

# Becoming America's Seed Fund: NSF's SBIR Program As a Model for the Rest of Government

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## Becoming America's Seed Fund: Why NSF's SBIR Program Should Be a Model for the Rest of Government

ROBERT ROZANSKY | SEPTEMBER 2019

The National Science Foundation's Small Business Innovation Research (SBIR) program focuses on high-growth startups and commercializing federally funded research and development (R&D). Other federal agencies should consider emulating this model.

### KEY TAKEAWAYS

- SBIR is a federal program coordinated by the Small Business Administration that funds small business R&D. The program has helped seed companies such as Apple, 23andMe and Qualcomm, and has been copied by 17 countries around the world.
- Over the past two decades, the National Science Foundation (NSF) reinvented its SBIR program to specifically target growth-focused startups and to emphasize commercializing innovations derived from federal R&D.
- Other agencies should follow NSF's model and do more to target growth-focused companies, centralize program management, hire dedicated program directors, and coordinate SBIR awards with other agency programs that provide support for commercialization.
- Congress should reform SBIR funding to grant agencies more autonomy, require agencies prioritize commercialization potential in funding decisions, allow awardees to use funds for commercialization activities, and increase federal funding for R&D.

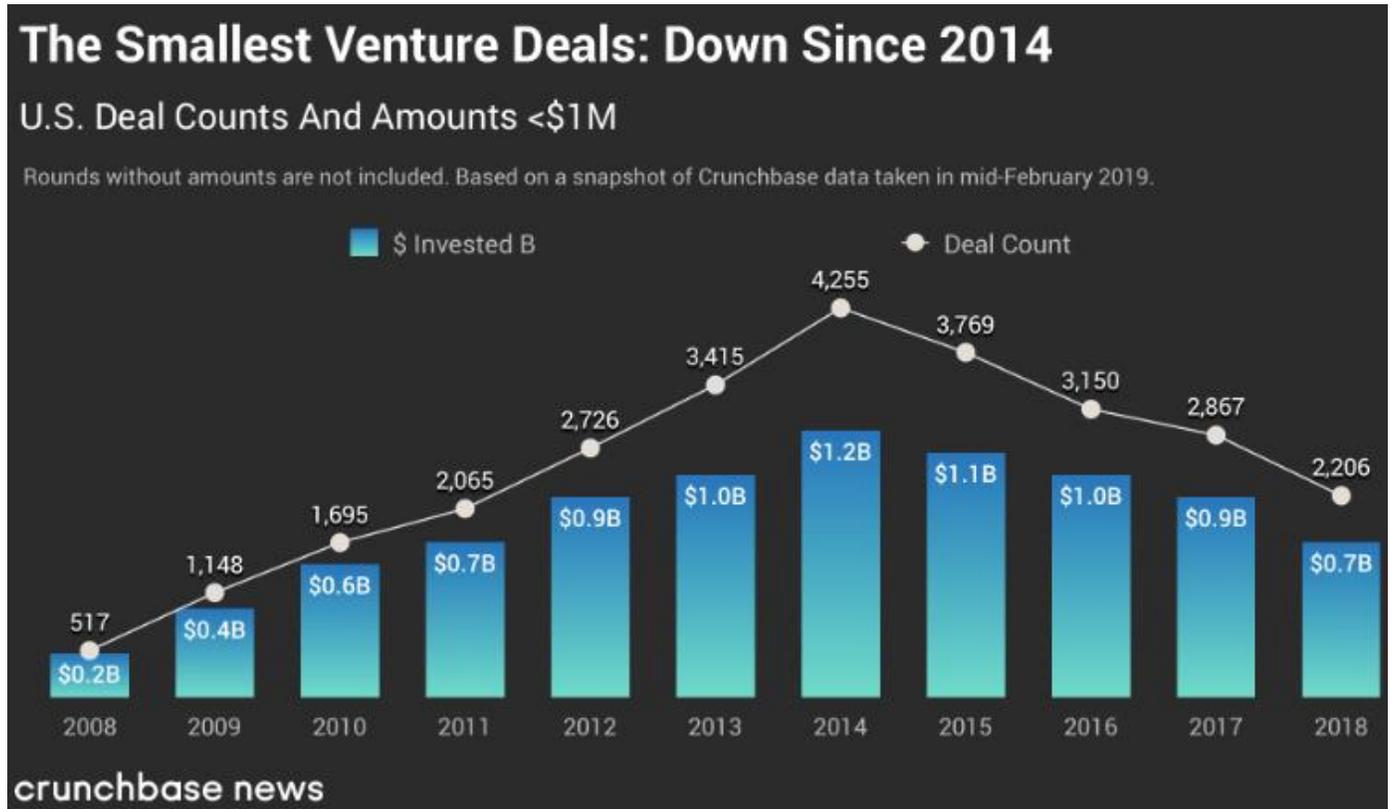
# Outline

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- 1 Overview: Small Business Innovation Research (SBIR) Program
- 2 The National Science Foundation (NSF) “Seed Fund” Model
- 3 Recommendations to Enhance SBIR’s Impact

# Innovative Small Business Face a Capital Gap

- Early-stage capital is needed
- Too high-risk for private sector
- Government can fill the capital gap



# Overview: Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Program

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- Objectives include:
  - Fund small business to meet Federal R&D needs.
  - Increase private-sector commercialization of innovations.
- 11 agencies award over \$3 B annually.
- Extramural research budgets contributions:
  - If > \$100 M, 3.2 % to SBIR
  - If > \$1 B, 0.45 % to STTR
- Three phases of funding

# SBIR Has an Impressive Track Record

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- Over the past 35 years,
  - 70,000 patents
  - Nearly 700 publicly traded companies
  - \$41 billion in venture capital
- Past awardees:



Qualcomm



# Outline

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# Agencies Have Flexibility in How They Implement SBIR

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## Agencies Choose

What kind of companies?

What topics to fund?

Who works with companies?

What other support to offer?

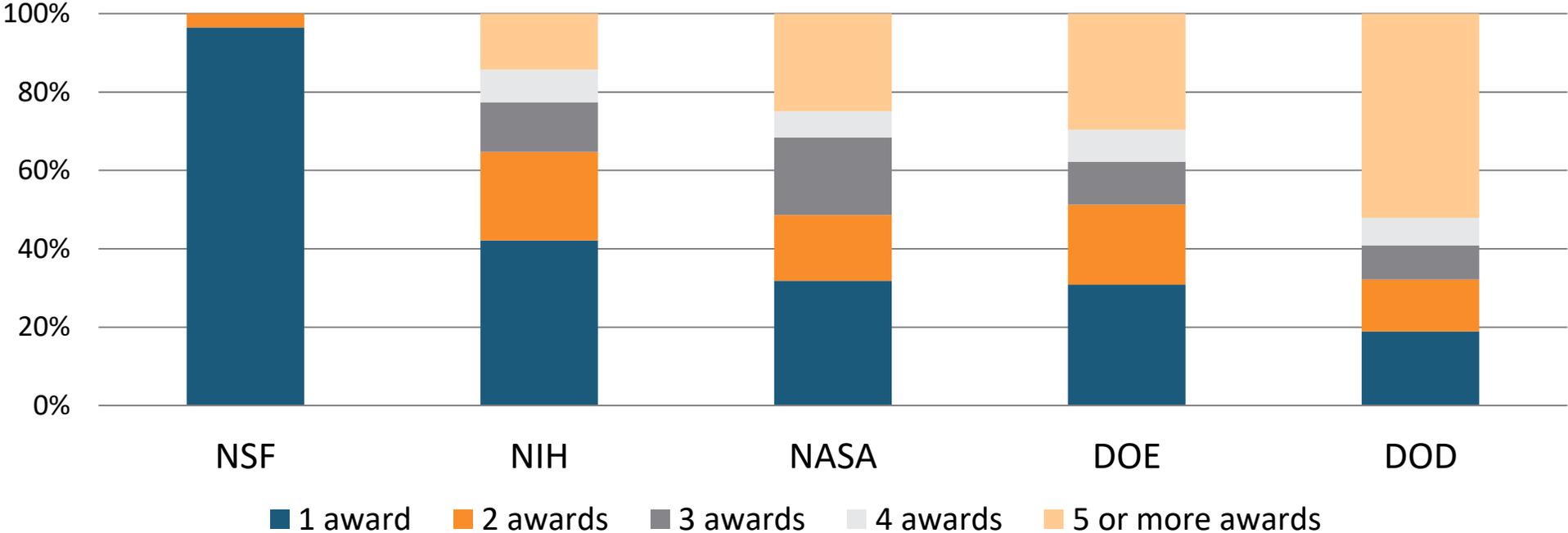
# The NSF SBIR Model



Agencies Choose	The NSF Model
What kind of companies?	Start-ups
What topics to fund?	Broad topic areas
Who works with companies?	Dedicated officials with entrepreneurial experience in a central office
What other support to offer?	Initiatives to enhance commercialization

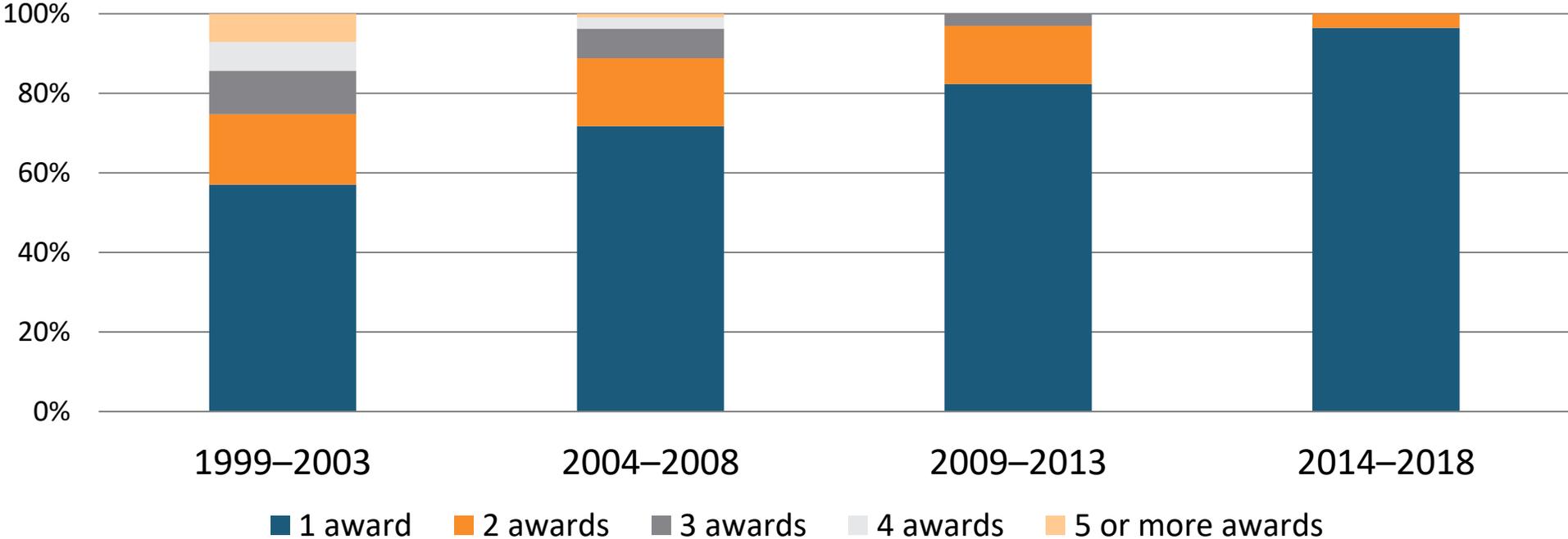
# NSF's Portfolio is Rich in Companies with High Growth Potential

Share of Companies with One or Multiple Phase II Awards in Major SBIR Agency Portfolios (2014-2018)



# NSF has Dramatically Changed its Portfolio Over Time

Share of Companies with One or Multiple Phase II Awards in the NSF SBIR Portfolio



# Examples of Start-ups NSF Funds

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Accelerate Wind



Putting CO<sub>2</sub> to Work



# NSF SBIR Has Demonstrated Strong Commercial Outputs

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- Since 2014
  - \$6.5 billion in private investment
  - 87 exits
- Among surveyed Phase II awardees
  - Reported sales from 70%
  - Ave. growth from 6 to 10 employees (over time period of 4-13 years)
  - Accelerated commercialization reported by 80%

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# Other Agencies Should Adopt Elements of the NSF Model

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- Agencies should consider the following, where there is potential for commercially viable R&D:
  - Funding companies with high growth potential
  - Broadening topics in solicitations
  - Centralizing management among dedicated program directors
  - Offering supplemental programs to enhance commercialization

# Congress Can Help Enhance SBIR Commercial Outputs

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- Make permanent administrative funding pilot.
- Require agencies to increase weight of projects' commercialization potential in funding decisions.
- Allow small business to use portion of SBIR awards for commercialization activities.
- Direct SBA to develop guidance on commercialization metrics.
- Increase overall federal funding for R&D.

# Thank You!

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