

Catalyzing University Technology Commercialization -- NSF SBIR/STTR Program

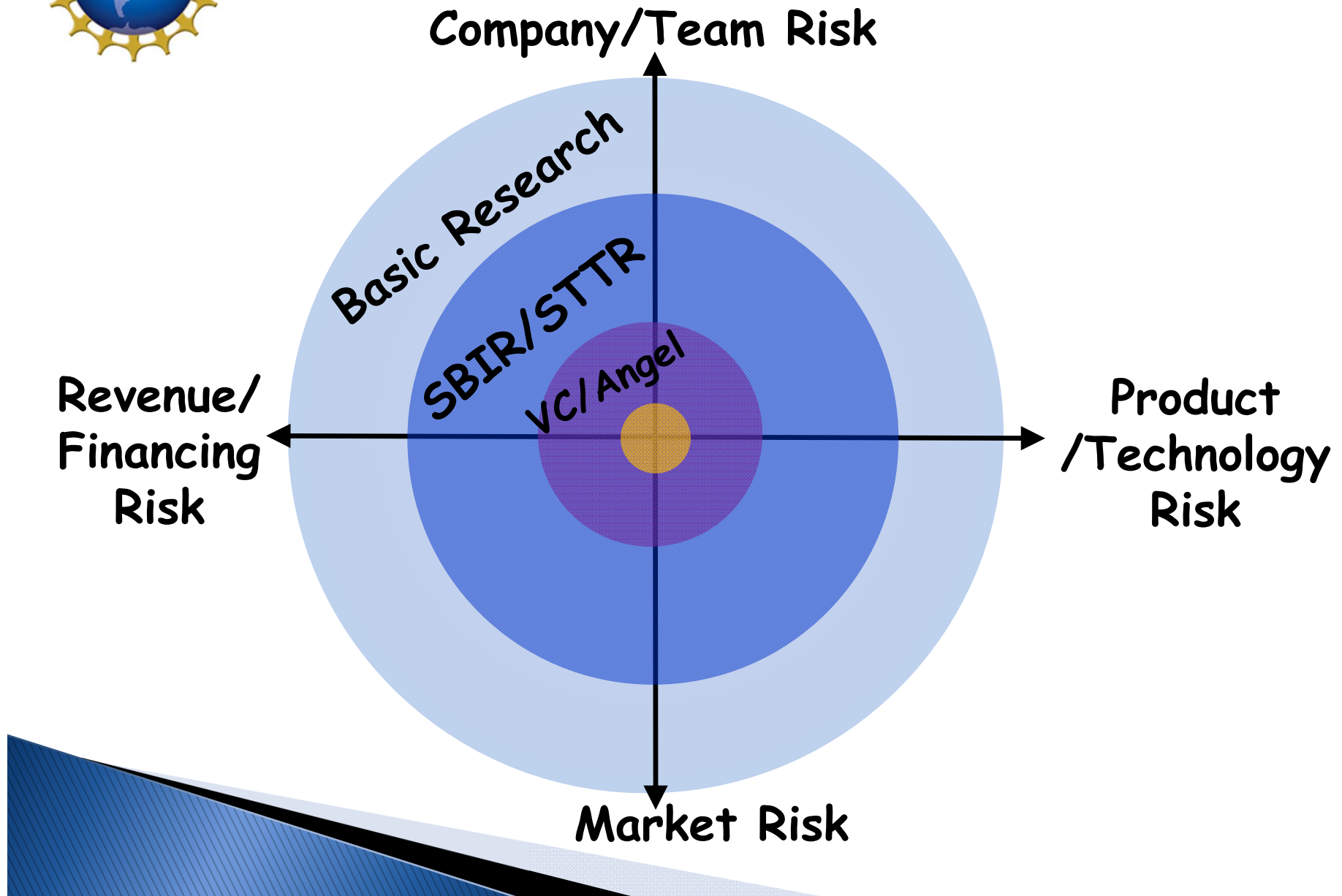


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Positioning of NSF SBIR/STTR Program

– *Help Mitigate Technical and Business Risks*





Driving the Expansion of Innovation Capacity

Cultivate
entrepreneurship

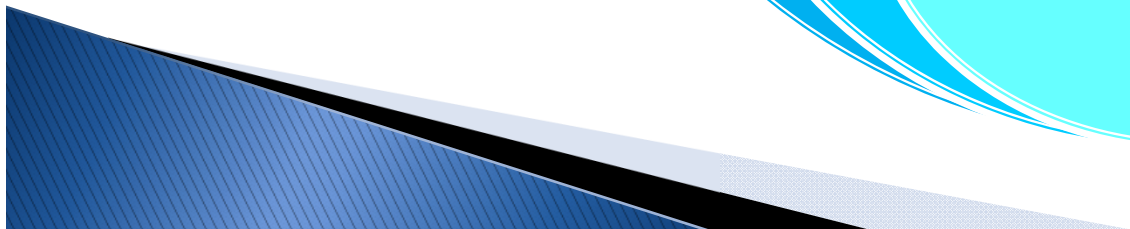
Innovators
/Entrepreneurs

Connect to market
reality

Business

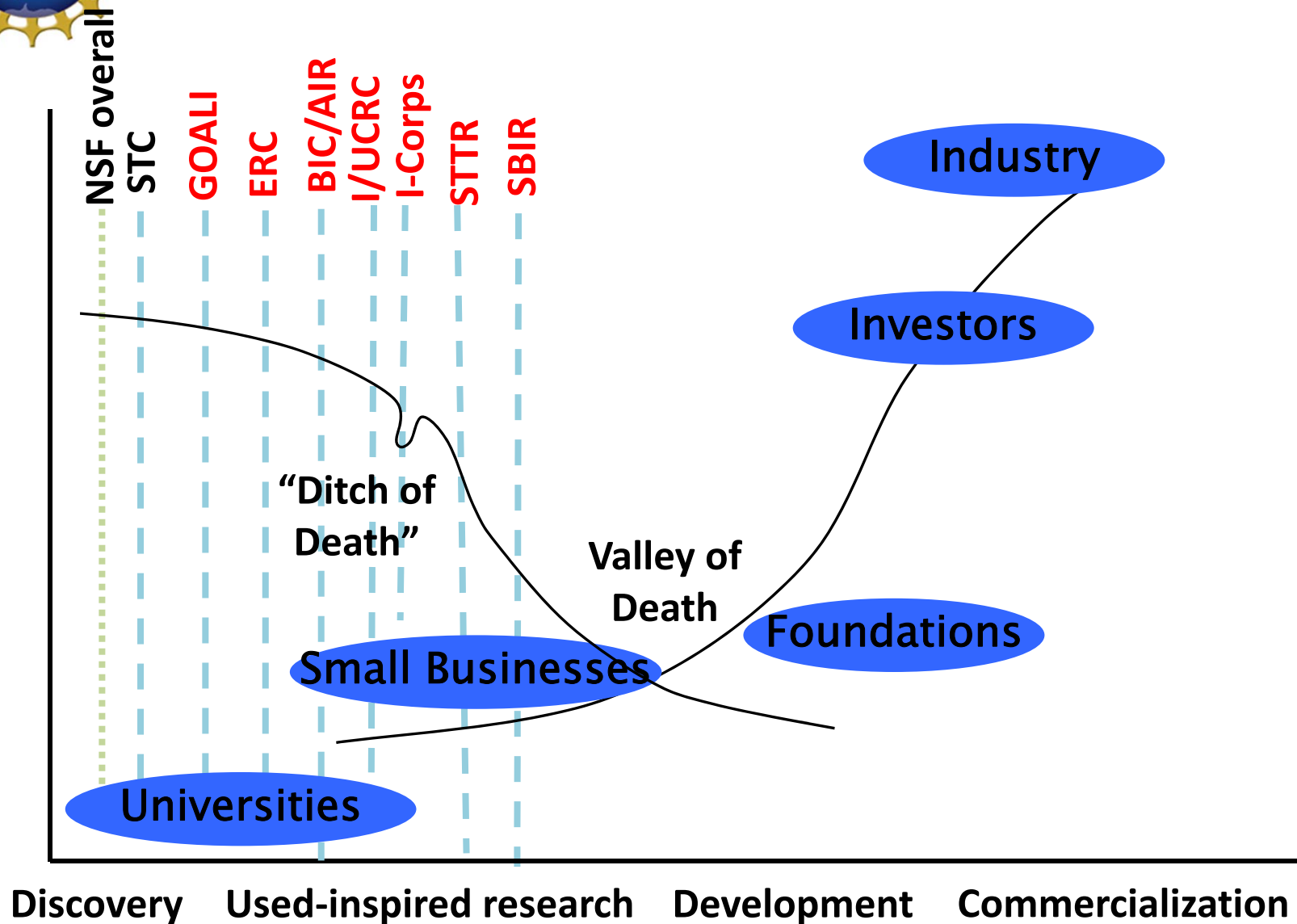
Provide technology
translation pathways

Technological
Innovations





Providing Technology Translation Pathways



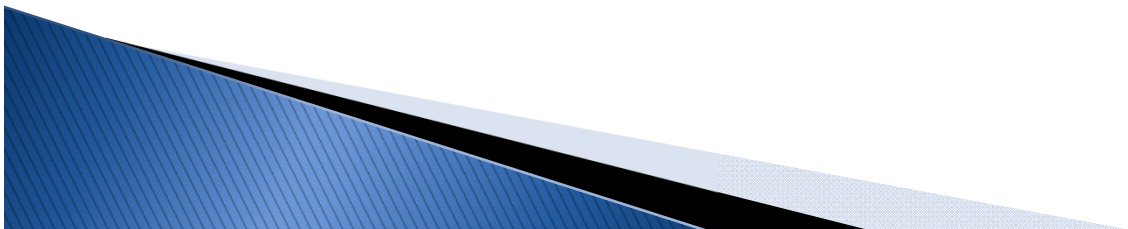


Accelerating Innovation Research (AIR)

NSF funding lineage requested

- **AIR choice 1: TECHNOLOGY TRANSLATION (TT)**
 - Proofs-of-concept and/or pre-commercial prototypes
 - Promote entrepreneurial thinking among faculty and students
 - In FY2013, 41 projects were funded

- **AIR choice 2: RESEARCH ALLIANCE (RA)**
 - Develop innovation ecosystem
 - Stimulate entrepreneurial & innovation activities
 - In FY2013, 6 projects were supported





STTR Program

- Utilize STTR program as a vehicle for university technology commercialization
- In FY2013
 - ✓ Increased STTR Phase I to \$225k
 - ✓ Strongly encourage the commercialization of previously NSF-funded fundamental research
- In June 2013 cycle
 - ✓ 54% of STTR submissions have NSF funding lineage



Connecting to Market Reality

- ▶ Phase IIB supplement
 - ❖ Match 50% of third-party investment up to \$500k
 - ❖ Encourage fund-raising from private sectors

- ▶ TECP (Technology Enhancement for Commercial Partnerships) supplement
 - ❖ Promote customer discovery and strategic partnerships



Connecting to Market Reality

- ▶ Leverage networks of other organizations
- ▶ Supported SBIR/STTR grantees to attend selected tradeshow/venture fairs
 - ❖ Consumer Electronics Show ([CES](#)): 24 companies
 - ❖ International Society for Technology in Education ([ISTE](#)): 10 companies
 - ❖ Florida Educational Technology Conference ([FETC](#)): 15 companies
 - ❖ Angel Capital Association ([ACA](#)): 8 companies
 - ❖ Biotechnology Industry Organization ([BIO](#)) venture forum: 10 companies



Cultivate Entrepreneurship

- ▶ An NSF internal evaluation indicated
 - ❖ Majority of SBIR/STTR Phase II project failures are due to market issues

- ▶ **Launched SBIR Entrepreneurial Boot-Camp in 2013**
 - ❖ 69 small businesses participated
 - ❖ Focuses on customer discovery
 - ❖ Overwhelmingly positive feedback



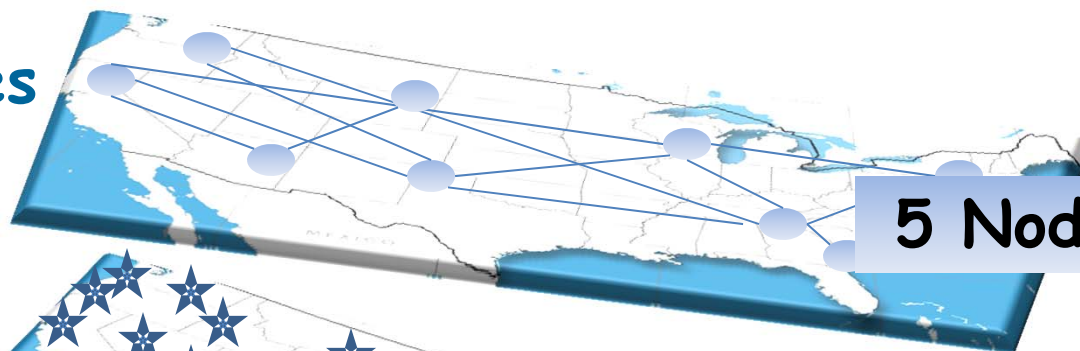
I-Corps™ Approach

- Emphasizes experiential learning and feedback
- Challenges teams to create their own business model canvas
- Values revision and continual improvement of business development elements
- Expects teams to be inquisitive, motivated and capable of self management
- Full contact immersive class



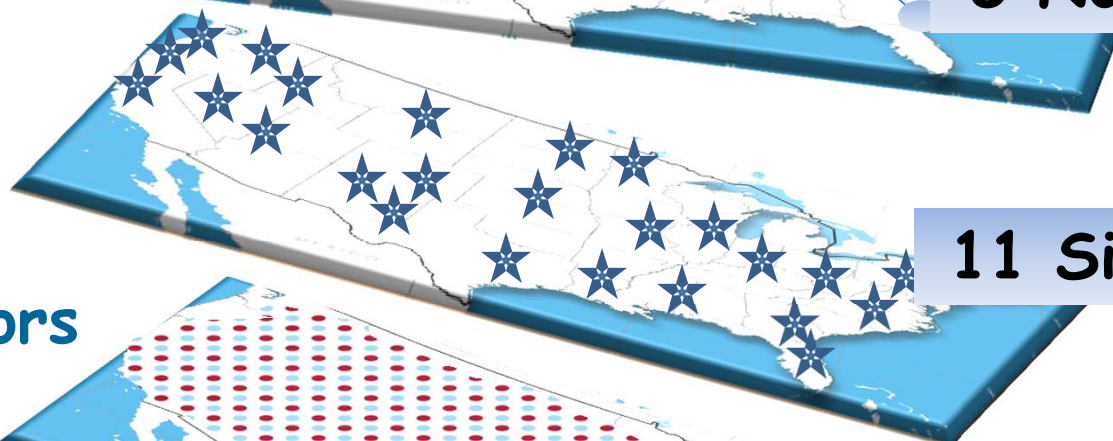
Building the I-Corps™ “Fabric”

I-Corps Nodes



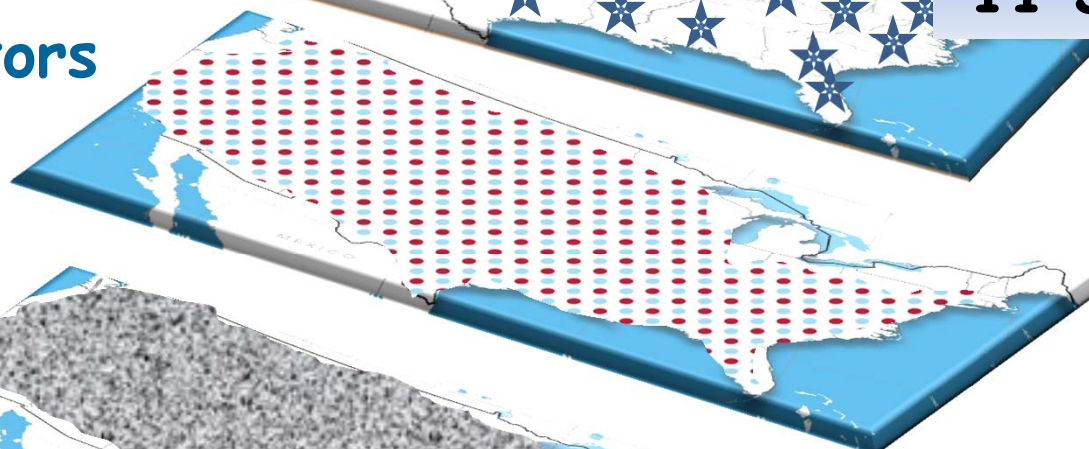
5 Nodes

I-Corps Sites

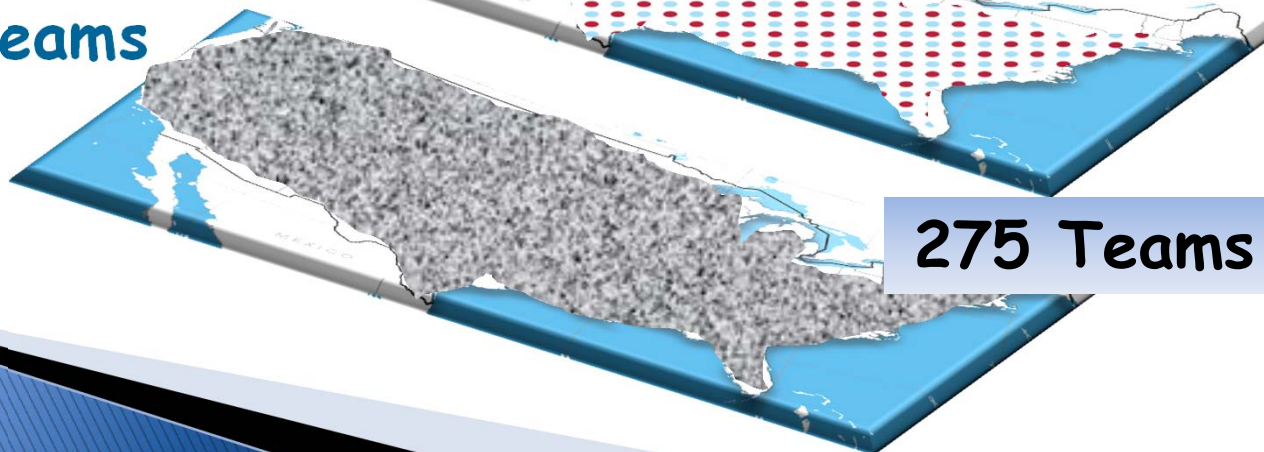


11 Sites

I-Corps Mentors



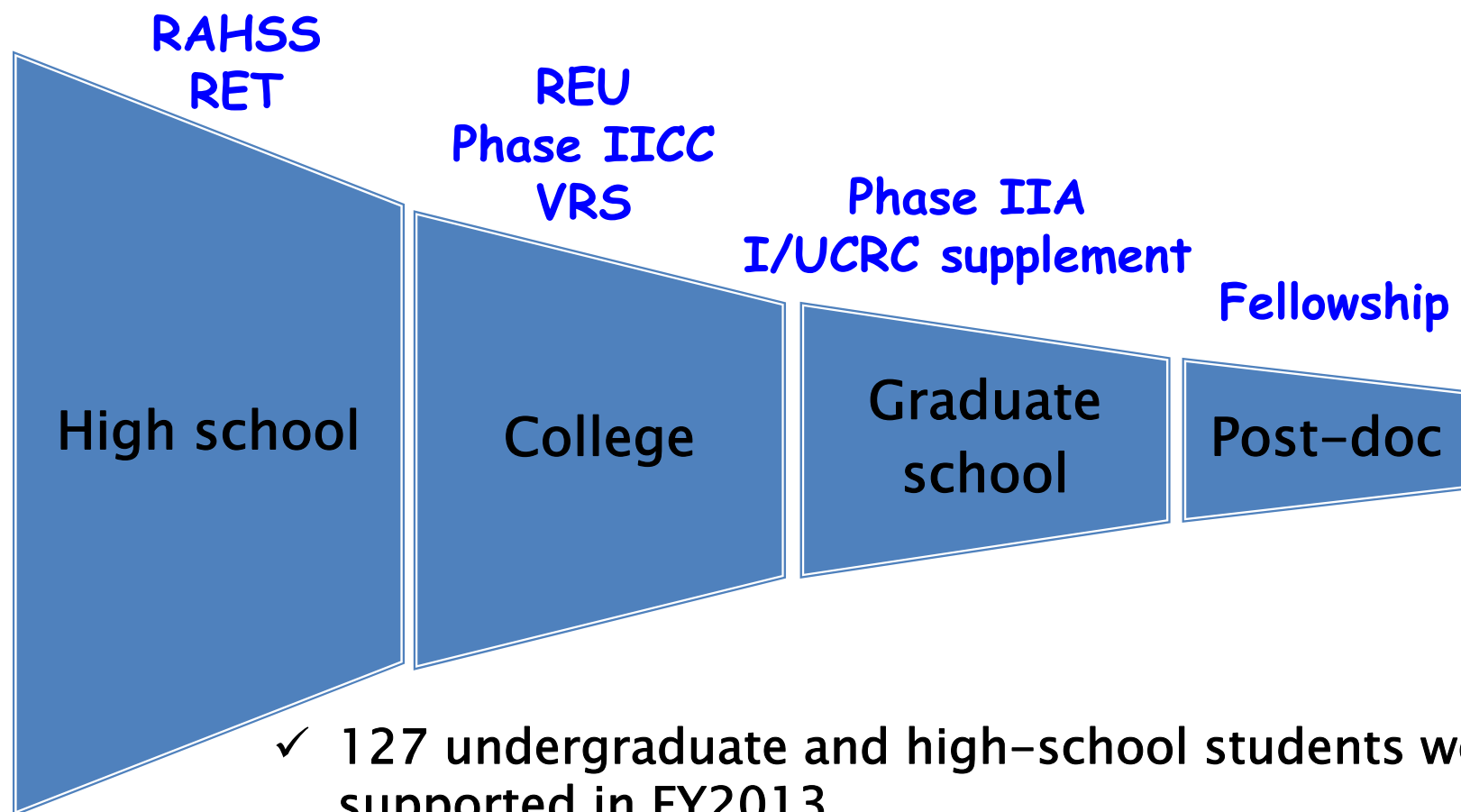
I-Corps Teams



275 Teams



Providing Students with Real-Life Startup Experience

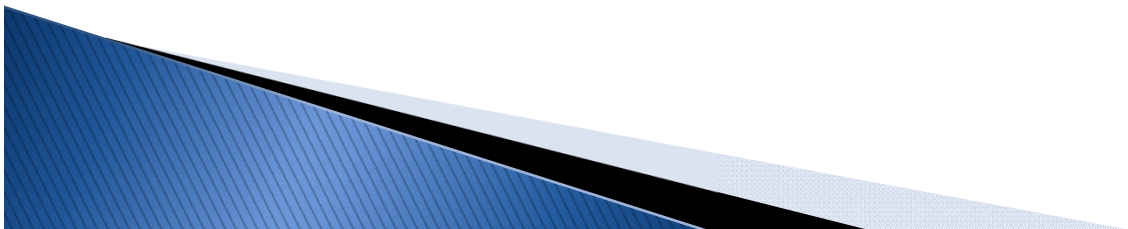


- ✓ 127 undergraduate and high-school students were supported in FY2013
- ✓ 70 Postdoc fellows were supported in last 2 years



Cultivate Entrepreneurial Culture – *Supporting High-Risk Startups*

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





M4 SCIENCES LLC

- Modulated-Assisted Manufacturing
- Basic research: Purdue University (supported by NSF)
- 2005: founded (West Lafayette, IN)
- 2007–2012: NSF STTR Phase I & II
- **Product in the market now** – augments modern lathe and CNC machines





BLUEFIN LABS, Inc.

- Social web and TV analytics to index video
- Based on the founder's Ph.D. thesis
- Basic research: MIT (supported by NSF)
- 2008: founded (Cambridge, MA)
- 2008–2012: NSF SBIR Phase I & II
- 2013: Acquired by Twitter



ABS Materials



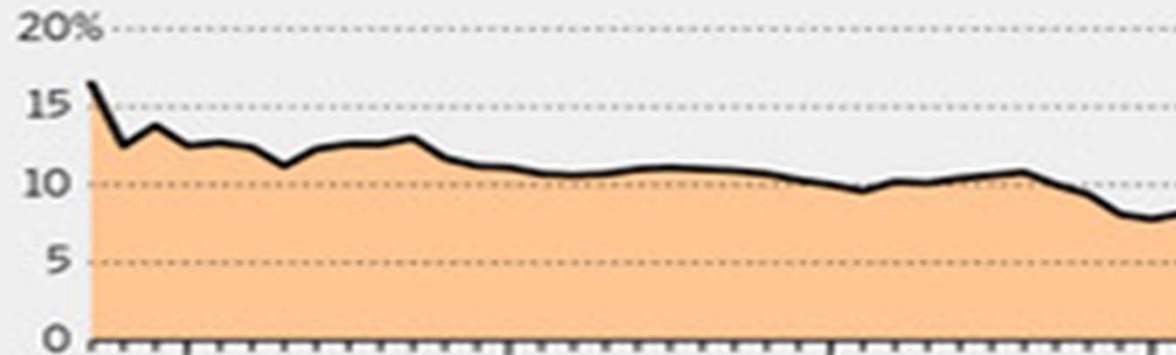
- Produced water treatment using nano-engineered material
- Basic research: Wooster College (supported by NSF)
- 2008: founded (Wooster, OH)
- 2010–present: NSF SBIR Phase I & II
- 2010: # of full-time employees = 4
- 2013: # of full-time employees = 52
- Forbes “Names You Need to Know: Osorb”



Closing Thought

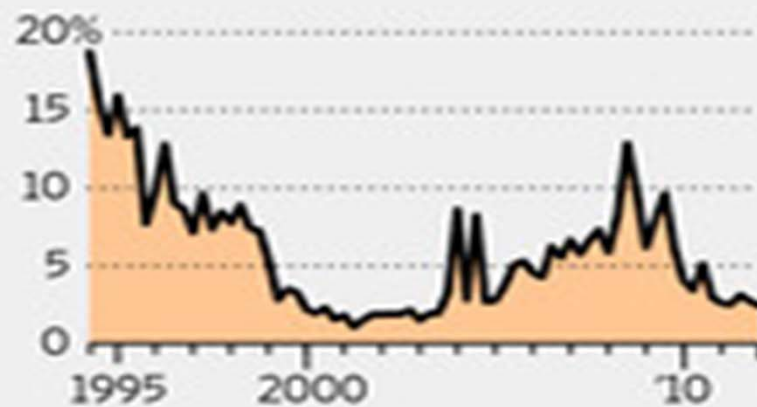
The startup rate is falling...

Share of private companies less than one year old



Cultivating entrepreneurship is essential

...a declining share of venture capital is going to seed new firms...



Source: Wall Street Journal, Risk-Averse Culture Infects U.S. Workers, Entrepreneurs, June 2, 2013