

# MIND THE GAP

THE TECHNOLOGY  
AND STARTUP  
GAP FUNDING AND  
ACCELERATOR  
PROGRAM REPORT

2020

## SUMMARY

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# REPORT SUMMARY

The innovation system that transitions breakthroughs in research from the lab into the marketplace is constrained by the lack of available early-stage capital and development support. This “gap” extends from where the government funding of basic research ends to where existing companies or investors are willing to accept the risk to commercialize or invest in the technology or startup. The negative result is that a large portion of economic creation and commercial potential is left unrealized because it isn’t funded and supported.

This shortage of early-stage development capital and support must be recognized and addressed as a serious threat to future innovation and associated societal benefits. Left without a solution, many promising technologies and startups will stall or struggle to develop on a path of least resistance towards a sub-optimal end.

To address this challenge, research institutions and partners have created technology and startup gap funding and accelerator support programs as a capital and innovation support mechanism. These programs are uniquely positioned to address critical elements of technology development and startup formation from research institutions.

Over the past 20 years, gap fund programs have evolved from simple vehicles for injections of money into sophisticated programs that match much-needed capital with a full suite of accelerator support programs to evaluate and develop tech and startups.

This advancement has demonstrated increased commercialization through spinouts and licenses to existing companies and the attraction of public and private capital and partnership back into early-stage innovation. Additionally, smart companies and investors are leveraging these programs for insights, future technology, and attractive opportunities through direct investment, advisory, and mentorship support.

The Mind the Gap Report, now in its fifth iteration, has tracked the evolution of translational research, proof of concept, startup, and venture gap funding programs associated with these leading research institutions over the past 15 years.

The report now includes 141 gap funding programs affiliated with 84 research institutions and details their sources and sustainability, processes and management, focus and intent, and ultimately, their impact on the innovation community and its capabilities.

## Report Content

- Analysis of Early-stage Capital Continuum
- Defining and Positioning the Role of Gap Funds
- Raising and Sustaining Gap Funds
- Structuring the Gap Fund Model
- Managing the Gap Fund Process
- Defining and Benchmarking Gap Fund Impact
- Interviews with Gap Fund Leaders

## Report Highlights

- 141 Gap Funds Affiliated with 84 Research Institutions
- 33 US States and Seven Countries Included
- \$557M into 6,193 Gap Funded Technologies/Startups
- \$6B in Attracted Capital to Gap Funded Projects
- 1,262 Startups Created and 11,331 New Jobs
- 739 Projects Licensed to Existing Companies
- Engaging Thousands of Faculty, Students, Entrepreneurs, Investors, and Industry Members

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# OBJECTIVES AND METHOD

## Report Objectives

Since 2005, the Mind the Gap Report has been the comprehensive best practices, benchmarking, and program development guide for university-affiliated gap fund and accelerator programs, with the goals to:

- Support current and aspiring gap fund managers in developing gap funding programs at, or affiliated with, research institutions
- Identify opportunities for gap funding partnerships with public agencies, industry, and the early-stage investment community
- Advocate and inform policy-makers as they weigh decisions on future innovation programs and legislation

**We produce the Mind the Gap Report as a tool to support gap fund program creation and growth through a mix of data, benchmarks, strategies, impact measures, and success stories that fund managers and stakeholders can use to build towards their unique fund objectives.**

## Report Method

- **Call for Participation:** A call for participation was sent to historical participants from previous reports as well as active fund managers that had expressed interest from earlier iterations of the Mind the Gap report
- **Data Collection:** The participant group received access to either their previously completed fund profile for updating or edits or to a new profile. Each completed comprehensive profiles for every gap fund that they administer and manage. Each was provided with a detailed document that defined all of the items being collected
- **Fund Discussions:** Following the completion of the online profile, we held a phone conversation with fund managers to clarify entries, to collect additional information, and to listen to their experiences related to their gap funding programs. In addition to gathering extensive information on these funds, we used this as an opportunity to solicit areas of interest/possibility/concern from these managers to deliver a report that would be as much about the future as it is about the past
- **Analysis and Reporting:** A data repository was formatted and analyzed through Tableau, a data analysis and visualization program. Observations from this analysis, participant-submitted program documents and insights, and comparisons to other community-accepted data sources supported this final report
- **Participant Review:** All active participants were provided a final copy of the report for review before public release

# PARTICIPANT OVERVIEW

The Mind the Gap Report would not be possible or nearly as impactful without the partnership of leading gap funding programs from across the globe. This report's sample consists of 141 distinct gap funding and accelerator programs spread across 84 research institutions and affiliated organizations.

These research institutions and organizations, which are [listed on the next page](#) and further described in Table 1, represent a broad mix of institution size, location, and vintage years of gap funding and accelerator programs, including:

- 127 gap funding programs managed by 76 research institutions
- Ten gap funding programs managed by five state or government agencies
- Four gap funding programs managed by three private venture firms

Careful consideration was placed in describing each organization and fund in the context of their historical involvement in the development of this 15 year-old, evolving resource, including:

- n=new participants in the Mind the Gap Report (10)
- u=participants in previous iteration(s) of MTG report, information updated for this report (42)
- l=legacy participants in a previous MTG report iteration, relevant historical information used where appropriate (33)
- i=international, non-US institution (10)

**45% of surveyed university gap fund and accelerator programs have been started in the past five years**

Table 1: Participant Overview by Institution Size, Region, and Vintage Year

Annual RE	Type of Fund				Grand Total
	Translational Research	Proof of Concept	Startup	Venture	
<\$250M	11	20	11	1	43
\$250-500M	5	19	4	3	31
\$500M+	7	27	14	5	53
NA	3	6	2	3	14

Region	Translational Research	Proof of Concept	Startup	Venture	Grand Total
Midwest	14	17	12	7	50
Northeast	4	17	3	1	25
South	3	10	9	3	25
West	3	17	4	1	25
Non-US	2	11	3		16

Vintage Year (group)	Translational Research	Proof of Concept	Startup	Venture	Grand Total
2010-Current	19	47	23	8	97
2000s	6	20	6	4	36
90s	1	2	2		5

Breakdown based on Association of University Technology Managers (2019 Annual Research Expenditures (RE)/Not Available (NA)), US Census Bureau (Region).

Participant regions are broken down as follows:

**Midwest:** Illinois, Indiana, Iowa, Kansas, Minnesota, Michigan, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

**Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

**South:** Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Washington DC, and West Virginia

**West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Wyoming

**Non-US:** Canada, France, Japan, Switzerland, Turkey, UK

**This lack of early-stage development capital must be recognized and addressed as a serious threat to future innovation and associated societal benefits.**

**Left without a solution, many promising technologies and startups will struggle to develop on a path of least resistance towards a sub-optimal end.**

**Research institutions and partners have created gap funding programs as a capital and innovation support mechanism to address this challenge.**

# THE ROLE OF GAP FUNDING

The early-stage capital sources that were identified in the previous section are vital to ultimately transitioning university innovation to the marketplace. However, they exhibit inherent conflicts that inhibit their ability to invest and provide reliable and well-positioned assistance for university technology development and startup formation. The outcome is a capital and support gap that forms from the misalignment between the expectations and funding capabilities of outside commercialization/capital sources and the needs of research institution technologies and startups.

This lack of early-stage development capital and support must be recognized and addressed as a serious threat to future innovation and associated societal benefits. Left without a solution, many promising technologies and startups will be stunted or will struggle to develop on a path of least resistance towards a sub-optimal end.

Moving forward, an excellent strategy to address this capital gap is either to incent the aforementioned private and public forms of early-stage capital into this space, or to invest directly into models that are better structured, positioned, and motivated to fund these technologies and startups. The best strategy is to support a solution that accomplishes both, like university technology and startup gap funding and accelerator programs.

Over the past 20 years, research institutions and partners have evolved gap funding programs as a capital and innovation support mechanism that is uniquely positioned to address the critical elements of technology development and startup formation from research institutions, while also attracting additional capital and participation from the technical, investment, and corporate communities.

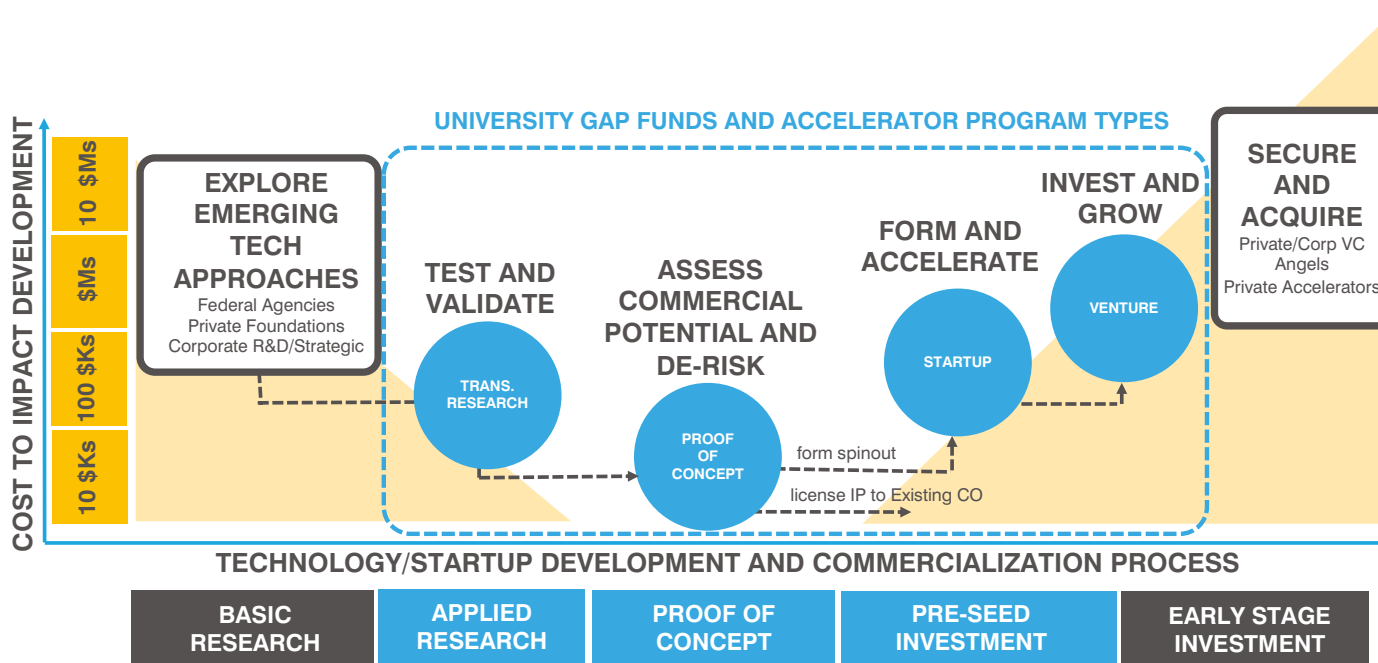


# Emerging Innovation Capital Landscape

A realistic look at the early-stage capital landscape uncovers a significant innovation capital and support gap between the transition of basic research through commercialization — an area that research institutions directly address through different [gap fund types](#) (Fig.9). In this view, it becomes clear that research institution-affiliated gap funding and accelerator programs are uniquely capable from a funding approach, operational positioning, and motivation standpoint to address this challenge. (Table 8)

Figure 1: [The Emerging Innovation Capital Landscape](#)

Table 2: [Comparison Between Traditional Funding and Gap Funding](#)



	Traditional Sources	Gap Funding
Funding Structure	More substantial investments in fewer deals in sectors that may not fully address technology with longer development timelines	Targeted, grants or relatively smaller investments per project, but fund more projects often in areas with longer development timelines typical in academic environments
Operational Positioning	Aversion to fund pre-revenue or early-stages of business formation due to investment risk preferences, management restrictions, and uncertainty	Focus on translational research, proof of concept, and startup development and are positioned in academia at the nexus of faculty, students, and innovation networking
Motivations/Expectations	Risk profile at this stage may make it difficult to justify the investment. Also, typical ownership vehicles like equity or collectible debt are less available in early-stage technology development	Mission-driven to innovate, educate, job create and attract outside capital, with the a secondary goal of longer-term ROI through licensing royalties and equity positions

NOTE: Not pictured are government-supported programs, as they often work in concert with university gap funding programs and align well with each of the gap fund types displayed

# DEFINING GAP FUNDS

The “gap” in gap funding refers to a vast shortage of capital and other commercialization support to identify, to evaluate, and to deliver research institution technology and startups to the marketplace. Defining this “gap” too broadly (e.g., “Valley of Death” or “between basic research and the market”) oversimplifies the complexities of the situation and clouds the path to resolution. It masks the unique function and intent of different gap funding programs and leads to confusion from the support community,

Therefore, we propose the adoption of a shared set of descriptors for gap funding programs, by focus area, that is based on observing these programs over the past 15 years and the realities of the [early-stage capital landscape](#).

Gap funding approaches to the larger “gap” can be broken down into four primary gap fund types, each with individual characteristics, structures, and commercialization priorities that are functional as standalone funds or as contributors to a broader systematic approach depending on the needs of the operation<sup>1</sup>. This view leads to an actionable and segmented view of gap funding programs ([Fig.10](#)) with three main advantages for fund managers:

- **Scalable:** Aligns with existing university technology commercialization processes, and other early-stage technology and product development processes
- **Customizable:** Opens up the opportunity for universities to create an individual approach based on the specific needs and capabilities of their institutions at each stage of the innovation process
- **Relatable:** Establishes a system that is identifiable by all stakeholders of early-stage innovation (public and private), and allows them an opportunity to identify their role as a partner in the process

This segmented approach to gap funding will play a prevalent role in the remainder of the report. We will detail the inner workings of each fund type and encourage you to view this as a necessary, interconnected university innovation, technology, and startup support system.

<sup>1</sup> Nearly 42%(35) of the surveyed institutions managed more than one gap fund type, usually through a staged combination of a proof of concept and startup accelerator type gap fund

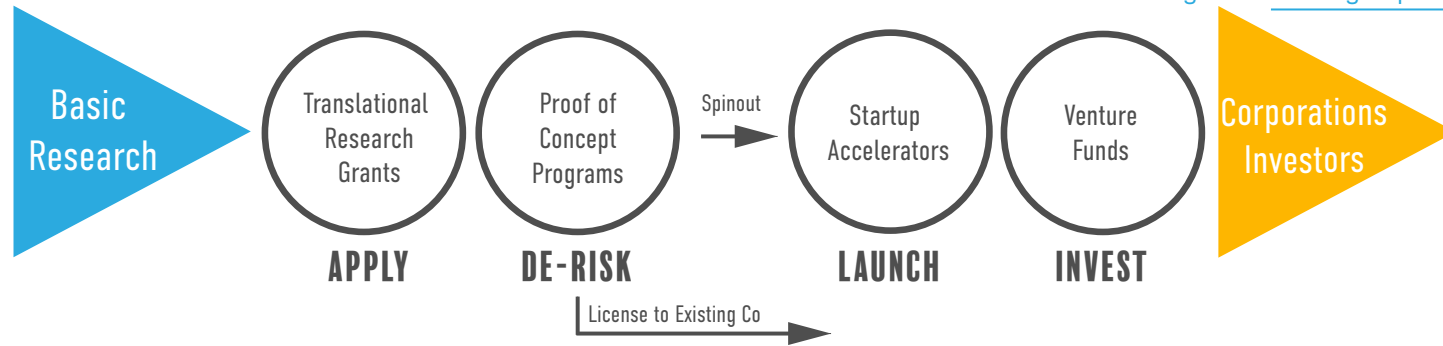
**The “gap” in gap funding refers to a vast shortage of capital and other commercialization support to identify, to evaluate, and to deliver university technology and startups to the marketplace.**

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**The larger “gap” can be broken down into four primary gap fund types, each with individual characteristics, structures, and commercialization priorities.**

# Defining Gap Fund Types

Figure 2: Defining Gap Fund Types



TRANSLATIONAL RESEARCH PROGRAMS	PROOF OF CONCEPT	STARTUP ACCELERATORS	VENTURE FUNDS
+	+	+	+
<b>FOCUS</b>	<b>FOCUS</b>	<b>FOCUS</b>	<b>FOCUS</b>
<p><b>Translational Research Gap Funds</b> support the applied development of research to a point where it can be assessed for commercial potential. These gap funds further the development of promising research projects after more traditional public funding subsidies. Research institutions often form or associate translational research gap funds with emerging technology priorities or historical scientific competencies.</p>	<p><b>Proof of Concept (POC) Gap Funds</b> evaluate commercial potential, demonstrate the value, and generally de-risk (or perception of risk) the project to commercial partners or investors. Achievements like prototypes and commercial assessment help to identify and secure a route to commercialization, if one exists. POC funds also identify weakness in the technology for further development or avoid downstream costs.</p>	<p><b>Startup Gap Funds</b> assist in the formational steps of spinouts — even before becoming a legal entity. This gap fund type could be seen as a startup-focused extension of proof of concept funding that further develops the business application of the tech through market research, product development, business development, management, space, and equipment to attract third party interest and capital.</p>	<p><b>Venture Gap Funds</b> invest in scaling and growing established spinouts. Research institutions have created, spun out, or partnered with seed funds and accelerators, both public and private, to fill this void in early-stage startup capital and to directly invest in their startups. Some institutions are even beginning to invest in non-institution startups.</p>
+	+	+	+
<b>MANAGEMENT</b>	<b>MANAGEMENT</b>	<b>MANAGEMENT</b>	<b>MANAGEMENT</b>
<p>College-level or research center in particular technology focus areas. Technology transfer or research administration may also support a campus-wide initiative. External partnerships through public or private translational research funding programs also exist.</p>	<p>These funds are often administered centrally through the technology transfer office, research foundation, central research administration, or the equivalent at the college-level. Externally-partnered public funds, accelerators, and corporate funds run independently or in close collaboration with the research institution.</p>	<p>These funds are primarily administered by the technology transfer office and associated venture centers. External public-private arrangements to support business creation are managed by a sponsoring agency or through close collaboration with the research institution.</p>	<p>University-managed Venture Gap Funds are limited based on the required capital. Often at institutions with sizeable internal reinvestment capability or donor base.</p> <p>To overcome this challenge/mitigate risk, research institutions may partner with existing venture firms or investor groups.</p>
+	+	+	+
<b>FUNDING APPROACH</b>	<b>FUNDING APPROACH</b>	<b>FUNDING APPROACH</b>	<b>FUNDING APPROACH</b>
<p>Grants: often directed and continued based on achieving technology development milestones.</p>	<p>Grants: generally no direct repayment expectations; however, in some cases repayment schedules can be set-up to support fund sustainability.</p>	<p>Grant or investment: Investment is often structured to entice third party interest and limit financial constraints on company in the formative years.</p>	<p>Investment: Equity, convertible debt, or repayment directed at maintaining a stake in the company and realizing a return.</p>
<b>TRL 1-2</b>	<b>TRL 3-8</b>	<b>TRL 7-9</b>	<b>STARTUP SCALING</b>
<b>26 FUNDS SURVEYED</b>	<b>72 FUNDS SURVEYED</b>	<b>31 FUNDS SURVEYED</b>	<b>12 FUNDS SURVEYED</b>

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