miller; Amway; Walmart; Harley Davidson; Curbell (Med Devices)
Thank you CTSC

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