Industrial Innovation and Partnerships Overview

Spring 2014
ENG Advisory Committee Meeting

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Industrial Innovation and Partnerships
Directorate for Engineering
Driving the Expansion of Innovation Capacity

- Innovators / Entrepreneurs
- Partnerships / Business
- Technological Innovations

Cultivating innovative thinking and entrepreneurship

- Stimulating strategic partnerships
- Catalyzing technology commercialization

Providing technology translation pathways
Providing Technology Translation Pathways

Discovery

Development

Commercialization

Translational Research

Valley of Death

Universities

Small Businesses

Foundations

Investors

Industry
Accelerating Innovation Research (AIR)
- To capitalize on NSF investment in basic research

NSF funding lineage required
Linking to previously NSF-funded basic research awards

- Technology Translation (TT)
  - Proofs-of-concept and/or pre-commercial prototypes
  - Promote entrepreneurial thinking among faculty and students

- Research Alliance (RA)
  - Develop innovation ecosystem
  - Stimulate entrepreneurial & innovation activities
Small Business Technology Transfer (STTR)

- A vehicle for university technology commercialization
  - Mandatory subcontract to universities
  - Increased Phase I from $150k to $225k
  - Encourage the commercialization of previously NSF-funded basic research

- In June 2013 cycle
  - 54% of STTR submissions showed NSF funding lineages
  - Linking to 321 previously NSF-funded basic research awards in one cycle
Stimulating Strategic Partnerships
Industry University Cooperative Research Centers (I/UCRC) – Building Long-term U-I Partnerships

- Industry members
- Pooled Member $’s
- Cooperatively defined research portfolio
- Requires trust be built
- Universities

Value
- New knowledge for precompetitive needs shared by industry members
- Access to students
- Leverage funding
- Industry-relevant education
- Build research strength

Seed funding
I/UCRC Framework

NSF
I/UCRC Program Impacts

- 8:1 Leveraging of Program funds in ’13
- Each dollar invested by NSF-I/UCRC generated an estimated $64 in impacts*

*Based on case studies of three centers

FY 2012-2013 NSF-I/UCRC Center Structure Database
• 67 centers, 191 sites (4 international sites)
• About 1,100 memberships
• 2077 students participated in 2013
• 30% of students graduated in 2013 were hired by industry members
Catalyzing Technology Commercialization
Positioning of NSF SBIR/STTR Program
– Help Mitigate Technical, Business and People Risks
Company/Team Risk

Basic Research
SBIR/STTR
VC/Angel

Support tech startups

Financing Risk
Product/Technology Risk
Market Risk
Supporting High-Risk Tech Startups

- FY2012 SBIR/STTR Phase I awardees
  - 86% - 10 or fewer employees
  - 90% - 5 years old or younger

- FY2013 SBIR/STTR Phase I awardees
  - 81% - 10 or fewer employees
  - Median company age = 4 years
Connecting Our Grantees to Market Reality
- Help mitigate market risk

- Leverage large networks of other organizations
  - Providing opportunities to network with potential customers and investors

- Support SBIR/STTR grantees to attend selected tradeshows/venture fairs (CES ACA, ISTE, BIO, FETC etc.)
  - Partnering with 37 organizations
  - About 200 grantees at 50 events with 500K attendees (2013-2014)
Encourage Fundraising from Private Sectors
- *Help mitigate financing risk*

- Phase IIB supplement
  - Match 50% of third-party investment up to $500k

- Third-party investment that SBIR/STTR Phase II grantees collectively raised
  - $78 million in FY2012
  - $83 million in FY2013

- 19 acquisitions in last 2 years for >$600 million acquisition value
Cultivating Innovative Thinking and Entrepreneurship
Innovation Corps (I-Corps)

- Why I-Corps?
  - Capitalize on previously NSF-funded basic research
  - Cultivate entrepreneurial culture

- I-Corps approach
  - "Lean Launchpad" curriculum
  - Team: PI + Entrepreneurial Lead + Business Mentor
  - Experiential entrepreneurial education
Building the Nation’s I-Corps™ “Fabric”

I-Corps™ Nodes
- 5 nodes

I-Corps™ Sites
- 4 sites, 11 planned

I-Corps™ Mentors
- Extensive network (200+)

I-Corps™ Teams
- 296 teams, 42% started companies, one acquisition
Cultivating Entrepreneurship

- Launched SBIR “Beat The Odds” boot-camp
  - 148 small businesses participated in 2013-14
  - I-Corps concept: customer discovery
  - Overwhelmingly positive feedback

- SBIR/STTR Grantees Conferences
  - Focus on entrepreneurial education
  - USPTO partnership
Providing Students with Real-Life Startup Experience (SBIR/STTR)

- Supported 127 undergraduate and high-school students in FY2013
- Supported 70 Postdoc fellows in last 2 years
IIP by Numbers

- FY2013
  - Total operation budget: ~$202M
  - 2216 proposals received
  - 638 awards
  - 96% of proposals were completed within 6 months

- Twitter: >1,700 followers, about 35,000 accounts reached/week
- YouTube: 45 videos, more than 5,000 views
- ListServ: >1,800 subscribers
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Cultivating innovative thinking and entrepreneurship

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Providing technology translation pathways