EXECUTIVE SUMMARY

Evaluation of the EDA Regional Innovation Strategies Program 2014 to 2017: Seed Fund Support and i6 Challenge Program

FOURTH economy

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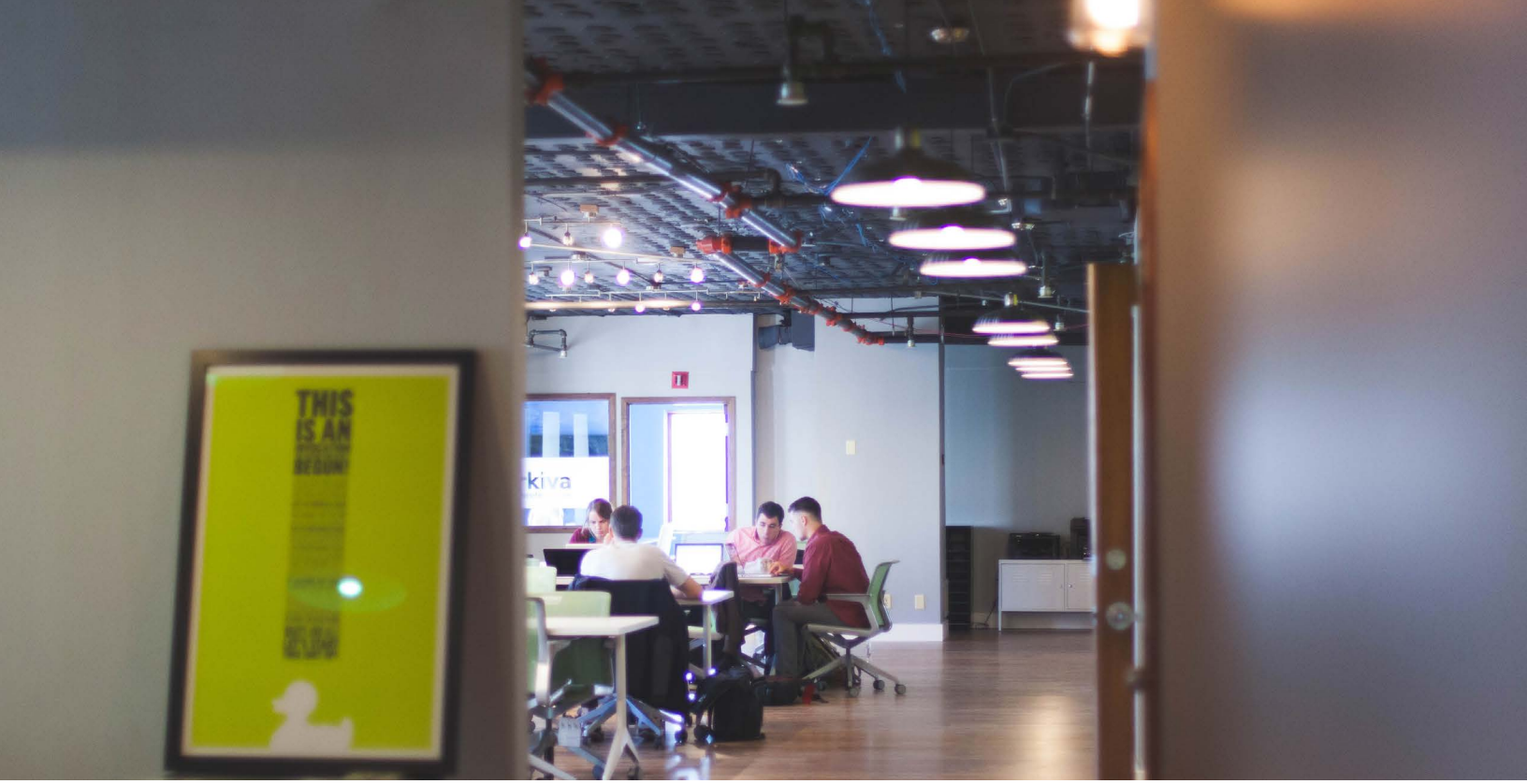


Overview

In an increasingly global economy, regions are tasked with thinking more about their competitiveness, innovation capacity, and performance. The development and acceleration of innovation activities requires committed investment in both human capital—to generate new ideas—and infrastructure like R&D parks and incubators that enable technology transfer and the creation of new products. Incentivizing such innovation is vital to ensure a region's productivity can sustain long-term growth.

The Office of Innovation and Entrepreneurship (OIE), housed within the U.S. Economic Development Administration (EDA), operates two primary initiatives that focus on scaling innovation and supporting high-growth entrepreneurship. These competitive initiatives operate under the Regional Innovation Strategies (RIS) Program, a national grant program dedicated to increasing regions' capacity to translate innovation into jobs. The two opportunities, the i6 Challenge and the Seed Fund Support Program, are available to a variety of organizations that assist innovators and entrepreneurs. This evaluation report covers the Seed Fund Support (SFS) Program and the i6 Challenge projects awarded between 2014–2017.

Seed Fund Support

The SFS Program provides grants for operational assistance to support the creation, launch, or expansion of equity-based, cluster-focused seed funds that invest in startups with a potential for high growth. The outcomes of the program include supporting innovation-based high growth entrepreneurship and startup acceleration and increasing the availability of regional risk capital for early-stage companies.

i6 Challenge

The i6 Challenge is designed to increase entrepreneurship that uses innovations, ideas, intellectual property (IP), and applied research to develop technology and make it market-ready, resulting in new businesses, accelerated paths to new markets, and new jobs. The i6 Challenge provides resources for a wide range of programs and services that support innovation-based, high-growth entrepreneurship and startup acceleration.

Purpose of Evaluation

This evaluation report examines the overall function of the RIS Program, examining how well the component programs (SFS and i6) work together. Additionally, it asseses the individual programs and their specific goals and metrics. Both programs are designed to advance high-growth entrepreneurship and scale innovation, but they provide different tools to serve different needs.

This evaluation analyzes the RIS Program's effectiveness and economic impacts to determine the following three objectives:

1. **whether the Program is achieving its goals;**
2. **how the Program may be improved; and**
3. **whether the Program should be continued or terminated.**

Fourth Economy Consulting was selected through a competitive open solicitation process to conduct the evaluation. Fourth Economy's team of consultants worked closely with U.S. EDA staff to verify the data and the operations of the RIS Program. Fourth Economy has direct experience in both the practice of innovation-based economic development as well as the research and evaluation of these programs. The team has directly led a variety of economic development initiatives and has produced a number of state and federal evaluations, including the Kansas Bioscience Authority, the Pennsylvania Keystone Innovation Zone, and the Small Business Administration Export Assistance Centers.

Summary of Findings

Overall RIS Program Findings

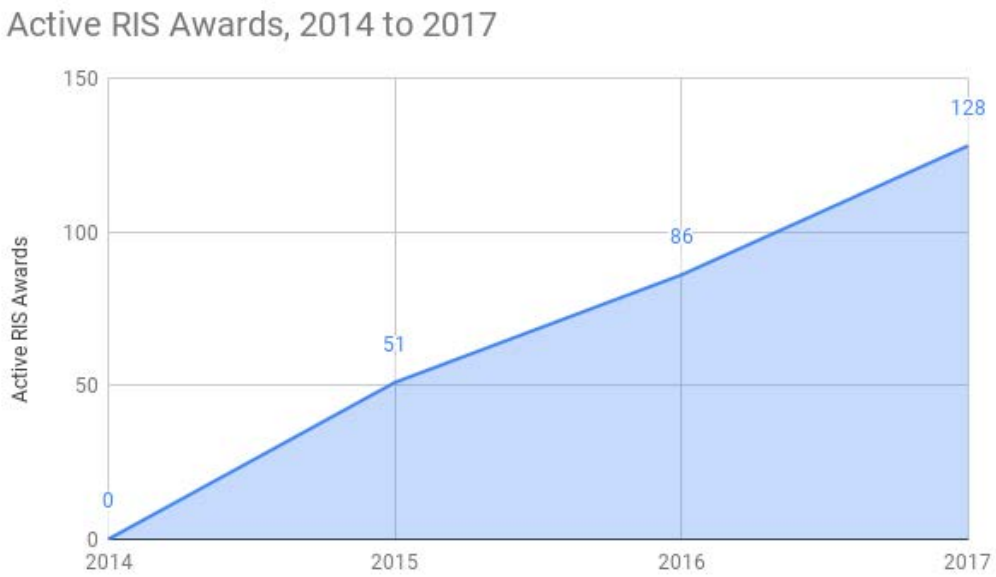
The RIS Program is highly competitive and the program is able to support only a portion of the overall demand. Requests greatly exceed the amount available. The budget for the RIS program grew by 173 percent from 2014 to 2017 and applications increased by 125 percent. The percent of awarded requests rose from 14 percent in 2014 to 20 percent in 2017. (See page 17: Strong Demand Makes RIS Highly Competitive.)

This volume of demand strains staff and team resources. Since each grant is a multi-year project, by 2017 the RIS portfolio grew to 128 active RIS projects for both SFS and the i6 Challenge. While some projects will be completed, any new round of projects could raise the portfolio total even higher. The program is supported by the EDA's Office of Innovation and Entrepreneurship (OIE). At the time that Fourth Economy conducted the program evaluation, OIE was comprised of five staff members, with two of those positions vacant. This left three people (but only two full-time equivalents) managing the program. Regional EDA staff members do provide grant management for projects in their territory, but the support of the RIS Program is not their primary responsibility. See page 15 for more staffing details. Regional EDA staff members do provide grant management for projects in their territory, but the support of the RIS Program is not their primary responsibility. See page 15 for more staffing details. Additional staff capacity with appropriate experience in innovation and entrepreneurship will be needed if this volume of activity increases. A caseload of 42 to 64 projects distributed across the United States is too high of a burden to adequately review progress reports and provide assistance to the grantees. (See page 16: RIS Applications and Grants Awarded.)

The National Science Foundation's (NSF) Established Program to Stimulate Competitive Research (EPSCoR) sets aside funding and establishes partnerships with government, higher education and industry in order to improve a state's research infrastructure and R&D capacity. EPSCoR distributes resources to the "have-not" states and provides a mechanism for broadening the geographic base and reach of innovation capacity in the United States.

A jurisdiction is eligible to participate in the NSF EPSCoR Research Infrastructure Improvement Grant Program (RII) if their most recent 3-year level of NSF research support is equal to or less than 0.75% of the total NSF Research and Related Activities (R&RA) budget.[1]

1 See https://www.nsf.gov/od/oia/programs/epscor/Eligibility_Tables/FY2018_



While the RIS Program is highly competitive, it is serving a continuum of innovation environments. It is supporting states with an established innovation economy, as well as states that are still developing their research base and innovation economy. States that qualify for the EPSCoR program have low levels of research support, so EPSCoR reflects whether a state has a strong research base for its innovation system. Based on the awards to date, there is no bias towards non-EPSCoR states. The RIS Program has awarded grants to 17 percent of the applications from EPSCoR states compared to 16 percent of the applications from non-EPSCoR states. Entrepreneurship is a high-risk, high-reward enterprise; therefore, it is important that the program supports qualified applications. A competitive process is necessary to ensure high quality programs that can effectively grow the innovation ecosystem and develop entrepreneurship. Applicants from EPSCoR states or regions with fewer resources and assets may need more assistance in the development of these programs and applications, which may require leveraging additional staff capacity or the ability to leverage the capacity of experienced peer organizations in other states. However, awarding grants solely on the basis of need or lowering the threshold for qualifying for a grant is not advisable. (See page 19: RIS Awards in EPSCoR and non-EPSCoR States.)

Summary of SFS Findings

After four years of activity, the following findings are sufficiently robust to provide clear evidence of the impact of the program to inform program recommendations.

- **Rapid Expansion** - In just three years of operation, the SFS program's seed fund activity has grown rapidly, reaching impact levels comparable to and serving as complements to other early stage investors. (See page 37: Seed Fund Activity Overview.)
- **Growing Underserved Markets** - The SFS Program has already achieved a significant market share in several states, especially states with fewer than 500 firms having received venture capital. (See page 38: What is the market share of the SFS Grantees?)
- **Leveling the Field** - The SFS program has provided more grants to EPSCoR states, expanding access to risk capital in areas where it is not currently available. (See page 42: How has the SFS program helped Rural and Urban Areas? Also see page 45: Do regional conditions determine the impact performance?)
- **Meeting Capital Needs** -The SFS grantees are providing capital in amounts sufficient to meet the needs of most entrepreneurs. SFS grantees reported capital investments in their clients that ranged from $20,000 to $450,000 (with an overall average of $62,755), which is sufficient for the startup capital needs of more than half of the firms in business for less than three years. (See page 40: How does the SFS program perform in providing the level of capital needed?)
- **Efficient Job Creator** - The 2014 and 2015 cohorts of the SFS program have supported job creation at a cost per job that is comparable to EDA's Revolving Loan Fund program. (See below for the cost per job metrics, and in more detail on page 40: Performance of the SFS Grant Cohorts.)
    - EDA Revolving Loan Fund = one job for every $24,915 in leveraged funds.
    - 2014 SFS Cohort = one job for every $26,753 in leveraged funds.
    - 2015 SFS Cohort = one job for every $29,661 in leveraged funds.

Several of the findings from this evaluation will require further investigation as additional data on the impacts of these projects becomes available. The evidence available at this time is not solid enough to justify making program changes on its basis, but these findings may have implications for strategies that can enhance the impact of the SFS program for different regions.

- In states with low access to risk capital, SFS grantees were more active in making investments than those in states with high access to risk capital. These grantees may be seeding activity to grow the entrepreneurial pipeline.
- Grantees in states with low access to risk capital generated fewer companies. This may reflect a more conservative approach to company creation or the need to spend more time and effort to build an entrepreneurial culture. They also provided smaller average investments, which may reflect lower business costs or a strategic decision to give entrepreneurs some capital to prove themselves.
- Regional conditions alone do not explain the success or level of impact of the grantees, but there is insufficient data to attribute differences in success to other factors such as the capacity of the organization or the operational strategy of the program.

Summary of i6 Challenge Findings

- **Expanding Innovation Infrastructure** - The i6 program has supported an expansion of the innovation infrastructure in the United States. Overall, 36 states have received at least one i6 grant since 2014, with 42 total states supported by the RIS Program. (See page 16: RIS Applications and Grants Awarded.)
- **Maturing Programs** -The i6 Challenge portfolio is maturing over time, from pilot programs of early 2014-15 grants to new, established and more effective programs in later cohort years. (See page 55 Performance of the i6 Grant Cohorts.)
- **Efficient Job Creator** - The job creation of the i6 grantees has been very cost effective; the 2015 cohort created one job for every $3,062 spent. The cost increases to $7,832 dollars per job for programs operating for fewer years. This suggests that performance may increase over time, or that programs created by established organizations may be able to perform at a higher level, unless they are targeting an underserved region or population, or focusing their effort on an emerging technology sector. (See page 55: Performance of the i6 Grant Cohorts.)
- **Diverse Regions** - i6 grantees are generating impacts regardless of the innovation level of the state and its degree of urbanization. However, the most rural states also tend to have lower innovation levels and may require more time and support to build the ecosystem and become self-sustaining. (See page 60: Performance of i6 Challenge by State Conditions.)
- **Flexible Approaches** -i6 Grantees have employed a wide variety of strategies to achieve diverse goals. There is no "one-size-fits-all" approach. Efforts that are open, or not technology- or sector-specific, may be better suited to regions that need to increase entrepreneurship, whereas programs that define a specific sector or technology niche may work better where the primary need is to diversify or build on a specific competitive advantage. (See page 61: How does the technology focus of Grantees impact performance?)

The following findings indicate levels of success and impacts across individual i6 cohorts. Since there are many variables that can influence cohort impact, these trends are not concrete and may change over time. A more detailed look at these findings is in the full report.

- **Growing Impacts** - After four years of activity, the 2014 projects have generated significant impacts. Within the next two years, as projects mature and the awards increase from 17 per year to 27, the overall program impacts should significantly increase as well. (See page 51: Overview of the i6 Challenge.)
- **Building the Entrepreneurial Pipeline** -The i6 Challenge has supported a rapid increase in the number of entrepreneurs and startups that receive support services from the grantees. By the end of 2017, the i6 Challenge grantees worked with 4,154 total entrepreneurs and startups and reviewed 5,095 business concepts. (See page 54: To what degree has the i6 Challenge expanded the nation's innovation infrastructure?)

i6 Grantees Support a Growing Number of Entrepreneurs

Recommendations for the RIS Program

This evaluation provides an analysis of the RIS Program's effectiveness and economic impacts to determine the following three objectives:

1. **whether the Program is achieving its goals;**
2. **how the Program may be improved; and**
3. **whether the Program should be continued or terminated.**

Achieving Goals

Seeding Innovation Investment - The RIS Program serves a critical role as the first investor (or angel investor) of the innovation ecosystem that seeds organizations and activities that can then attract sustaining support from local sources. Together the SFS Program and the i6 Challenge programs are expanding the infrastructure for innovation and entrepreneurship across the United States.

Increasing Access to Risk Capital - The RIS Program is demonstrating promising results in increasing access to risk capital. There is a need in the United States to expand access to risk capital and level the entrepreneurial playing field. Only 11 out of 1,000 firms younger than two years old have access to risk capital. Without risk capital, businesses will only be started by those with personal wealth and resources. The SFS program has enabled local partners to raise $91 million in local risk capital available for investment, and those partners have deployed nearly $19 million of this local risk capital. The SFS program has achieved a significant market share in several underserved states.

Advancing Entrepreneurship - The RIS Program is rising to the challenge of advancing entrepreneurship and providing national validation that builds support to sustain these efforts. Rates of business creation by state range from a low of seven percent to a high of 13 percent, validating the need to promote entrepreneurship across the United States. Innovation and entrepreneurship require the development of a supporting ecosystem, which is not accomplished rapidly. The most well-known cases of the development of entrepreneurial hubs (Silicon Valley, Research Triangle, San Diego) took decades to become fully established and internationally competitive regions[2]. The organizations and collaborations behind those partnerships required stable, multi-year financial support. The i6 Challenge grantees have supported 4,154 entrepreneurs and startups in 36 states. From 2014 to 2017, the i6 Challenge also provided a maximum of $500,000[3] grant over three years with an average match from state and local sources of nearly $713,000. Though these critical catalytic resources are not sufficient to ensure self-sufficiency, they do provide enough to advance bolder visions and plans and to identify what works in a region.

2 Wessner 2013 and Tornatsky et al 2002.

Program Improvements

Maintain Flexibility - Flexibility is a hallmark of the RIS Program. It is critical that applicants have the ability to tailor the program to meet regional needs and priorities. The RIS Program recognizes that there is no single path to a prosperous future, so it allows participants to develop an approach best suited to their needs and capacities.

Simplify the Metrics - The flexibility of the program, however, has created a complex system of performance metrics that are not tracked consistently. The RIS Program can be improved by simplifying and streamlining data collection and tracking. A panel of willing and experienced grantees should be convened to identify the core metrics that must be tracked as well as a limited number of models and options that applicants can employ based on their staff capacity and resources. To reflect the flexibility of the program, applicants should have the option to track and report supplemental metrics in addition to the required core metrics. This could help resource-constrained applicants limit the effort spent on tracking impacts. Grantees around the country would benefit from learning from their peers about the level of effort and costs associated with different methods of tracking and monitoring.

Scale Staff Resources to the Portfolio - Staff support for the RIS Program must be scaled to the active portfolio. There were 128 active projects supported by three staff members, two of whom spent fifty percent of their time on the RIS Program, which equated to two full-time equivalents. Regional EDA staff members provide grant management for projects in their territory, but support of the RIS Program is not their primary responsibility. Given that these projects are dispersed around the country, this caseload of 42 to

3 The cap has been raised to $750,000 for the 2018 grants.

64 projects each is not optimal. A caseload of 15-20 projects is ideal, so that staff can better monitor progress reports and provide support to the projects in the RIS portfolio. The OIE staff should be a resource for the grantees, but they need enough staff capacity to support the active project portfolio. An ideal system would integrate staff who have regional expertise with staff whose expertise is related to the specific program goals of:

- Innovation
- Entrepreneurship
- Regional Connectivity
- Bringing Innovation to Market

Provide a Pre-Application Review - Entrepreneurship is a high-risk endeavor, so awarding grants to unprepared applicants is not likely to result in success for the entrepreneurs in the region. The RIS Program must remain a competitive program, with a high threshold for admittance, but there needs to be a mechanism for supporting and improving applications from regions that have a higher level of need and fewer resources. In 2014, the RIS Program provided grants for feasibility studies for Seed Funds, but this has not been a specific element of the program. As a competitive program, the RIS Program is not suited to supporting feasibility studies or planning grants. This kind of support is available through other programs at the EDA and should not be duplicated within RIS. There can be better integration between the RIS Program and the Local Technical Assistance program and the Planning programs, managed out of the regional offices.

Creating a simplified referral or feeder system to these programs would enable RIS applicants to access feasibility, planning or other support to develop more competitive applications. Adjusting the application process to include a 3–5-page pre-application or project overview would reduce the burden on applicants who are not ready to submit a competitive application and it would reduce the burden on OIE staff in reviewing unqualified proposals. Aligning this pre-application with other EDA programs for technical assistance and planning would enable these regions to reduce the time spent on unsuccessful applications and increase time spent identifying expert resources, filling gaps in the regional ecosystem, and sharpening the innovation strategy for the region.

Program Continuation

Continue to Catalyze - The RIS Program has generated initial successes and promising early returns but economic transformation does not happen quickly. The RIS Program remains early in its evolution and it should be continued as a vital catalyst for supporting state and regional innovation.

Amplify Capacity and Credibility - In the program's few years of operation, it has provided critical funding that would otherwise have been impossible for participants to raise and access. When surveyed, participants in the RIS Program noted that the benefits also extend beyond funding, with many expressing that participating has *increased the visibility and credibility of their projects and initiatives; added much needed capacity to extend their reach more regionally*; strengthened the recruitment of advisors, additional partners, and, in some cases, investors; and even served as a catalyst to launch other programs.

> **"Without this funding, we could not have launched the program. While many talk up entrepreneurship, few fund it."**
> *- RIS Participant*

Leveraging and Leveling - The variation in state and local business cycles can make it challenging to sustain regional programs during difficult budget years. The federal investment represented by the RIS Program *directly stabilizes the funding* for these programs and provides an incentive for state and local sources to sustain funding. The resources provided by the RIS are critical to leveling the playing field so that the benefits of entrepreneurship and innovation are shared broadly, not just with a select few.

Building National Innovation Infrastructure - The RIS Program provides the only mechanism for developing a national support infrastructure for the innovation economy. Entrepreneurship and innovation remain hallmarks of American economic success. Even at this preliminary stage, the program is generating impacts in a cost-effective manner. The benefits of these investments are likely to generate a greater return over time, as more regions build their innovation ecosystems and grow new generations of entrepreneurs.

SEED FUND PROGRAM SUPPORT

2014 through March 30, 2018

$9.98M seed fund awards to date

$4.18M federal support disbursed

$5.36M local matching dollars

40 Seed Fund Support awards at an average of **$249, 538**

Companies supported by grantees generated: **1,042** jobs across **158** companies

$4,621 *federal support disbursed per job created*

$5,148 *matching dollars spent per job created*

$9,769 *federal and matching dollars per job created*

Grantee Impact:

Prospects reviewed for each investment made or facilitated: **12**

$91M raised or organized from local sources

$18.9M invested in companies

$18.1k invested per job created

i6 CHALLENGE PROGRAM SUPPORT

2014 through March 30, 2018

awarded to date **$42M** + match committed **$54M**

i6 Challenge Program awarded grants to: **88 projects in 36 states**

$13.6M in federal dollars and **$14.9M** in local match spent to support **4,154** entrepreneurs and startups

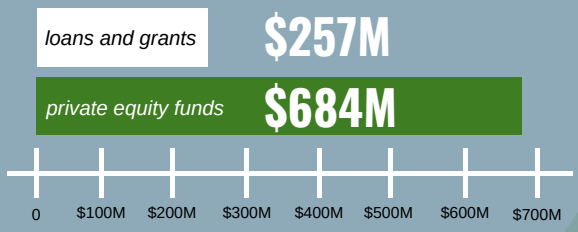
442	5,095	5,885	14,335	22,992
SBIR Award Applications Supported	Business Concepts Reviewed	Outreach Events	Technical Assistance Meetings	Mentoring & Coaching Sessions

7,160 jobs created and retained

per job created and retained:

$1,903	$2,081	$3,984
Federal Support	*Matching Dollars*	*Federal and Matching Dollars*

$941M total capital raised



1,661 product launches

681 *Patent Applications in Progress*

545 *Patents Held*