



**The Oregon  
Innovation  
Council's  
Innovation Plan**

**2016**

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# Contents

Letter from the Chair .....	1
Executive Summary .....	2
Introduction .....	4
Oregon InC's First Decade .....	5
Companies Supported by Oregon InC .....	6
Evolution of the Plan .....	7
Results .....	7
Key Lessons .....	8
The First Decade .....	10
Changing Context of Innovation .....	24
Oregon Economic Indicators at a Glance .....	25
Trends in Innovation: Then & Now .....	26
Big Changes .....	27
Availability of Capital to Support Business Development & Growth .....	31
Changes in Oregon Industry .....	35
Changes Across Industries .....	37
Changes in Oregon .....	39
New Directions for Innovation Policy .....	41
Oregon InC, Business Oregon & the State's Innovation Ecosystem .....	43
Going Forward: A Transition Year .....	46
Summary .....	50
Oregon's 2015 Innovation Scorecard.....	51

# Letter from the Chair

## What a difference a decade makes.

In 2005, when the Oregon Innovation Council (Oregon InC) was created, no one carried an iPhone, social media had yet to take the world by storm, drones were science fiction, and "big data" was an unfamiliar term. Fast forward ten years and it is widely acknowledged that innovation in today's global economy is being driven by the mash-up of powerful information technologies, data science, and traditional industry and civic sectors ranging from automobiles (driverless cars) to municipal government (smart cities) to health care (wearables). In a single decade, mobile technology and the "internet of things" has literally transformed the way we think, work, consume, and problem-solve.

Commensurate with these technological advances, Oregon's innovation ecosystem has evolved dramatically in the past decade. The Portland metro region has become a hotbed for entrepreneurial activity and start-ups; the technology transfer function of our state's research universities has grown significantly; multiple, new business accelerators have been established across the state; and Silicon Valley companies have moved to Oregon in droves signifying a shift from our traditional strength in hardware to a new and growing strength in software.

Our rural communities are also pursuing new strategies to support and grow creative, entrepreneurial companies. It's clearer than ever with growing concerns about climate change and depletion of natural resources that we must look to rural entrepreneurs to invent and test solutions in forestry, agriculture, and food production.

Oregon InC has played a critical role in building the state's innovation ecosystem over the past ten years. The strategies and investments of the Council generated significant returns to public and private partners and to the communities in which new innovation infrastructure took hold and new companies were launched. Ten years into this ambitious state effort, it is time to take stock: to review what Oregon InC has accomplished; to examine where the innovation economy is headed; and to determine how innovation investments should be made today given a rapidly changing landscape.

This year, the Council saw three fundamental changes:

- /// Governor Kate Brown appointed 12 new Oregon InC members, including a new Chair;
- /// Oregon InC became a part of Business Oregon's base budget for the first time; and
- /// The Oregon University System was dissolved in favor of independent governance for Oregon's research universities, all of whom are Oregon InC partners.

New Council members, our partners at Business Oregon, and communities across the state owe a debt of gratitude to the dedicated Oregon InC board members who retired this year. They provided critical leadership launching Oregon's flagship innovation initiative and shepherding it through a tumultuous decade punctuated by two recessions and the introduction of new technologies that revolutionized every aspect of business creation.

We offer this document as a testament to what's been accomplished, what we've learned as a result, and how both have informed our understanding of the opportunities before us in 2016 and beyond.

We hope you will join us in this exciting endeavor.



Erin Flynn,  
Chair, Oregon InC

# Executive Summary

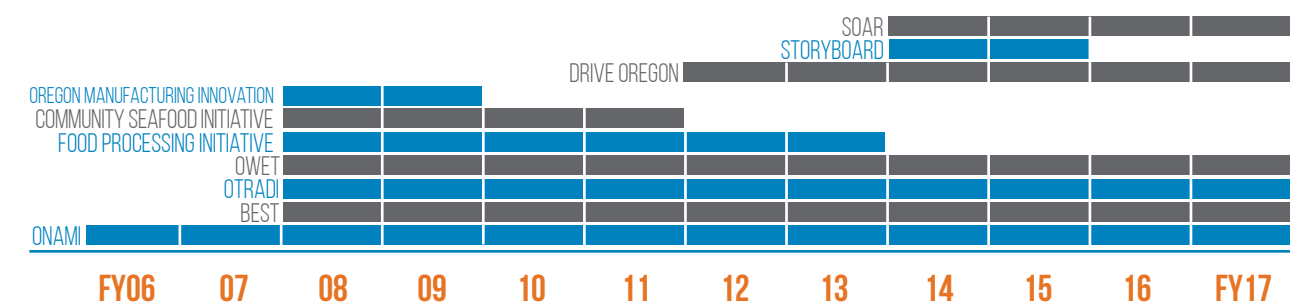
**Innovation. It means many things to many different people, but is a near universal aspiration. This is because growing local economies, increasing workers' wages, and improving community well-being are goals for leaders and citizens alike, all over the world. Achieving them sustainably requires doing new things in new ways—better ways. That's what innovation is all about.**

Innovation is at the heart of Oregon InC's work. For a decade, Oregon InC has developed models for innovation policy and advocated its practice across the state, with the Oregon Innovation Plan, Signature Research Centers, and key industry initiatives as the primary vehicles. Recent changes in the Council's membership and organizational structure have now created an opportunity to reevaluate this strategy.

This document aims to do just that. It provides an overview of the Council's strategies and achievements since 2005, describes some of the major changes that have occurred in Oregon's innovation landscape, and identifies opportunities for innovation policy moving forward.

Unlike previous innovation plans, the 2016 Oregon InC Innovation Plan offers no new funding proposal. The legislature allocated the 2015-17 Oregon InC portfolio to Business Oregon's base budget, and entrusted Business Oregon and the Council with oversight of this allocation going forward. Envisioning an "Oregon InC 2.0" will necessarily include a transition period during which Oregon InC will continue to support the state's Signature Research Centers and a small number of industry initiatives, while crafting a new process and strategy for advancing innovation in Oregon through the next decade.

## OREGON INC INITIATIVES TIMELINE:





# Introduction



**Improving Oregon's ability to innovate in emerging and traditional industry clusters by advancing the commercialization of Oregon research was the charge of Oregon InC when it was founded a decade ago.**

Today, the new Oregon InC faces a significantly different economic and technological landscape that provides opportunities for strategies that didn't exist or weren't possible ten years ago.

This document offers a review of the Council's past decade—what's been learned and what's been accomplished to date. It also provides a perspective on the fundamental changes in Oregon's economy and the changing landscape of innovation. Finally, it points toward the next generation of challenges and opportunities Oregon faces in crafting innovation policy for the decade ahead.

# The Oregon Innovation Council's First Decade

In 2005, Oregon declared innovation central to its efforts to build prosperity throughout the state and created Oregon InC. Long championed by the private sector, innovation was more difficult for public-sector leaders to integrate into state programs, as there were few models of innovation policy anywhere at the time. In 2007, Oregon InC, a partnership of more than 50 government, private sector, college, university, and nonprofit leaders, created such a model— the Oregon Innovation Plan—and put it into practice.

The Council identified key principles that would guide its first decade of work:

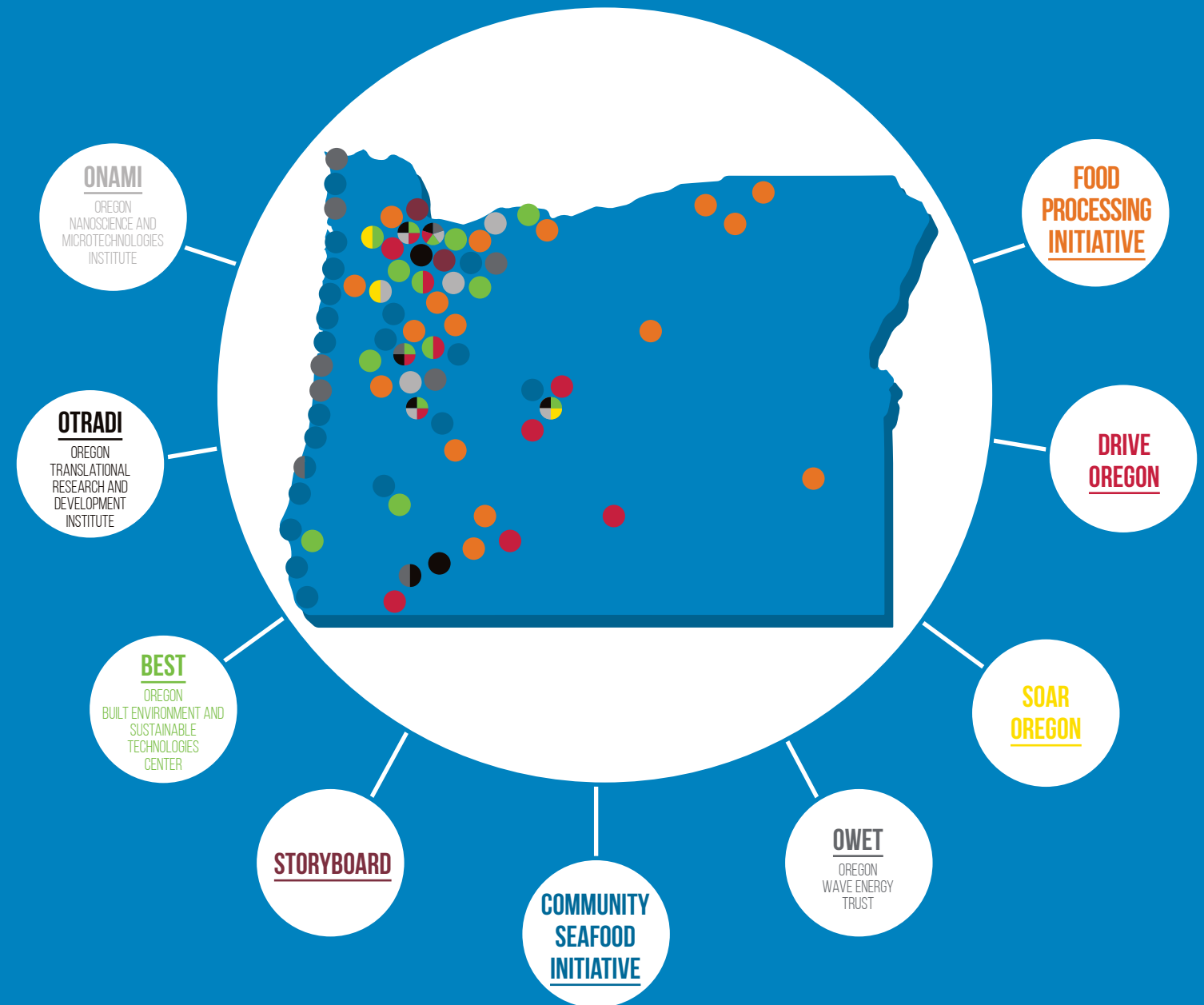
- /// An emphasis on the whole process of technology development and transfer, not just commercialization
- /// A focus on Oregon's unique, hard-to-replicate assets—key industries, talent, resources, and collaborative culture
- /// A strategic approach—emphasizing cooperative investments and activities rather than disconnected projects

The Oregon legislature charged Oregon InC with meeting eight key objectives:

1. Increasing wages
2. Creating new jobs
3. Improving research leading to innovation
4. Improving access to capital (for Oregon researchers and entrepreneurs)
5. Increasing high-value Oregon exports
6. Growing high-wage jobs linked to rural industries
7. Building Oregon's global brand in sustainability
8. Building innovation capacity

These goals strongly influenced the Council's early planning.

## Companies Supported by Oregon InC



## Evolution of the Plan

Oregon InC was established by state statute in 2005 but did not have a regular allocation in the state's budget. Rather, every two-year budget cycle, Oregon InC submitted a new Innovation Plan

to the Oregon legislature and negotiated a package of support for proposed programs and activities.

The first plan was submitted in 2007, and new plans have been

submitted for consideration every two years thereafter.

Over the decade, Oregon InC implemented three high-level strategies:



**1** INVESTING IN SIGNATURE RESEARCH CENTERS



**2** SUPPORTING KEY INDUSTRY INITIATIVES



**3** CHAMPIONING INNOVATION

## Results

The strategies and investments of the Council have generated significant returns to both public and private-sector partners—often in combination—and to the communities where new innovation infrastructure has been established and new companies launched. During its first decade, Oregon InC investments catalyzed:



**\$617 MILLION** leveraged on an \$83 million state investment, a return on investment of over 7:1



**\$475 MILLION+** in federal and industry research grants and \$142 million in private capital raised



**90** new companies



**471** newly created jobs (2010-2015)



**11** shared public-access labs launched on university campuses used by over 300 companies

## Key Lessons

Oregon InC learned much during its first decade crafting and implementing the Oregon Innovation Plan. Business Oregon, the state's economic development agency responsible for Oregon InC operations, has taken these many lessons into account, seeking to improve its own capacity and expertise each year. As a nation in 2015, we know that technology-based economic development (TBED) is a vital approach that every state must adopt in the new economy.

We also know that the necessary ingredients for an innovation ecosystem include:

- /// A research base that generates new knowledge
- /// Mechanisms for transferring knowledge to the marketplace
- /// An entrepreneurial culture
- /// Diverse sources of risk capital
- /// A technically skilled workforce

The broader lessons that follow speak to the practice of innovation policy itself—how it works and what it requires to be effective in Oregon:

**1.** Oregon innovation (and innovation policy) is a long game. The nature of innovation—its meaning and practice—changes over time and with context. Revisiting strategies more frequently may help Oregon InC increase its impact and help members identify ways to add value beyond advising the agency on the Innovation Plan.

**2.** Innovation (in Oregon and elsewhere) is unpredictable—it can come from anywhere and is not solely university-based. Increasingly, it relies on multi-sector partnerships and involves companies of any size or stage of development. This suggests a potential role for Oregon InC as convener, connector, and accelerator, not just a funder.

**3.** Oregon InC needs improved “radar,” better data, and more sophisticated ways of understanding its impact on a variety of stakeholders and communities, and on the metrics it is charged with influencing. These process innovations will help the Council better analyze its work and communicate what it does and why more effectively, engaging a broader public in Oregon's innovation agenda.

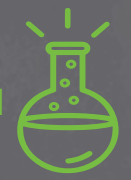
These lessons will inform the new Innovation Council's strategy in the coming years.

The full impact is a challenge to quantify but boils down to this: Oregon InC created an approach to innovation that strengthened Oregon's research and development capacity, catalyzed new industries and new companies, and delivered a range of public benefits across the state.



# The First Decade

## 1 INVESTING IN SIGNATURE RESEARCH CENTERS



Investing in Signature Research Centers (SRCs) accelerates commercialization efforts, facilitates public-private partnerships, and anchors next-generation industries in Oregon. To date, the Council has invested \$59 million in three SRCs: the Oregon Nanoscience and Microtechnologies Institute, the Oregon Translational Research evelopment Institute, and the Oregon Built Environment and Sustainable Technologies Center.

## 2 SUPPORTING KEY INDUSTRY INITIATIVES

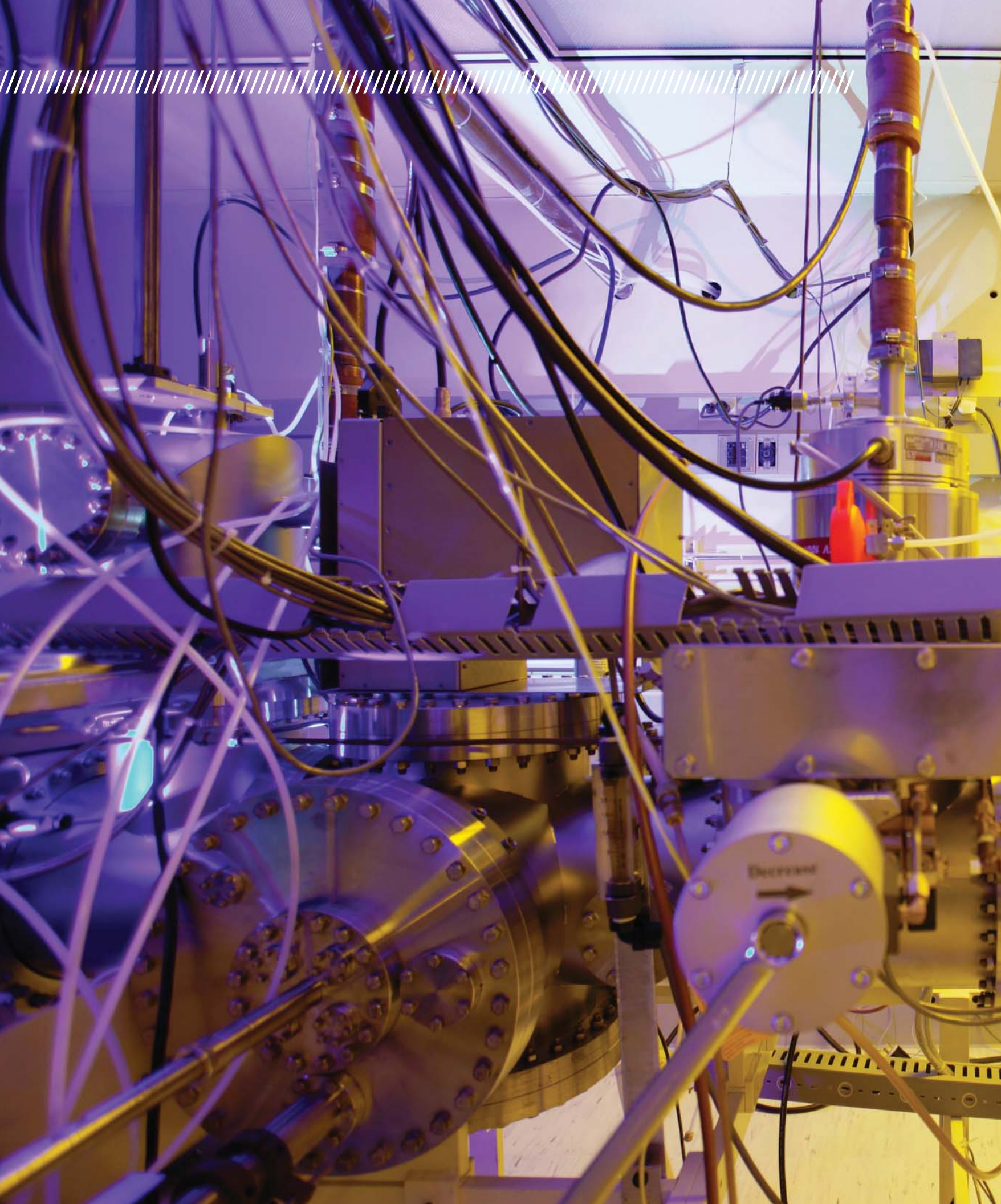


Supporting industry initiatives enables smaller-scale experimentation with new technologies, processes, and collaborative efforts in both emerging and existing industries. During its first decade, Oregon InC supported dozens of projects through investments in food, manufacturing, alternative energy, transportation, and creative services industries—a combined investment of \$24 million.

## 3 CHAMPIONING INNOVATION



Innovation is a key driver of Oregon prosperity. Innovation Council members themselves, together with industry advisors and thought leaders convened by Business Oregon and other industry associations in the state, used the Council as a platform to launch important conversations about innovation throughout Oregon and within the legislature and state agencies.



## Oregon's Signature Research Centers

At Oregon InC's inception in 2005, Council members envisioned major investments in a small number of Signature Research Centers that would catalyze innovation across the state. Through these centers, university researchers would collaborate with private-sector partners to commercialize new technologies, leading to new businesses and new high-paying jobs. At the same time, local government, business, and nonprofit leaders would make complementary investments in infrastructure and talent so that their communities would be able to contribute to and benefit from public investments in the state's SRCs.

In 2005, the State made an investment of \$7 million in ONAMI. With Oregon InC's first funding recommendation in 2007, ONAMI received \$8.5 million. OTRADI and Oregon BEST were launched and supported by Oregon InC in 2007 as well. These three ventures became Oregon's inaugural Signature Research Centers.

In 2009, 2011, and 2013, Oregon InC continued to invest in these efforts, allocating a total of \$59.2 million in the three SRCs during its first decade. A summary of major SRC accomplishments follows.





# Oregon Nanoscience & Microtechnologies Institute

Headquartered in Corvallis near Oregon State University, ONAMI is a collaboration among Oregon research universities, the Pacific Northwest National Laboratory, and major Oregon industry partners focused on accelerating research and commercializing resulting technologies.

From its beginning in 2005, ONAMI has developed a nationally-recognized model of collaborative, innovation-centered economic development. Today, ONAMI manages a professional commercialization gap grant fund and supports startup companies with market research, internships, and mentoring. ONAMI also coordinates and promotes shared research and lab facilities for industry and academic researchers, and provides matching grants to researchers working with Oregon industries.

## Since 2005, ONAMI has:

/// Supported 53 companies with gap grants (a total of \$7.9 million) that helped them attract over \$170 million in private capital, additional grants, and revenue;

/// Aided ONAMI members in attracting \$361 million in research support (public and private) and another \$36 million in in-kind access to facilities, equipment, and resources;

//// Supported ONAMI-member companies employing 205 full-time equivalent jobs, high-wage jobs—including those hired by promising startups such as VallisCor, Energy Storage Systems, Suprasensor and OnBoard Dynamics.

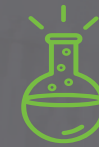
ONAMI member researchers recently won a highly competitive \$20 million National Science Foundation grant to establish a Center for Sustainable Materials Chemistry (CSMC) at Oregon State University and the University of Oregon. The Center will focus on developing high-performance materials from resources that are abundant in nature and processes that are less energy intensive than current industry standards—a truly Oregonian approach to innovation in chemistry and materials science. ONAMI has already funded or assisted the first CSMC spinoff companies: Inpria, Amorphyx and Beet, and more are expected.

## ONAMI

Launched in 2003

Oregon InC dollars invested since 2005:  
\$32.2 million

[www.onami.us](http://www.onami.us)



# Oregon Translational Research and Development Institute

The Oregon Translational Research and Development Institute was established in 2007 with a \$5 million award from Oregon InC. A partnership of Oregon Health & Science University, Oregon State University, Portland State University, and a group of six bioscience firms, its mission was to translate scientific research developed in Oregon's laboratories into commercial ventures.

Oregon InC's initial seed funding helped OTRADI establish itself at Portland State University and begin organizing industry assets—a library of therapeutic targets and unique chemical compounds, a network of talented researchers and scientists, and an inventory of existing intellectual property with the potential to grow the infectious disease research, drug development, and biotechnology cluster in the state. OTRADI began to offer screening and testing equipment and services to small bioscience businesses, filling a critical gap in Oregon's drug development pipeline. The center secured another \$5.2 million in Oregon InC support over the next two biennia.

In 2013, OTRADI launched a 13,000 square-foot full-service bioscience incubator—Oregon's first—on Portland's South Waterfront. Shortly afterwards, it added nearly 4,000 square feet and another dozen member companies. From university-driven basic research to proof-of-concept and industry partnerships, OTRADI now provides assistance to ventures at all stages of the journey from medical discovery to market.

In 2015, OTRADI South was launched to serve the southern part of the Willamette Valley in collaboration

with the College of Pharmacy at Oregon State University in Corvallis. In 2016, OTRADI will expand east to Bend, the result of a new collaboration with Oregon State University/Cascades.

## Since its launch in 2007, OTRADI's key accomplishments include:

- /// Establishing partnerships that helped a \$12.1 million investment attract more than \$100 million in private, federal, and philanthropic funding for biotechnology commercialization efforts, a return of more than eight to one;
- /// Assisting more than 35 Oregon bioscience companies, resulting in at least 230 bioscience jobs in Oregon; and
- /// Cultivating a network of more than 150 researchers at universities throughout the state that have collectively generated \$3.5 million in licensing revenue.

More difficult to quantify is the likely significant impact on the growth of the entire bioscience cluster—including the Knight Cancer Center and the emerging bioscience corridor linking Oregon Health & Science University, Portland State University, and dozens of companies seeking to grow themselves and to strengthen their industry through collaboration.

## OTRADI

Launched in 2007

Oregon InC dollars invested since 2007:  
\$12.1 million

[www.otradi.org](http://www.otradi.org)



# Oregon Built Environment & Sustainable Technologies Center

With support from Oregon State University, Portland State University, Oregon Institute of Technology, Pacific Northwest National Lab, Portland Community College, Mt. Hood Community College, and six private-sector partner firms in architecture, agriculture, engineering, and green product development, BEST launched in 2007.

Oregon BEST secured an Oregon InC grant of \$2.4 million for leading innovation in bio-based products, green building, and clean energy in 2007.

Today, Oregon BEST identifies and connects the state's most critical sustainable economy assets, convenes diverse partners and stakeholders to launch collaborative ventures, and supports companies taking sustainable technologies to market. Oregon BEST works in 21 cleantech areas ranging from manufacturing to biofuels to energy storage—even consumer products.

**Since its launch, Oregon BEST's key accomplishments include:**

/// Making \$4.4 million in early stage investments to help 35 Oregon start-ups bring clean technologies to market—investments that helped company founders raise another \$32 million in private capital and grants and employ over 260 Oregonians.

/// Connecting over 250 interdisciplinary researchers and university faculty who have attracted more than \$142 million in research support for clean technologies to Oregon.

/// Securing grants in 2013, 2014, and 2015 from the US Small Business Administration to help small businesses in Oregon pursue non-dilutive SBIR and STTR grant and contract funding from federal agencies.

Oregon has long maintained an enviable record in environmental stewardship and sustainability. BEST has become an important asset in helping leaders not just adopt sustainable policies and practices, but also build entire companies, industries, and ecosystems around them—putting innovation around sustainability at the center of economic prosperity across the state.



## Oregon BEST

Launched in 2007

Oregon InC dollars invested since 2007: \$14.7 million

[www.oregonbest.org](http://www.oregonbest.org)





## Oregon InC's Industry Initiatives

During its first decade, Oregon InC invested in seven initiatives to support growth and innovation in key (traditional and emerging) industries.

/// A series of investments in the food and seafood industries helped introduce new processing and tracking technologies, train workers, and enhance business development activities in these critical sectors.

/// Early and ongoing investments in wave energy (OWET), electric vehicles and testing systems (Drive Oregon), and unmanned aerial systems (SOAR Oregon) helped Oregon lead in the development of these new alternative energy and transportation sectors.

/// An investment in the creative sector (Oregon Storyboard) piloted a new kind of accelerator helping launch creative, high-tech companies.

/// Smaller investments supported manufacturing innovation activities within the Oregon University System and Portland State University.

The projects varied in type, scale, and impact but, collectively, helped Oregon InC and its partners learn how to promote and support innovation in ways other than institution-based research, development, and commercialization.

## SOAR Oregon

SOAR Oregon is an initiative created in 2013 to foster growth in the rapidly evolving Unmanned Aerial Systems (UAS) industry in Oregon. UAS brings many emerging industry sectors together such as aviation, advanced manufacturing, high-tech, software development, education and more.

/// SOAR partners with Oregon's three unique FAA-approved test ranges in Tillamook, Warm Springs and Pendleton for UAS deployment. Oregon's ranges each host unique expertise in UAS testing.

/// Oregon's diverse testing conditions, competitive business climate and innovative technology economy make it an ideal location for UAS testing.

/// Pioneering UAS companies like Garmin, FLIR Systems, Insitu and NW UAV already anchor the state's UAS industry which includes over 100 UAS firms and related manufacturing, providing a rich environment for new inventors and entrepreneurs to bring their products to market.

## OWET

The Oregon Wave Energy Trust (OWET) is building the foundation for a new kind of alternative energy—one Oregon is uniquely positioned to deliver. OWET:

/// Built a regulatory roadmap for the industry that makes the complex state and federal permitting process more transparent and helps companies navigate it efficiently;

/// Helped raise funds to secure the nation's first grid-connected test site and one of two Department of Energy Research Centers;

/// Convened partners to develop and implement the Territorial Sea Plan, which recognizes the needs of the emerging industry; and

/// Supported world-leader Columbia Power Technologies' research and development aimed at enhancing the survivability of remote control systems and devices.

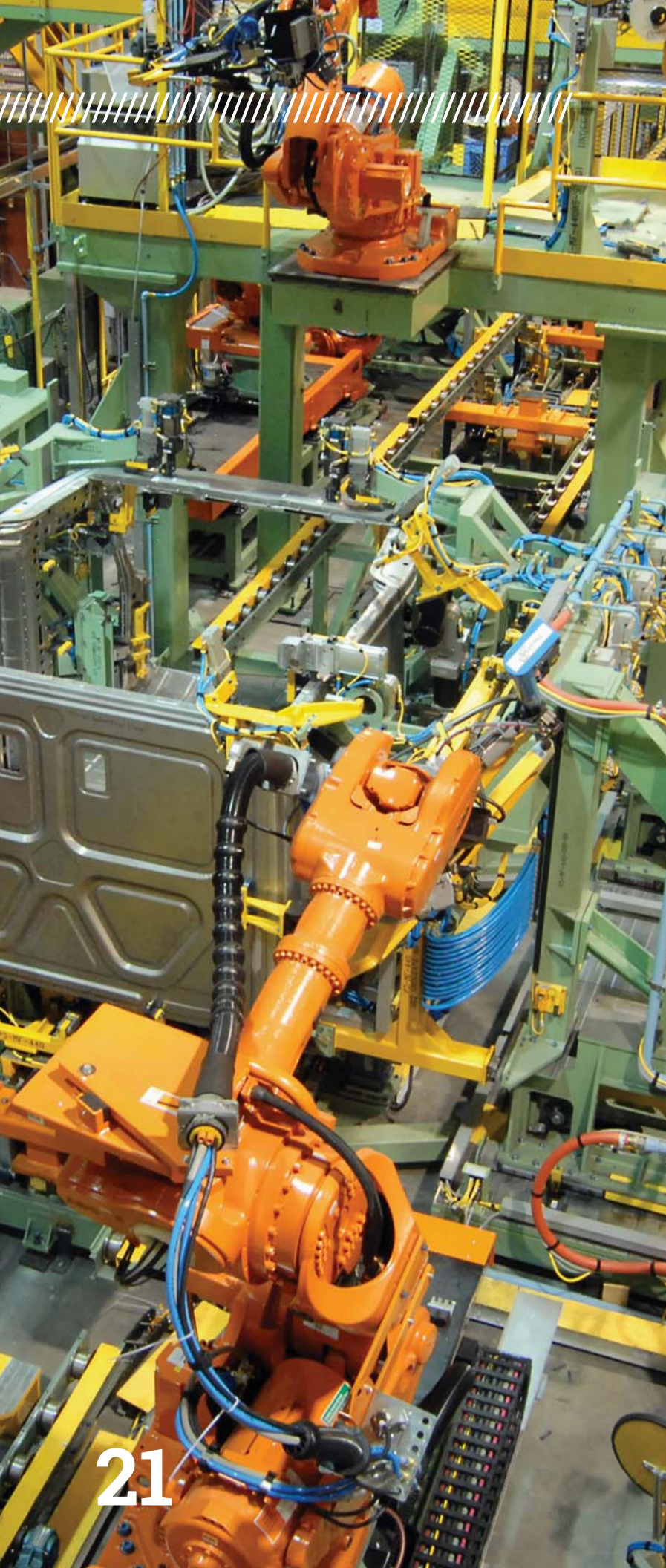
OWET has won the support of Oregon InC many times over as it has taken on the challenge of establishing a new alternative energy industry with a strong Oregon natural resource—our coastline.

## Drive Oregon

Drive Oregon, an Oregon InC industry initiative since 2011, has established Oregon as a living laboratory for electric transportation—from cars to forklifts to bicycles. It has worked on policy, executing a state-level Memorandum of Understanding with the Governor's Office and the Oregon Department of Transportation in support of electric vehicle deployment and the launch of the 110-member Energize Oregon Coalition. And it has assisted companies working on game-changing innovations in Oregon including:

/// Arcimoto's SRK, an "everyday electric" two-seat, three-wheeled delivery vehicle one-third the size of a pickup truck, able to travel 70 miles on a single charge, and park nose-in on the street; and

/// Mobile technologies for drivers in Jaguar Land Rover's (JLR's) new Pearl District transportation lab and incubator—the only product development facility outside the U.K.—to enable better, safer transport in all conditions through human-centered technology design.



**Championing Innovation**

When Oregon InC was established, the role the state would play in advancing an innovation agenda was not predetermined. Neither was it obvious. Founding members built relationships with leading innovators in the state and mapped Oregon's innovation assets—technologies, target industries, research facilities, and so on. They also participated in conferences and meetings about economic development and technology all over the state. These activities— independent of Oregon InC's strategy or investment portfolio—proved critical in building an innovation-friendly culture across Oregon institutions, industry sectors, and communities.

Oregon InC effectively anchored a statewide conversation about innovation, helping many Oregonians understand why it was essential to the state's prosperity. It also connected innovators doing similar or complementary work in different fields and built bridges between academia and industry. Finally, it brought capital (and capital access) into the conversation in a systemic way aimed at long-term capacity building rather than a single deal.

As innovation becomes more broadly owned, and the tools of innovation become more accessible to more (and more diverse) people, companies, and communities, the innovation conversation will become even more important over the next decade.



**Allocated Investments 2015-17**

Oregon InC is managing a total budget of \$17,908,981 for the 2015-17 biennium. This is a transition period for the council. As such, there are no new proposed recipients of Oregon InC funding, and the Council's current portfolio has not included additional resources for Oregon Storyboard, which was a pilot industry initiative funded in the 2013-15 biennium, or the newly proposed Smart Labs initiative.

Since all of these investments support ongoing work, Oregon InC has negotiated workplans that advance current priorities and meet existing performance targets, including creating and retaining jobs, securing follow-on federal or private funding, and driving revenue growth among supported companies.

**OREGON INC OVERSEES ALL THREE SIGNATURE RESEARCH CENTERS, WHICH RECEIVED FUNDING AS FOLLOWS:**



**OREGON INC ALSO OVERSEES SUPPORT FOR THREE INDUSTRY INITIATIVES AS FOLLOWS:**





# Changing Context of Innovation













**In 2005, the Oregon economy had just emerged from a significant recession—though not on the scale of the great recession of 2008 that was to come.**

State leaders recognized the need for a significant and sustained effort to build an innovation economy rooted in the state's core industries and natural resources, while also encouraging emerging industries and making better use of

economic assets in industry, higher education, and the workforce.

Led by Oregon InC, a strategic innovation agenda took shape. It emphasized collecting data and benchmarking Oregon's innovation infrastructure, commercializing industry research, adopting a cluster approach to economic development, and building entrepreneurial assets—including venture-capital and industry-expert networks.

## Oregon Economic Indicators at a Glance

		2004	2014	% CHANGE OVER 10 YEARS	
<b>POPULATION</b>		3,569,463	3,970,239	11.2%	
<b>STATE GDP (S MILLIONS)</b>		\$142,516	\$212,807	49.3%*	
<b>PER CAPITA GDP</b>		\$42,262	\$50,568**	19.7%	
<b>TOTAL FULL-TIME &amp; PART-TIME EMPLOYMENT</b>		2,138,888	2,310,320	8.0%	
<b>AVERAGE EARNINGS PER JOB</b>		\$40,789	\$50,766	24.5%	

\* In 2014, Oregon reported the 6th fastest growth in GDP. Those with higher rates were all state dependent on natural resource extraction (oil and natural gas, mining, etc.).

\*\* In 2004, Oregon ranked 33rd among the 50 states for per capita GDP; in 2014, Oregon ranked 19th.

All data from regional economic accounts by US Dept. of Commerce Bureau of Economic Analysis - [http://www.bea.gov/iTable/index\\_regional.cfm](http://www.bea.gov/iTable/index_regional.cfm) (accessed December 11, 2015).

## Trends in Innovation: Then & Now

	2005	2015
<b>BUSINESS TRENDS</b>	Globalization/ Diversity programs/ No business is too big to fail	→ Digitalization/Diversity and cultural competency at all levels/No business is too small to succeed
<b>COMPUTER PLATFORMS</b>	Servers, centralized computing, and databases housed within the firm	→ Datastorage, information, and technology provided as cloud-based services by many companies
<b>DATA</b>	Data-driven analysis	→ Data science and predictive analytics
<b>HANDHELD TECH</b>	Flip phones, iPods, personal digital assistants	→ Smartphones and wearables—enterprise-quality technology in the hands (and on the bodies) of anyone and everyone
<b>MANUFACTURING</b>	Big business and automation	→ Manufacturing redefined by "Makers" with modeling software and 3-D printers in community spaces
<b>SOCIAL MEDIA</b>	Social what? (Social media used by only 7% of all American adults)	→ "Text-neck" on the rise—because 65% of American adults use social media regularly (Facebook, YouTube, Twitter top the charts)
<b>SOURCES OF INNOVATION</b>	Traditional research and development, bolstered by open source intellectual property and the emergence of platforms	→ Ecosystems—actors from public, private, and nonprofit sectors competing, coordinating, and collaborating (sometimes simultaneously)
<b>SOURCES OF INNOVATION FUNDING</b>	Large financial institutions, professionally-managed funds	→ State and local government, angel investors, "the crowd"
<b>SUSTAINABILITY</b>	A standalone "industry sector"	→ A goal and set of practices represented in nearly every major industry
<b>TECHNOLOGY IN OREGON</b>	The "Silicon Forest," semiconductor manufacturing	→ Semiconductor manufacturing plus software, social platforms, mobile technologies, gaming, and other app development

Sources:

<http://www.slideshare.net/RomainEyherabide1/digital-innovation-leadership-study-kienbaum-france-2015>

<http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/>

# Big Changes

**The technology-based economic development approach crafted by Oregon InC 1.0 was well-suited to Oregon's 2005 economy. A decade later, much has changed.**

## Commercializing University Research

In 2005, the state's technology transfer capacity was limited. There were fewer university-based technology transfer offices than there are today, and because the universities were governed by a single Higher Education Board and managed through the Oregon University System (OUS), it was not always clear who was responsible for the development and commercialization of research across all of Oregon's institutions. Today, as a result of a gradual devolution of authority culminating with the signing of Senate Bill 80 and the dissolution of OUS, Oregon supports a more distributed and accessible approach to commercializing university research.

### **Oregon Health & Science University (OHSU)**

At Oregon Health & Science University, the Office of Technology Transfer and Business Development supports research, technology commercialization, industry collaboration, entrepreneurship, and start-up development to move university research and innovation into the marketplace.

### **The University of Oregon (UO)**

Innovation Partnership Services helps existing companies and aspiring entrepreneurs acquire and manage UO intellectual property and build companies and business networks.

### **Portland State University (PSU)**

The office of Innovation & Intellectual Property (IIP) at PSU has served as the technology transfer office since 2008 and provides support for any intellectual property questions or concerns that arise around research contracts, relationships with external organizations, and commercialization resources.

### **Oregon State University (OSU)**

The Office for Commercialization and Corporate Development at Oregon State University leads industry-sponsored research efforts and the commercialization of innovation by evaluating markets, developing an intellectual property protection strategy, and executing research, confidentiality, materials transfer, licensing, and other industry agreements.

### **Oregon Institute of Technology (Oregon Tech)**

The Office of Innovation & Technology Transfer at Oregon Tech facilitates the development, dissemination, protection, transfer, licensing, and commercialization of university technology, inventions, and creations.

In 2005, there was also limited alignment between university research and industry needs. This was one impetus for establishing signature research centers that would help commercialize new technologies across industry sectors. Today:

/// ONAMI, OTRADI, and Oregon BEST have attracted research dollars many times the value of their seed investments and earned national recognition. Collectively, they have assisted some 300 companies from a range of industry sectors make use of university-based research and facilities in Oregon.

/// State agencies with responsibility for innovation, entrepreneurship, economic development, workforce, and education have experimented with a range of cluster and sector strategies designed to better align growth industries with the resources, talent, and technologies they need to flourish. In 2005, there were only a small handful of business incubators in the state. Today, Oregon is home to more than 60 service providers for entrepreneurs, start-ups, and small businesses.

/// New industry associations representing emerging sectors—such as solar, wind, and wave energy—have sprung up during the past decade. More established ones have changed with the times. The Software Association of Oregon, for example, became the Technology Association of Oregon and is now working in sectors ranging from creative services to transportation to robotics and the Internet of Things. Informal networks in dozens of these sectors and subsectors are using technology platforms

like Meet-Up, coworking spaces like CentriOffice (Portland), non-urban or university-based accelerator programs like the Sustainable Valley Technology Group (Medford), and private-sector initiatives like InnovateOregon (statewide) to convene and collaborate.

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**“Today, no one government agency or private company can support the entire innovation ecosystem from discovery to commercialization. The best in class (countries, states, private industry) are working together to align priorities, policy, and regulation and leverage multiple investment sources so that the innovation ecosystem delivers economic advantage to their country, state, or industry.”**

**— INNOVATION COUNCIL MEMBER**

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## Oregon's Research Universities: An Emerging Willamette Valley Innovation Corridor

Oregon Health & Science University, Oregon State University, the University of Oregon, and Portland State University have dramatically enhanced their contributions to Oregon's innovation economy over the past decade. Since 2000, research supported by these institutions has more than doubled to \$700 million annually, with three of every four dollars representing new federal investments.

The universities have developed complementary clusters of excellence and attracted faculty and researchers at the forefront of their areas of expertise—researchers developing life-saving medical technologies, enhancing Oregon's agriculture and forestry industries, providing vital information and technical services to rural and coastal communities, and shaping the future of urban environments. Together with technology transfer offices, Signature Research Centers, and community partners, the researchers also play important roles in cultivating talent and incubating new business ventures.

By balancing basic and applied research and collaborating with each other and with state and local leaders from across sectors, these institutions

both strengthen Oregon's competitive position in the global economy and address the real needs of Oregon people, firms, and communities.

**“The days of the traditional R&D lab are over. Innovation can come from anywhere. It's unpredictable. We can't pick winners; we have to create the environment for many innovators to thrive instead.”**

**— INNOVATION COUNCIL MEMBER**

### Oregon Research University Clusters of Excellence

Oregon Health & Science University (OHSU)



**NEUROSCIENCE**



**CANCER**



**INFECTIOUS DISEASE AND IMMUNOLOGY**

Oregon State University (OSU)



**ALTERNATIVE ENERGY**



**SEMICONDUCTOR AND CELLULOSIC MATERIALS**



**AUTONOMOUS SYSTEMS**

Portland State University (PSU)



**SUSTAINABILITY**



**HEALTH SCIENCE AND TRAINING**



**COMPUTER SCIENCE AND ENGINEERING**

University of Oregon (UO)



**MATERIALS SCIENCE**



**EDUCATION RESEARCH**



**LIFE SCIENCES**



# Availability of Capital to Support Business Development & Growth

**In 2005, the venture capital community was relatively small and angel investors virtually unknown to new entrepreneurs. Information about money—start-up or growth capital—was largely held within the walls of established financial institutions or professionally-managed funds. This landscape has been upended and will continue to evolve.**

## Prizes & Competitions



The emergence of dozens of incubator, accelerator, and business support programs in the state, together with coworking spaces and social business programs, have catalyzed a host of start-up competitions that typically award cash prizes (grants or investment capital) to founders or aspiring founders of early stage companies. This trend is global— with start-up competitions happening somewhere in the world every day—and has become ubiquitous in Oregon as well. Such competitions have inspired new investors to put their money to work growing new companies in Oregon.

## Traditional Capital



Traditional sources of capital continue to play critical roles in Oregon's capital landscape —small business loans, tax credit programs, and community-based capital access programs among them—as documented

in the biennial Oregon Capital Scan report. However, they tend to support more established companies rather than start-ups, and structural changes in their programs—temporary measures resulting from the 2008 recession excepted—have been less common than those in other areas of business finance over the past decade.

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**“Technology has fundamentally changed every sector...innovation is now faster, easier, and more profuse than a decade ago. It is a more important element of success than it was in 2006.”**

**- INNOVATION COUNCIL MEMBER**

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## Angel & Venture Capital



In the past few years, the availability of angel investment has expanded significantly. State and local business development initiatives—such as the Oregon Growth Board (established in 2012) and the Portland Seed Fund (launched in 2011)— have aided in this drastic increase in Oregon. The 2014 Oregon Capital Scan reported in 2012 and 2013 that 94 angel investments were made across Oregon totaling \$52M. The same time period saw 53 Oregon venture capital investments totaling \$329M.

Today, Oregon has a very limited number of resident venture firms, and the majority of venture-level investment rounds come from out of state. However, in recent years, many new Oregon funds have come online, emerging out of angel groups around the state. The State of Oregon supports the growth of resident capital through investments made by the Oregon Growth Board. Although venture capital has ebbed and flowed in recent years—and certain stages remain an area of need—new firms and funds have replaced old ones, and capital has found its way beyond the Portland metro area to major deals in Corvallis, Eugene, and Medford. The emergence of stronger entrepreneurship ecosystems has made information about venture capital and opportunities to meet investors accessible to more (and more diverse) entrepreneurs.

**The 2015 HALO Report™ highlighted trends in angel investing across the country.**

/// Seed stage valuations have risen steadily over the last five years to an all-time (median) high of \$3.95 million, a 30% increase over 2014.

/// Round sizes in deals with only angel investors have grown from \$800,000 in 2014 to over \$1 million in 2015.

/// All regions across the U.S. have seen increases in round size in the last six quarters, with the largest increases in round sizes occurring in the Great Plains (increasing from \$200,000 to \$1.1 million), Mid-Atlantic (increasing from \$300,000 to \$1.5 million), and the Northwest (increasing from \$300,000 to \$1.5 million).

## Crowdfunding



Crowdfunding may be the most significant disrupter in the capital access landscape—in Oregon, in the U.S., and all over the world.

The basic idea behind crowdfunding is combining many smaller amounts of capital into a larger whole that can support the same kinds of ventures that fewer larger contributions have typically supported. Crowdfunding is not new, but social technologies have enabled it at an unprecedented scale, prompting new applications and models for this very old “many hands” tradition. Platform-based crowdfunding first emerged after the launch of ArtistShare in 2003 and gained traction after the launch of IndieGoGo (2008) and Kickstarter (2009).

For entrepreneurs and growing businesses, crowdfunding is of two primary types: donation-based crowdfunding and securities crowdfunding.

### Donation-based crowdfunding

Donation-based crowdfunding typically employs a technology platform like Kickstarter or Indiegogo that enables entrepreneurs (and social innovators or other creative professionals) to raise capital by asking “the crowd” to share in the cost of a venture. Although contributors (“backers,” in Kickstarter vernacular) may receive incentives, such as stickers, t-shirts, or a prototype of a new product, they are not investors in the company to which they gift their capital.

### Securities crowdfunding

Securities crowdfunding is the second type. It enables people (or companies) to invest in ventures—again, typically using a technology platform—by purchasing securities (debt, equity, or some combination). While open to accredited investors for some time, it is now also open to unaccredited investors in over half the states in the U.S. and became legal in Oregon in January 2015. Oregon’s law enables any Oregonian

to invest in Oregon companies no matter their income. To date, HatchOregon and Chroma.fund have built platforms that enable this kind of capital raise here in Oregon.

Crowdfunding on social technology platforms is new, but shows promise: At the time it was funded in 2014, Portland-based Coolest Cooler’s \$13 million raise was Kickstarter’s largest ever. And in late 2015, the first Oregon company to complete a raise using Oregon’s new securities crowdfunding rules did so—Red Wagon Creamery in Eugene raised \$120,000 from nearly 150 local investors.

Crowdfunding will continue to evolve as the JOBS Act and new federal rules drafted by the Securities and Exchange Commission this year go into effect in 2016.

### CROWDFUNDING LEVELS THROUGHOUT OREGON

Data from Oregon Capital Scan, June 2014

#### GREATER PORTLAND

VENTURE CAPITAL	\$299.4M
ANGEL & SEED	\$47.2M
SBIR/STTR	\$16.0M
KICKSTARTER	\$4.9M

#### NORTHWEST

VENTURE CAPITAL	\$0M
ANGEL & SEED	\$3.4M
SBIR/STTR	\$6.7M
KICKSTARTER	\$923K

#### CENTRAL

VENTURE CAPITAL	\$0M
ANGEL & SEED	\$1.2M
SBIR/STTR	\$177K
KICKSTARTER	\$765K

#### EASTERN

VENTURE CAPITAL	\$0M
ANGEL & SEED	\$0M
SBIR/STTR	\$0M
KICKSTARTER	\$4K

#### SOUTHWEST

VENTURE CAPITAL	\$29.4M
ANGEL & SEED	\$320K
SBIR/STTR	\$823K
KICKSTARTER	\$366K



Significant capital access challenges remain in Oregon—especially among small businesses owned by women and people of color and those headquartered in rural communities. But in 2015, Oregon entrepreneurs have many more options for financing than a decade ago.

“The age of the central, monolithic entity where people go for services is in disruption. Technology advancements force us to empower the individual rather than the institution. Every person will be challenged to add personal value to society rather than consolidating it with a single entity.”

— INNOVATION COUNCIL MEMBER

### Portland State University’s Accelerator Program

10 YEARS AGO  
ACCELERATOR IN  
ITS INFANCY

TODAY



TOP HONORS AT THE  
2015 NATIONAL  
BUSINESS INCUBATION  
ASSOCIATION’S  
ANNUAL  
INTERNATIONAL  
BUSINESS  
INCUBATOR  
CONFERENCE

THE DINAH ADKINS  
INCUBATOR OF  
THE YEAR AWARD  
RECOGNIZED PSU’S  
SUCCESS IN THE  
TECHNOLOGY SECTOR

# Changes in Oregon Industry

## Agriculture

In 2005, agriculture was celebrated as a key traded sector and food products as value-added manufacturing. While agriculture remains a bedrock Oregon industry, massive changes in the food and food service sectors have revealed new sources of value and alternative paths to market. The explosion of farmers markets, food carts, farm-to-table and farm-to-school establishments, hops and breweries, the local, organic, and artisan movements, and new growing technologies have all changed the way Oregonians produce, buy, and consume food, creating new opportunities throughout the agriculture and food-related industries.

## Outdoor Sportswear Industry

In 2005, Oregon leaders lamented the small number (two) of Fortune 500 firms headquartered in Oregon—Precision CastParts and Nike, the largest by some distance. In 2015, Lithia Motors in Medford also cracked the top 500. Six Oregon companies are now listed on the Fortune 1000, including Nike and Columbia Sportswear. Today, these two companies anchor a thriving (global) outdoor sportswear industry that has attracted Keen, Icebreaker, and ON to Oregon, and encouraged local start-ups like NW Alpine.

## Technology

The technology industry has also played a critical role in Oregon's economy for many decades. Ten years ago, "Oregon IT" functioned as a kind of shorthand for Oregon's semiconductor manufacturing industry. The I-5 corridor in Portland and southwest Washington was widely recognized by the moniker "Silicon Forest." A decade later, software, social platforms, mobile technologies, gaming, and other digital technologies have also emerged as powerful economic drivers in the state's growing technology industry.

## Sustainability

Sustainability has long been an area of focus for Oregon and Oregon business. A decade ago, state leaders approached sustainability as a standalone key industry sector. Today, sustainability lies at the core of many of Oregon's key sectors.

## Manufacturing

Finally, manufacturing too is undergoing structural changes. At one end, automation and robotics are both dramatically altering the nature of the industry—what it looks like, who does it, and how—for larger companies like Boeing, Intel, and Nike. At the same time, new communities of "makers"

—and community spaces like ADX—are bringing traditional craftsmanship to a new generation of small business owners and finding markets for Oregon-branded products near and far. The manufacturing industry is vitally important to Oregon; it comprised nearly 40% of state GDP in 2013, making Oregon the number one state in manufacturing output (more than ten percentage points ahead of Indiana, its closest competitor), and its employment base grew five percent between 2009 and 2013. Innovations in smart goods, 3-D printing, additive or on-time manufacturing, and efficiencies in supply chains and distribution look only to increase Oregon's manufacturing advantage.

**As a result of these and many other changes, Oregon's target industries will undergo a review process in the coming year, a process in which Oregon InC members and partners will play a key role.**

## Target Industry Groups

Business Oregon updated its current Key Industry Groups with new Target Industry Groups in early 2016. The proposed Target Industry Groups include:

- /// Advanced Manufacturing – ranging from upstream metals and machinery, aerospace and defense to biomedical;
- /// Outdoor Gear and Apparel – including apparel and footwear and outdoor gear, anchored by Nike and Columbia Sportswear;
- /// Forestry and Wood Products – consisting of value-added products manufactured around the state;
- /// High Technology – including semiconductors and electronics as well as software and information technology led by Intel;
- /// Food and Beverages – an important economic and cultural driver for the state of Oregon; and
- /// Business Services – ranging from professional and technical services to company management and customer support.

## Changes Across Industries

It would be difficult to exaggerate the massive changes—technologically and otherwise—Oregon industries have experienced in the past decade. State leaders, Oregon InC members and advisors, and Business Oregon staff have identified six areas that promise even greater change going forward and are particularly relevant to Oregon.

As much as these trends emphasize technology's role in enabling anything from anywhere, there is

### THE INTERNET OF THINGS (IoT)



A decade ago, the smart cities movement was just getting started and "big data" was not a phrase most people in business knew. Today, the combination of sensors, GIS/GPS and mapping technologies, and algorithms makes measuring almost anything, almost anywhere, possible. Experiments are ongoing throughout Oregon that promise data-driven decision-making in sectors ranging from transportation to health to agricultural production. "Living Laboratory" IoT experiments, or those tested in the field, are connecting public and private sectors, nonprofit organizations, and citizens in collective efforts to redesign complex systems and improve our communities in ways that benefit everyone.

### GLOBAL CONNECTIONS



Enabled by technology, people can connect with people more easily than ever before. Many of today's start-ups can become instantly global and access target markets anywhere in the world. This enables new ways of organizing and new kinds of business models— including those common in the sharing economy where individuals make their assets available to others in exchange for a fee, reputational currency, or both. Such connectedness also forces a level of transparency that will make more urgent the pressure to address government policies and regulatory regimes that govern the finance, agriculture, energy, and other key sectors—all issues that transcend political jurisdictions.

also a growing body of evidence attesting to the importance of communities—as aggregators of talent, resources, and entrepreneurial assets (including culture) in taking advantage of these trends. That's why the ecosystem approach to economic development, together with these key trends, will inform Oregon InC's emerging strategic direction in 2016 and beyond.

### MOBILE TECHNOLOGIES



For perspective, in 2005, the smart phone had not yet been invented. Today, a smart phone puts access to enterprise quality technologies (apps, GPS, streaming radio and video, international Skype calls, and social media) in the hands of any entrepreneur, anywhere, for a small fraction of the cost of the proprietary corporate tools of a decade ago. This changes everything about what it takes to launch and manage a business—from anywhere in the world.

### THE CLOUD



Ubiquitous access to data storage and management has lowered the barriers to entry for new companies to enter a market. Much of the expense of starting a new business in 2005 was tied to purchasing equipment for basic business infrastructure like servers, big database software platforms, and the engineers to run them. Today, scaling a business is much faster, streamlined, and stable, too, as cloud services now function to power business in a myriad of ways: from websites to banking and customer relationships to files and data.

### 3-D PRINTING



The development of new printable materials (and printers able to use a wide range of them) has shifted the focus of 3-D printing from prototyping to manufacturing itself. From prosthetics designed specifically for their wearers to parts used in larger scale manufacturing to cars and even houses, 3-D printing is changing what is possible in manufacturing at any scale.

### BLURRING BOUNDARIES BETWEEN SECTORS (AND FIRMS)



Prompted by the evolution and application of new nano- and other technologies, we see both new materials and technology processes adopted by a wide range of industries and applied in different ways. The cultivation of algae as a potential fuel, the application of nanomaterials in new drug delivery systems, and biobased building materials are examples of technological breakthroughs with relevance to many industries—all supported by Oregon SRC experts.

# Changes in Oregon

Oregon itself is also changing.

This year, Oregon's population reached four million, placing the state into the category of mid-sized, rather than small states. Our new peer states, from a population perspective, are Kentucky, Louisiana, and South Carolina, rather than Arkansas, Connecticut, and Iowa.

Perhaps surprisingly, rural Oregon experienced a net in-migration just as strong (controlling for population) as urban Portland. The "Timber Belt" has vastly outpaced its Rust and Corn belt counterparts in attracting new residents even after having experienced similar declines in employment and population in the prior decades. Moreover, these new residents tend to be wealthier and older than current residents, creating new opportunities for wide range of businesses.

Oregon's population is slightly more educated (in both rural and urban areas) than the national average—one-third of adults are college graduates—and becoming more diverse—between 2000 and 2010, the number of Latinos in the state increased by some 64 percent. Although the state remains one of the least ethnically diverse nationally, the percentage of non-white residents is growing 20 percent faster than the U.S. average.

The changes in Oregon industry are creating new demands for skills—especially those in science,

technology, engineering, arts, and math (STEAM)—and placing a higher premium on talent as a key asset in the innovation economy. At the same time, nearly 40 percent of the workforce is "contingent"—working under contract, freelancing, self-employed, or otherwise not in a traditional job with benefits—challenging traditional employment relationships and disrupting potential career paths. This trend also makes current job measurement methods increasingly incomplete.

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**"Today, value is created between people in ways that cannot be truly described and captured by just financial metrics—especially as data plays an increasingly strong proxy for money."**

**- INNOVATION COUNCIL MEMBER**

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# New Directions for Innovation Policy

**Innovation is a relatively new area for policymakers across the globe. It has drawn from government-supported research and development efforts, economic development and competitiveness strategies, and education and technology policy.**

A decade ago, much innovation policy targeted university research and commercialization efforts—in particular, support for researchers and companies with the potential to quickly grow and scale new products, services, and technologies. Over time, cluster development, entrepreneurship, talent development, tax policy, and incentives for collaboration, market incentives—even procurement—have all played a role in innovation policy at different times and in different contexts.

Today, innovation policy is shifting away from institutions and toward networks, and is beginning to account for the importance of knowledge capital and intangible assets in innovation itself. Policy makers at federal, state, and regional or local levels are also getting better at benchmarking themselves against relevant counterparts and not just Silicon Valley. The World Bank's Innovation Policy Platform is an example of this.

But at a global level, we've only just begun to accumulate evidence of the effectiveness of innovation policy. NESTA, the United Kingdom's innovation agency, recently completed a project documenting the effectiveness of some 20 innovation policy

interventions as part of its Compendium of Evidence on the Effectiveness of Innovation Policy project.

These and other initiatives offer innovation policymakers a wealth of insight about not just what works, but what works at what scale, in what context, and why. This is intelligence that did not exist a decade ago and is a tremendous asset for new Oregon InC members to use in shaping next generation innovation policy in Oregon.

Finally, just as research and development is moving out of traditional labs, so too is prototyping and experimentation. Technology for the real world can be made better by testing it in the real world.

**We see such community-based experimentation all over Oregon:**

/// Honeycomb Corp (Wilsonville) uses drones, coupled with data analytics, to track and document crop progression and yields. The systems monitor weather, pests, and soil condition and comprise the backbone of precision agriculture—a movement aimed at using technology to make agriculture more efficient and sustainable.

/// Remote sensors—on highways and bridges, on mobile phones, and on (or in) our bodies have ushered in new processes for solving complex problems in targeted ways. Oregon's Bike Barometer program has used sensors to monitor bicycle traffic on the Hawthorne Bridge since August 2012, registering nearly six million trips to date (data is accessible to the public at <http://portland-hawthorne-bridge.visio-tools.com/>). This is a small, inexpensive experiment with significant potential consequences for infrastructure planning.

/// A myriad of mobile phone applications are helping people track their transportation options, fitness, finances, skills, time, neighborhood noise, pollution levels, and health. Oregon Health & Science University is building the capacity for personalized medicine—from diet and everyday care to diagnostics and drug delivery systems that target specific diseases in specific people.

/// Oregon innovators are also bringing their skills, experiences, and methods into the classroom—engaging young people in not just learning about community challenges, but solving them. In rural Yamhill County, high school students worked with Innovate Oregon to design trusses, learning trigonometry, 3-D modeling, and collaboration, and working directly with local business leaders in the process. As a consequence, plans for the state's first Inspiration, Innovation and Invention (I3) Center—a combined digital learning center, machine shop, and makerspace—are underway.

**Oregonians are collaborating to solve real problems in novel ways that benefit communities, at scale. This is Oregon innovation at its best.**

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**“Growth in information access and network reach has dramatically reduced the role played by traditional gatekeepers, creating an opportunity for more voices at the table, for innovation to come from a broader array of sources, and for faster disruption of traditional business models.”**

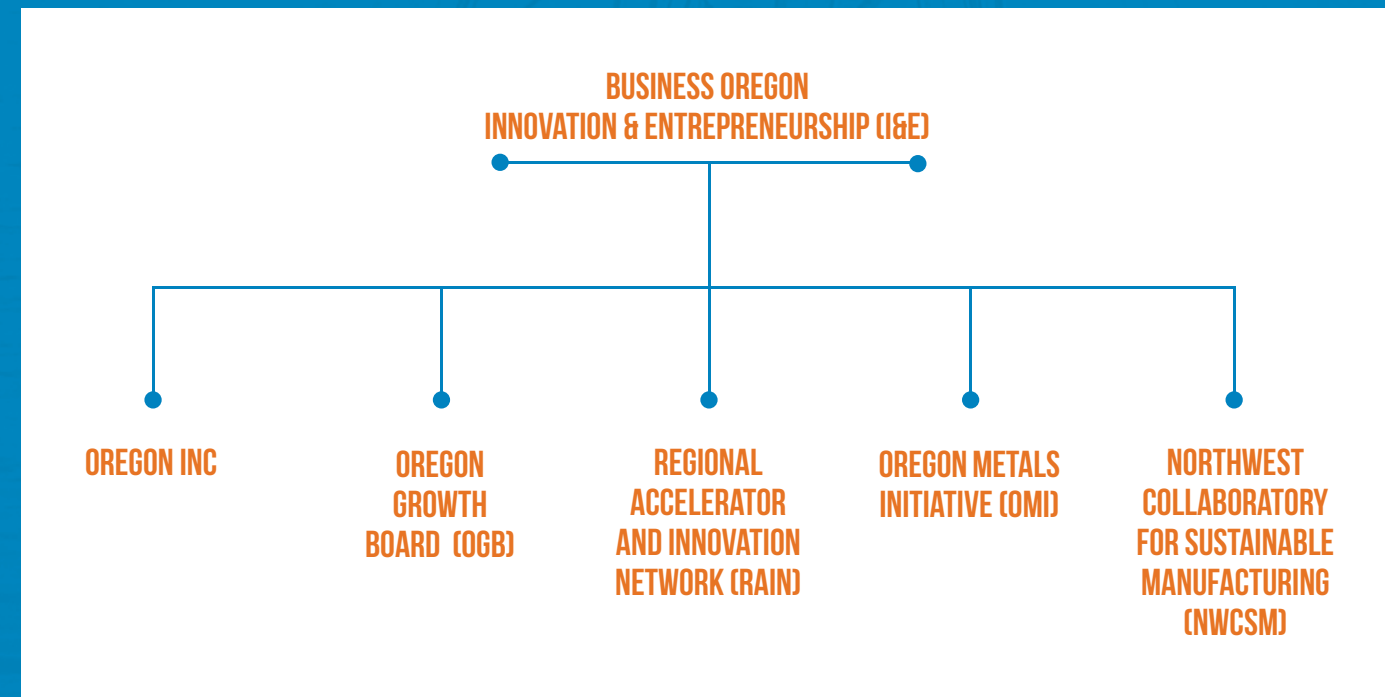
**- INNOVATION COUNCIL MEMBER**

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## Oregon InC, Business Oregon & the State's Own Innovation Ecosystem

The Business Oregon Innovation & Entrepreneurship (I&E) division was launched in April 2015 with the hiring of the first Assistant Director of I&E, Heather Stafford. At the same time, Business Oregon also became the first state agency in the country to bring on a volunteer Entrepreneur-in-Residence, Kanth Gopalpur, to help build the new I&E division.

The I&E division works to build a statewide environment that effectively cultivates the equitable creation, growth, and continued success of Oregon-grown companies, and currently administers the following programs:



### INNOVATION

- /// University technology transfer
- /// SBIR/STTR federal research grant support
- /// Prototype/invention support
- /// STEM/CTE support

### ENTREPRENEURSHIP

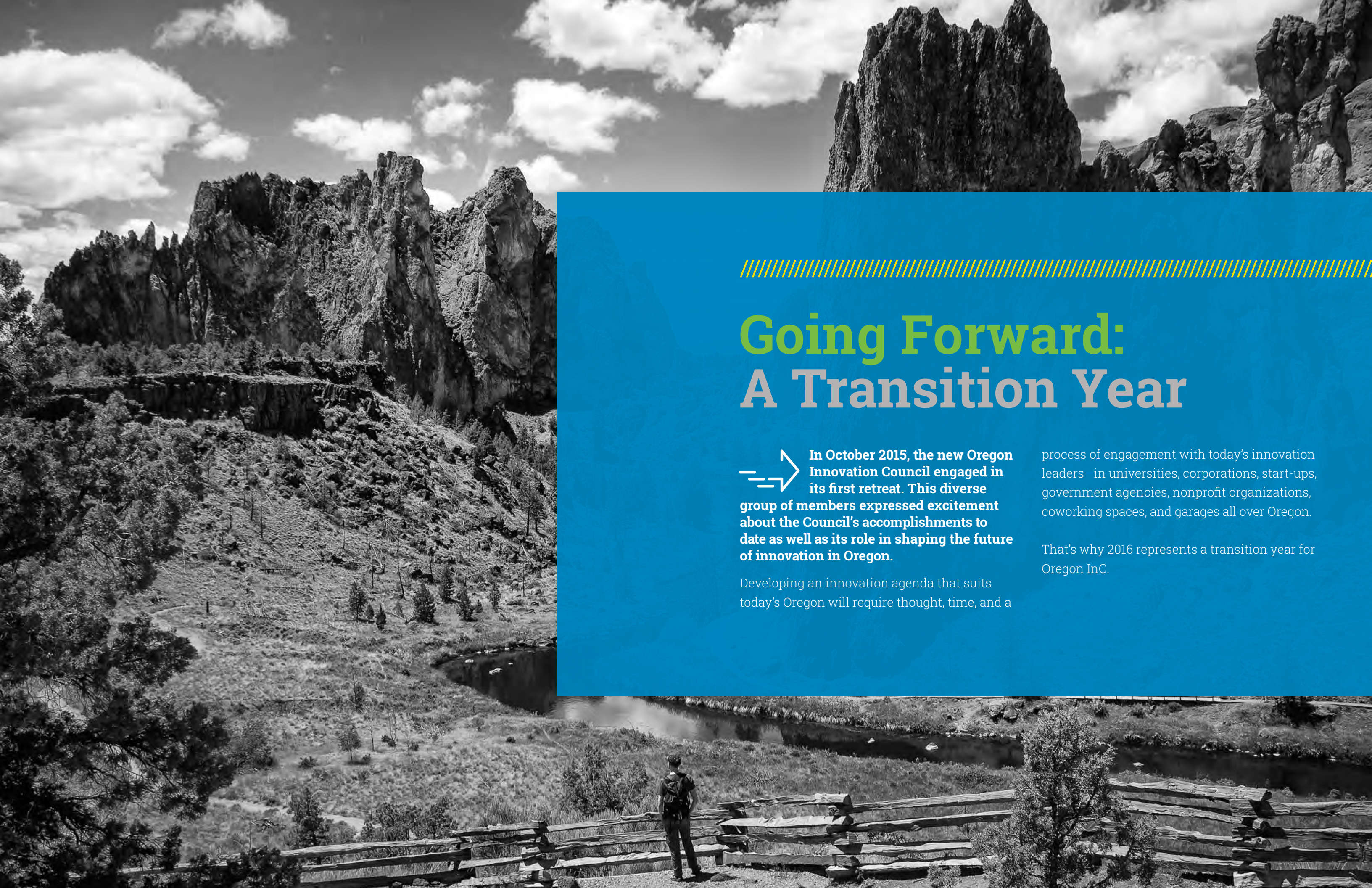
- Strategic support to the state's:
- /// Incubators
  - /// Accelerators
  - /// Coworking spaces
  - /// Small Business Development Centers (SBDCs)
  - /// Other technical service providers

## The Division's Core Strategic Areas

### CAPITAL

- /// Resources to grow a pipeline of entrepreneurial capital in Oregon, including management of the Oregon Growth Board and production of the Oregon Capital Scan every biennium, to best understand the opportunities and gaps to focus on.





# Going Forward: A Transition Year



**In October 2015, the new Oregon Innovation Council engaged in its first retreat. This diverse group of members expressed excitement about the Council's accomplishments to date as well as its role in shaping the future of innovation in Oregon.**

Developing an innovation agenda that suits today's Oregon will require thought, time, and a

process of engagement with today's innovation leaders—in universities, corporations, start-ups, government agencies, nonprofit organizations, coworking spaces, and garages all over Oregon.

That's why 2016 represents a transition year for Oregon InC.

In the 2015 state legislative session, House Bill 2288 established the following membership structure for Oregon InC:

#### OREGON INC MEMBERSHIP (15 VOTING MEMBERS)

- /// Chair
- /// Seven entrepreneurs/investors
- /// Representative from not-for-profit private higher education
- /// Representative from accredited public higher education
- /// Member of the Oregon Growth Board
- /// Private-sector member of the Oregon Talent Council
- /// Director of Business Oregon
- /// Executive Director of the Oregon Higher Education Coordinating Commission (HECC)
- /// Oregon State Treasurer

#### EX OFFICIO (NON-VOTING)

- /// State Senator (Republican)
- /// State Senator (Democrat)
- /// State House Representative (Republican)
- /// State House Representative (Democrat)
- /// Business Oregon Commission Chair

Governor-appointed members serve two-year terms and are called upon to aid Business Oregon in crafting the Oregon Innovation Plan each biennium and overseeing the Council's investments.

#### TECHNICAL ADVISORS

- /// Non-board members who actively volunteer on committees and who provide subject matter expertise to Signature Research Centers, industry initiatives, and Oregon InC companies and partners

**The Council has oversight responsibilities for the 2015-17 Oregon InC portfolio. In addition, as a result of the changing context covered in this document, Council members have also identified five initial areas of opportunity for the decade ahead as it completes its full integration as a core program within Business Oregon. These offer a starting point for Oregon InC strategic planning in 2016.**

## 1 Enhancing Oregon innovation ecosystems

Although not new, the concept of "ecosystem" has risen in prominence within the fields of economic development, entrepreneurship, and especially innovation as we have shifted to network-centered practices in these fields. Understanding the nature of Oregon's ecosystems—how they link people, sectors, funding, firms, institutions, and communities—will provide important context for developing the kind of Innovation Plan that will most benefit the state during its next decade.

## 2 Building core innovation assets throughout Oregon and in partnerships with other stakeholders

The SRCs have already begun to expand their operations east and south at some distance from the I-5 corridor, creating new opportunities for entrepreneurs across the state. But new kinds of assets—from coworking spaces to incubators and accelerator programs to community learning projects and peer learning platforms—are also increasingly important innovation assets. As importantly, talent, social networks, and the social technologies that enable them, will impact the innovation agenda as Oregon InC engages a wider range of industries, sectors, and communities that have not been a primary focus of innovation to date. Collaboration with new stakeholders such as the Oregon Talent Council and Higher Education Coordinating Commission will likely aid this expanded focus.

## 3 Integrating innovations in finance and funding into strategy

Although financing is also a core innovation asset, we have treated it separately for two reasons: First, the fundamental changes in Oregon's funding landscape—such as the prevalence of crowdfunding—merit specific attention; and second, new tools and approaches in public sector financing—such as impact bonds and corporate and public-sector sharing economy platforms and new procurement processes—have significant bearing on both where Oregon InC resources are invested and how. Oregon InC members require time to understand these trends and the opportunities they present in the context of next generation innovation policy.

## 4 Adopting and advocating for effective internal innovation practices

Oregon InC has not been in the business of looking at the practice of innovation within its own agency or across government. But because it is a critical nexus of collaboration between public and private sectors, the "innovation gap" between public and private sectors often surfaces. Oregon InC is in a unique position to adopt and experiment with new innovation practices itself, on behalf of its agency, and perhaps state government more broadly. As a starting point, data collection, analysis, reporting, data sharing and storage, project documentation, program evaluation, and communication are all practices that could be vastly improved and better aligned, helping the state begin to build its own evidence base around what works to build innovation capacity and prosperity in Oregon communities.

## 5 Public engagement

One of the goals of Oregon InC is to promote innovation. "Every Oregonian an innovator" was a mantra adopted early in the Council's history. But Oregon InC has not yet built the technology infrastructure, process expertise, or media collateral to communicate this message to the public. This need is more urgent now that Oregon InC is a program in the state's base budget and will be a priority for the Council moving forward.



# Summary



**Business Oregon, Oregon InC, and our many strategic partners are committed to surfacing the best ideas, crafting the best strategies, and doing so in a cooperative spirit to further Oregon's innovation economy.**

In this report we have taken the opportunity to reflect on the past ten years. We know that the work we embark upon today will be reflected upon ten years from now as a new set of

leaders takes up the mantle. It is our hope and expectation that our work together over the next several years will accelerate a state-of-the-art innovation and entrepreneurship ecosystem in Oregon—contributing to job growth, a vibrant economy, and more prosperous communities.

## Oregon's 2015 Innovation Scorecard

INDICATOR	10 YEAR TREND	RELATIVE TO U.S. AVERAGE (LATEST YR)	LATEST NATIONAL RANKING
<b>INVENTION</b>			
Invention Disclosures	↑	↔	24
Patents	↑	↑	6
Patent Citations	↑	↔	12
<b>TRANSLATION</b>			
R&D Investments	↑	↑	10
SBIR/STTR Awards	↑	↑	11
University Licenses/Options	↑	↑	9
University Licensing Income	↑	↓	22
<b>COMMERCIALIZATION</b>			
Venture Capital Investments	↓	↓	18
Kauffman New Entrepreneurs	↓	↓	29
New Company Creation	↔	↑	17
University Start-ups	↔	↓	27
<b>ECONOMIC PROSPERITY</b>			
Manufacturing GDP	↑	↑	2
Average Wage	↑	↓	22
High-Tech Employment	↓	↑	15
Exports	↑	↑	12
<b>INNOVATIVE ENVIRONMENT</b>			
Educational Attainment	↑	↔	17
STEM Workforce	↑	↑	15
STEM Graduates	↑	↔	31
Migration of Knowledge Workers	↑ <sup>1</sup>	↔	24
Broadband Access	N/A	↑	14
<b>2015 INNOVATION SCORE (OUT OF 100)</b>			<b>67</b>

<sup>1</sup>Represents 9 year analysis from 2005 to 2014  
Source: Business Oregon

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“Today it’s increasingly difficult to find points of separation between emerging industries and this is translating to education, workforce, and entrepreneurship as well. The generation of children in school today are true ‘digital natives’—most have not known a world without touch screens. We need to teach our kids to embrace failure as entrepreneurs do—as iteration—so if at first you don’t succeed...try, try again.”

- INNOVATION COUNCIL MEMBER

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