GOVERNMENT DRIVES INNOVATION
WHERE IT WORKS AND HOW IT COULD IN WASHINGTON
Supporting the growth of nascent businesses is a foundation for economic development nationwide and increasingly there is more attention on growing tech-focused small businesses, which generally create higher-wage jobs. In Washington state, small business employment represents more than half of the state’s total employment, and firms with fewer than 100 employees have the largest share.¹ States develop a variety of programs to fund and support these businesses, but all recognize their importance in driving job and wage growth. However, among its peer innovation states (California, Massachusetts, New York, and Texas) Washington is one of only two without public incentives or funding for tech-focused small businesses (startups) and innovative research. This paper analyzes public investment mechanisms created to support innovation-driven startups and research and suggests ways to leverage public funds to facilitate economic growth in Washington state.

¹ States
Startup companies in any sector face a number of obstacles in order to become a sustainable business, but raising capital is the primary barrier to entry. While most startups look to the private sector for funding, in many regions public dollars are also available to catalyze growth. How public dollars are made available, however, varies greatly. Understanding the goals of each public investment approach helps not only to gauge its impact, but also to consider its applicability to a particular circumstance.

### State Incentives

<table>
<thead>
<tr>
<th>R&amp;D</th>
<th>TAX CREDIT</th>
<th>INVESTOR TAX CREDIT</th>
<th>INVESTMENT OR GRANT FUND</th>
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<tbody>
<tr>
<td>✓</td>
<td>✓</td>
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</table>

- **X**: None/Expired
- **✓**: Incentive in Place

### Financial Return

Every state has funds that invest primarily or solely for financial return. Generally, these are public employee retirement funds. Many of these funds invest within their own states, keeping dollars within the state and catalyzing economic growth even as they drive returns. The following examples from Oregon and California illustrate two such approaches.

#### Oregon Growth Account

The Oregon Growth Account’s primary goal is to drive financial returns to the state’s Education Stability Fund (which is also supplemented by the Oregon state lottery). The Oregon Growth Account functions as a public limited partner in private investment deals, making per-deal investments ranging from $500,000 to $7 million. Since its launch in 1999, the Oregon Growth Account has invested $200 million in emerging businesses. Returns on investments have ranged from 6.8% for 2004–2016, to 9.4% for 2009–2016.

Although the economic downturn led to losses in the fund’s first five years, the Growth Account’s return on investment has surpassed the target of 7.5% overall for the Oregon Public Employee Retirement System. The Oregon Growth Account has delivered nearly $30 million in dividend returns to the Education Stability Fund while catalyzing growth in emerging businesses in the state. With progressively improving results over the last decade, the state legislature continues to support the Oregon Growth Account.

### Market Molding

Goal of achieving broad economic growth by focusing on key drivers of innovation (e.g., research)

#### OREGON INC Investment Outcomes after four Biennium of Funding (2007–2015)

- $77 million from state drove $490 million from federal grants and $130 million in private capital
- $1 state dollar → $6 federal dollars and $1.68 private dollars
- Launched 11 shared public-access labs, utilized by 300 companies
- Catalyzed formation of 90 companies

### Targeted Maintenance and Support

Used to fix specific deficiencies in an entrepreneurial ecosystem, like capital investment gaps and insufficient research and development (R&D) activity

### Market Molding

In contrast to mechanisms focused on financial returns, another Oregon account considers a broader view of the market and innovation ecosystem. This section highlights this mechanism, which leverages public dollars to create jobs, new startups, and attract additional capital.

#### Oregon Innovation Council

The Oregon Innovation Council (Oregon InC) is a partnership of more than 50 government, private sector, higher education, and nonprofit leaders. Since Oregon InC’s 2007 inception, the partnership’s purpose has been to achieve broad economic development in innovation and research. Specifically, the state has tasked Oregon InC with creating new jobs, improving research leading to innovation, and building out capacity for growth. To accomplish these tasks, the Oregon InC board submits a new innovation plan to the state legislature every two years and negotiates a biennial support package of $15–20 million. The biennial budget for 2017–2019 is $17.5 million.

Oregon InC investments are divided into three funds:

- **Signature Research Centers**, which focus on nanotechnology, health and biotechnology, and clean energy technology. These investments support operations of nonprofit accelerators that move research from universities to entrepreneurs.
- **Commercial Gap Fund**, which tries to address the knowledge and capital gap a company experiences before it is big enough to solicit funds from larger private VCs. The Commercial Gap Fund invests through convertible notes and small equity stakes and is focused more on the development of an innovation ecosystem than on driving large returns on these small investments.
- **High Impact Opportunity Program (HIOP)**, an open-enrollment competitive grant program focused on strategic high-tech sectors. HIOP provides grants between $100k and $400k.

Oregon InC provides support so that ideas and research can be cultivated to a point where private investors are willing to make follow-on investments. To date, $130 million in private capital has been raised side-by-side with the state’s investment. Oregon’s broad view of what drives the state’s innovation ecosystem has reaped returns for both private and public sector partners.
TARGETED MAINTENANCE AND SUPPORT
In contrast to broad stimulus mechanisms like Oregon Inc, a targeted approach addresses specific ecosystem shortcomings. Two examples of these specific strategies solve for deficiencies in venture capital investment and R&D capacity.

VCAP AND VCCI
Canada announced the Venture Capital Action Plan (VCAP) in 2013, with three goals:
1. Catalyze development of a thriving and sustainable venture capital and small business ecosystem led by private sector investments.
2. Encourage private investment in innovative early-stage companies and support the success of these companies.
3. Increase the number of experienced fund managers in Canada.

Under VCAP, the Canadian government invested $340 million in four Fund of Funds (FoF) and $50 million in four venture capital funds. Between 2015-17, the success of this FoF program led to another round of fundraising, which has generated an additional $1.5 billion for investment (fully committed by the end of 2017). Separately, VCCI has directly invested (not through FoF) in 102 innovative Canadian companies, across life sciences, information and communications technology, and energy and clean technology.

Building on the success of VCAP, the Canadian government increased its commitment to this effort in 2017 when it launched the $400 million Venture Capital Catalyst Initiative (VCCI). For every dollar the VCCI invests, private sources including corporations, institutional investors, and wealthy individuals must match 2.25x. This initiative leverages VCAP momentum and focuses on larger capital, late-stage VC investment. VCCI also strives to support greater diversity and address gender imbalance in the VC community. Candidates with accepted proposals will be required to report on the gender balance of both the fund managers and the entrepreneurs they support.

Although other countries (e.g., Ireland, with their R&D tax incentive) and states have also used targeted incentives to grow and support locally-driven innovation in research and startup support, Canada’s active programs provide the most relevant illustration.

PRIVATE INVESTMENT DRIVEN BY CANADA’S VCCI
$390 million public investment = $1.5 billion additional private investment

PUBLIC INVESTMENT AS AN INNOVATION STRATEGY FOR WASHINGTON
Public employee retirement funds invest to drive financial returns, but could also drive economic growth in their home region by adding a localized, geographic filter. Broad market-molding can be difficult to measure and promote and may ultimately be too shallow to have a significant impact. Targeted maintenance and support of innovation ecosystems can be very effective with specific goals, but may also be too narrow to drive much growth. Most public entities will use a variety of investment and incentive mechanisms to drive growth, focusing on industries and levers most relevant to their regional economy. This next section explores three strategies and possibilities for Washington state.

LOCAL SPOTLIGHT: PUBLIC INVESTMENT IN WASHINGTON
Washington’s approach to public investment as a driver of technology research and commercialization has been inconsistent, due to varied public investment goals and lack of metrics to measure performance. This section discusses three of the mechanisms Washington has implemented in recent years and the challenges of each.

WASHINGTON STATE INVESTMENT BOARD
Similar to CalPERS, the Washington State Investment Board (WSIB) manages investments of 17 separate retirement funds and 16 other funds. Per the state’s investment charter, the WSIB is guided by a strict fiduciary responsibility to achieve financial returns for its retiree investors.

The WSIB has invested in very few (approximately six) Washington-based or Washington-focused funds. In fact, non-WSIB limited and general partners have invested 17 times more in Washington-focused funds than WSIB.

The WSIB’s breadth and diversity of investment is limited by its charter to achieve maximum financial returns and minimal and predictable level of risk. However, Washington state’s strong technology sector may be an opportunity for WSIB to allocate more of its private equity portfolio to Washington-based funds that drive growth in the technology ecosystem while still achieving WSIB fiduciary duties.

LIFE SCIENCES DISCOVERY FUND
In 2005, former Governor Christine Gregoire established the Life Sciences Discovery Fund (LSDF) to carry new companies through the high-risk process of moving innovation from the lab to market. Initial funding came from the Gates Foundation and other philanthropic organizations, as well as the Attorney General Office’s 1998 settlement with major U.S. tobacco manufacturers.

State funding for the LSDF was discontinued in 2015. The primary goal of LSDF was to help companies raise enough early capital to make it through the “valley of death” gap between federal funding for basic research and private capital for trials and commercialization.

How one views the legacy of the LSDF hinges on one’s definition of the goal and metrics of success. Some who view the primary purpose as driving financial returns for the state see the fund as a failed government program and waste of public funds. Others argue the purpose of the LSDF was not strictly about financial returns and that it was on its path to achieving its purpose—commercializing breakthrough research for the benefit of Washingtonians (and beyond)—and was terminated prematurely. Either way, the LSDF suffered from an opaque purpose and unclear success metrics.

THE LIFE SCIENCES DISCOVERY FUND
• Helped create or expand approximately 40 life science startups
• Awarded 112 grants worth $106 million (2007–2015)
• $106 million public investment attracted $550 million additional private investment

% PRIVATE EQUITY PORTFOLIO IN VCS IN STATE RETIREMENT FUNDS
CalPERS 3.8%
WSIB 20%

THE LIFE SCIENCES DISCOVERY FUND
$1 public LSDF dollar + $3.70 private investment

BRITISH COLUMBIA’S PUBLIC-PRIVATE TECH FUND
$100 million publicly funded venture capital fund launched in 2016
• Managed by Kensington Capital Partners
• Invests in VC funds and emerging technology companies at Series A stage
• Investment Areas to Date: ICT, life sciences VC, connected cars, tech VC, cloud/Al/security VC, clean tech VC

THE LIFE SCIENCES DISCOVERY FUND
$1 public LSDF dollar + $3.70 private investment
INDUSTRY-SPECIFIC TAX INCENTIVES
Washington state has explored a number of tax structures in order to drive economic growth. Two recent examples are the aerospace tax credits (enacted in 2013) and the high-tech R&D tax credit and sales tax deferral (1995–2015). Both of these have complicated and disputed outcomes, for the benefitting industries and the state coffers, and there seems to be little appetite among state policy makers to continue support for industry-specific tax incentives.

Biotechnology and life sciences industries have struggled to maintain a robust presence in Washington state with limited tax incentives. A biotech company operating in Washington faces tens of millions of dollars more in expenses than in many other states. The double impact of limited R&D tax incentives and the lack of direct public investment through a program like the LSDF is driving investors and entrepreneurs to states that actively facilitate the growth of young companies. From 2001 to 2011, employment in Washington’s life sciences industry experienced strong growth. Since 2011, however, employment has decreased or remained stagnant, underperforming compared to the national life sciences industry average.

MUNICIPALITY INVESTMENT
At least for the near future, it is hard to imagine Washington policy makers adopting new state-level incentives for technology and innovation-driven industries. The competing interests and parties—from industry to government leaders to the public—make developing a common understanding and agreement on a public investment mechanism an enormous challenge. At its best, successful public investment is proactive, bold, and patient—attributes that may better describe local government. The next step towards enhancing the vitality of Washington’s entrepreneurial technology ecosystem may lie with cities and counties.

SPokane HSSA
In 2007 the state legislature passed RCW 35.10429 to allow municipalities or counties with populations under 1 million to form a health sciences and services authority (HSSA). The law allowed for the creation of two HSSAs in Washington. The first HSSA was formed in 2008 and is located in Spokane County. While two HSSAs were approved, the second one has yet to form.

The Spokane HSSA is authorized to use a small percentage (less than 0.1%) of the state’s share of existing countywide sales taxes to make grants to entities in order to “promote bioscience-based economic development, advance new therapies and procedures to combat disease, and promote public health.” Since the first grant was issued in 2009, the Spokane HSSA has invested $5.3 million through 17 grants. Grant recipients qualify in one of four categories: Human Capital & Infrastructure Grant (multi-year, match required); Innovative Translational Research Grant (multi-year, match required); Small Business Health Sciences Research Grant (multi-year, SBIR/STTR match); and Grant-Writing Support (SBIR/STTR). The initial $5.3 million invested has resulted in more than $20 million of additional federal investment and is making Spokane a credible health sciences hub—a fantastic point-of-proof for this municipal-driven effort.

FEDERAL GRANT MATCHING
Research is at the core of innovation and research institutions drive economic growth with their jobs, spin-offs, and commercialization efforts. Most federal research grants require matches, which local governments can help provide. Entrepreneurial strategy is one of many determinants of startup success, but even the most promising ideas will fail without access to funding at the critical time. Oregon InC receives special funding to run a grant-matching program for companies that have already received federal grants. Additional capital for these companies is critical since federal money is restricted. For example, important measures outside the federal guidelines, including protecting intellectual property and marketing new products, require funding. Washington cities and counties could play a similar role for our large research institutions.

If a city or county acting alone does not have the capital available to invest in a federal grant-matching program like this, municipalities could come together to raise funds. Pooled resources of neighboring cities—the Innovation Triangle of Bellevue, Kirkland, and Redmond, for instance—could significantly bolster an area’s tech-innovation footprint by providing a shared match.

ALTERNATIVE MECHANISMS
In addition to traditional grant, investment, and incentive mechanisms, creative approaches that focus on knowledge-sharing and startup guidance can also help drive startup and research activities. The mechanisms highlighted below are suggestions for locality-specific efforts.

NON-FINANCIAL ALTERNATIVE MECHANISMS

<table>
<thead>
<tr>
<th>CoMotion - University of Washington (UW)</th>
<th>Office of Commercialization - Washington State University (WSU)</th>
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<tbody>
<tr>
<td>• Startup-focused</td>
<td>• Evaluates, protects, and commercializes innovations</td>
</tr>
<tr>
<td>• No equity investment</td>
<td>• Provides work space for startups</td>
</tr>
<tr>
<td>• Provides facilities and co-working space</td>
<td>• Bridges gap to connect WSU research with industry partners</td>
</tr>
</tbody>
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<tr>
<th>Startup Seattle - City of Seattle</th>
<th>Startup 425 - Cities of Bellevue, Kirkland, Issaquah, Redmond, and Renton</th>
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</thead>
<tbody>
<tr>
<td>• City acts as convener and advocate for local startups</td>
<td>• Provide access to general business and entrepreneurship advice</td>
</tr>
<tr>
<td>• Does not broker or connect to capital sources</td>
<td>• Does not broker or connect to capital sources</td>
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SNAPSHOT OF WASHINGTON’S FEDERAL GRANTS AWARDED

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<tbody>
<tr>
<td>• $55.2 million awarded</td>
<td>• $7.1 million in business grants</td>
</tr>
<tr>
<td>• Across 109 awards</td>
<td>• To universities and colleges</td>
</tr>
<tr>
<td>• To 74 unique recipients</td>
<td>• $105.9 million to universities and colleges</td>
</tr>
<tr>
<td>• From 10 federal agencies</td>
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</tr>
</tbody>
</table>

Washington research institutions currently receive millions in federal grants, and even more is available. By partnering with these institutions and providing pooled match funds, Washington cities and counties would likely see a growth in tangible economic benefits (jobs, new startups, reputation, etc).
GOVERNMENT, INVESTMENT AND INNOVATION
Small business growth is the backbone of the economy and technology-driven startups are a critical component of this growth. Washington continues to perform well on most comparative measures of technology and innovation (deals closed, total VC funds invested, patents, etc.), but sustained expansion will depend on diversifying the types and amounts of investment.

There are mechanisms and models that the state and its municipalities could mimic and leverage, including but not limited to direct investment, tax incentives and credits, and pooled funds. The Technology Alliance, as lead partner, challenges our state, local policy makers, and Pacific Northwest-focused investors to explore these opportunities. Four potential approaches are proposed below.

STATE INVESTS IN WA-FOCUSED FUND MANAGERS
State investment board committees at least 50% of its venture capital portfolio invested in funds where at least 50% of investments are in Washington state (assumes all regulatory and reporting requirements are met)

MUNICIPALITIES TAKE THE LEAD
Counties and cities work with large research institutions to provide matches for federal grants

PRIVATE DOLLARS MATCH STATE INVESTMENTS IN WA-FOCUSED FUNDS
Industry raises side-by-side fund to exceed public commitment to WA-focused funds

GOVT OPENS DOOR FOR INNOVATORS
State and local governments drive innovation through internal innovation funds, entrepreneur-in-residence programs, or commitment to be the “first customer” for relevant startups

END NOTES
Phone Interview, Director of Oregon Growth Board & Capital Strategist at Business Oregon (Feb 2016)

“Id.
https://www.usa.gov/government-ments/
https://www.oregon.gov/st/82a52c598fd3/82a52f155f25-82a52c598fd3-
https://www.ia.gov/sites/default/files/82a52c598fd3/82a52f155f25-82a52c598fd3-82a52f155f25.pdf

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Private Dollars Match State Investments in WA-Focused Funds

Industry raises side-by-side fund to exceed public commitment to WA-focused funds

The Technology Alliance will look for ways to advance these ideas, get traction, and support the efforts to bring new sources of capital to the state’s researchers, innovators, and startup leaders. Please join with us.

SOURCES
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SOURCES FOR CALLOUT BOXES
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• R&D Tax Credit
  o https://www.sba.gov/content/business/investors/partners/credits/scientific-research
  o https://www.ic.gc.ca/eic/site/061.nsf/eng/h_03033.html
  o https://www.ic.gc.ca/eic/site/061.nsf/eng/h_03076.html
  o http://www.oregon4biz.com/Innovate-&-Create/Oregon-InC/About/

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  o https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB999
  o https://www2.gov.bc.ca/gov/content/taxes/income-taxes/corporate/credits/scientific-research-

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