Driving Innovation in Oregon

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Business Oregon

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Outline

- Innovation Index
- New Agency Target Industries
- Oregon Innovation Plan
- Rural Entrepreneurship Program
- SBIR/STTR
- Guests

Elements of an Innovation Ecosystem

- Integrate innovation into **Oregon's strongest industries**
- Construct **regional capacity** to support innovation and entrepreneurship statewide
- Build an accessible pipeline of **access to entrepreneurial capital,** available regardless of demographics, geography, industry or stage of business

Innovation Index

Oregon's 2015 Innovation Scorecard

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

[1]Represents 9 year analysis from 2005 to 2014
Source: Business Oregon

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Business Oregon Target Industries

Advanced Manufacturing

Upstream metals & machinery, aerospace & defense to biomedical

High Technology

Semiconductors & electronics as well as software and information technology led by Intel

Outdoor Gear & Apparel

Apparel & footwear and outdoor gear anchored by Nike and Columbia Sportswear

Food & Beverages

Oregon's fastest growing manufacturing sector includes food, beer, wine and spirits

Forestry & Wood Products

Forestry and value-added products manufactured around the state

Business Services

Professional & technical services to company management and customer support

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The Oregon Innovation Council's Innovation Plan 2016

Oregon Innovation Plan

- New Timing - December 31 every odd year Oregon InC will deliver an Oregon Innovation Plan:
  - Innovation index
  - Economic indicators
  - Benchmarks with other states
  - Performance of previous Oregon InC investments
  - Latest innovations affecting Oregon industry
- Separate out the Oregon Innovation Plan from the Oregon InC budget

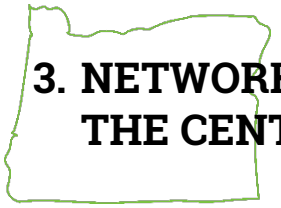
Oregon Innovation Plan

- 6 month strategy:
  - Make **catalytic investments** with private, public, educational and philanthropic partners (to innovate in ways individual groups aren't able to alone)
  - **Strategic Planning Committee** structural recommendations to council by April 29
  - **Proactive investment strategy** in 3 to 4 target industries where innovation support can have highest ROI

Rural Entrepreneurship Program

1. **CREATE CENTERS FOR ENTREPRENEURSHIP**

2. **BUILD PROGRAMS FOR EVERY STAGE OF ENTERPRISE DEVELOPMENT**



3. **NETWORK THE CENTERS**

- Capacity-Building Pilot
- NE Oregon & SW Oregon hubs
- $250,000 Strategic Reserve Fund
- Timeline: April 1, 2016-June 30, 2017

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SBIR and STTR

- Small Business Innovation Research (SBIR)
- Small Business Technology Transfer (STTR)

- Business Oregon built two support programs:
  - 2014 - $400,000 Phase 0 & Matching Program
  - 2016 - $400,000 Phase II Program

SBIR

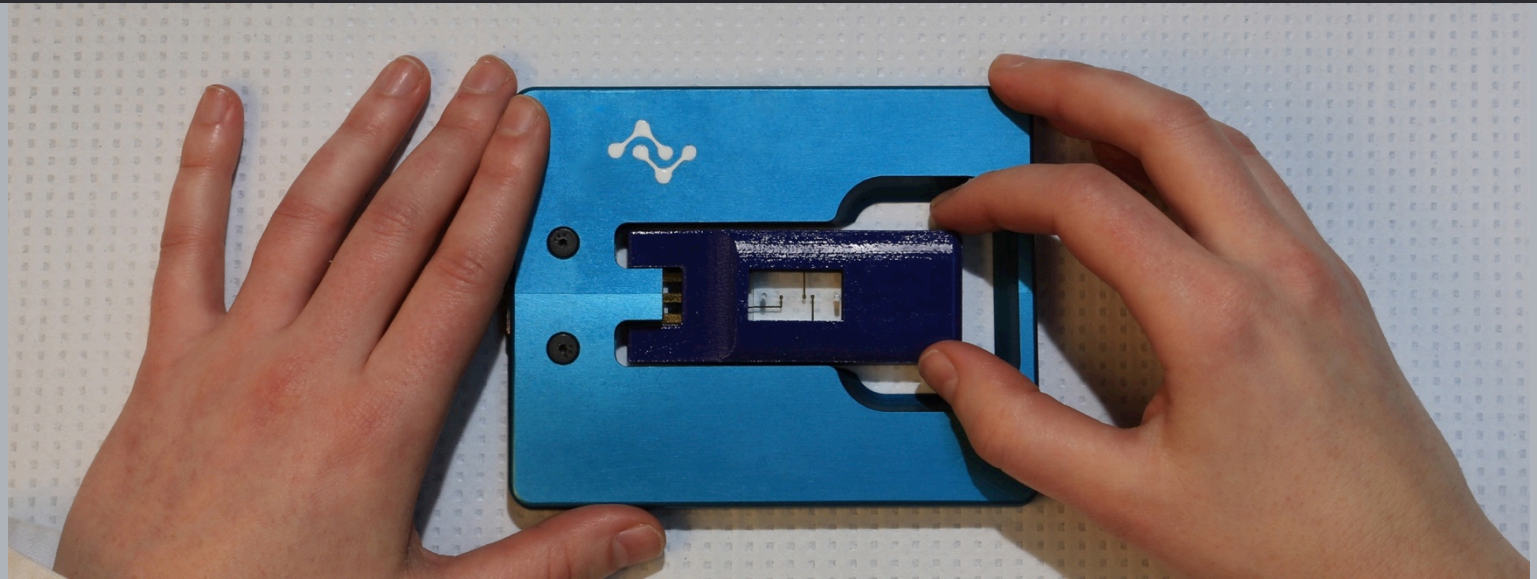
MATT BEAUDET, NEMAMETRIX

PHASE 0 GRANT RECIPIENT

NemaMetrix

An Oregon BioTech Startup

CEO – Matt Beaudet



Drug Development is Expensive and Inefficient

- $3B per new drug
- $80B spent in US on R&D
- $53B on “failures”

NemaMetrix Technology

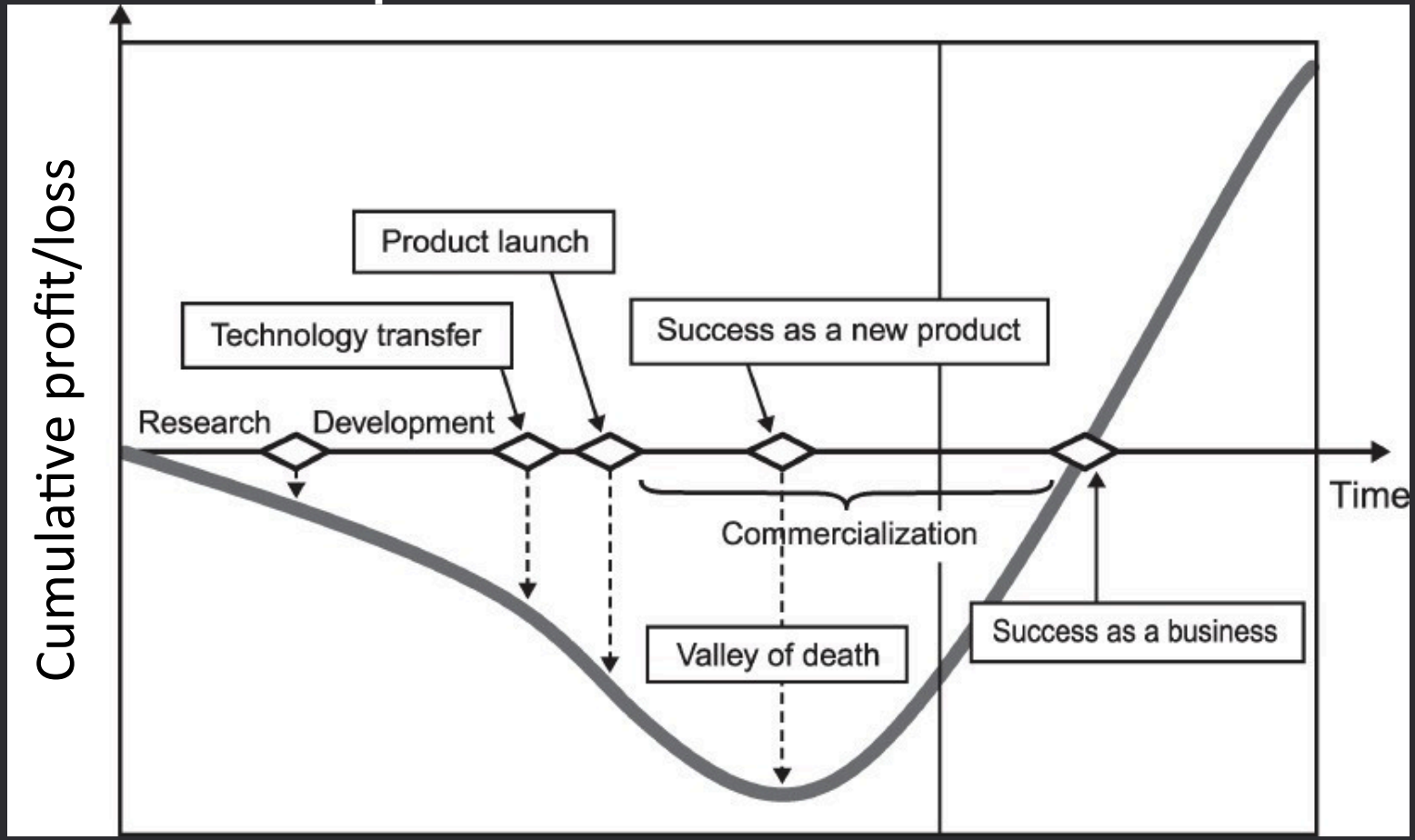
- Alternative to mice for drug discovery
- Predictive for 62% of human diseases
- Lowers cost for drug discovery 100x

C. elegans worm

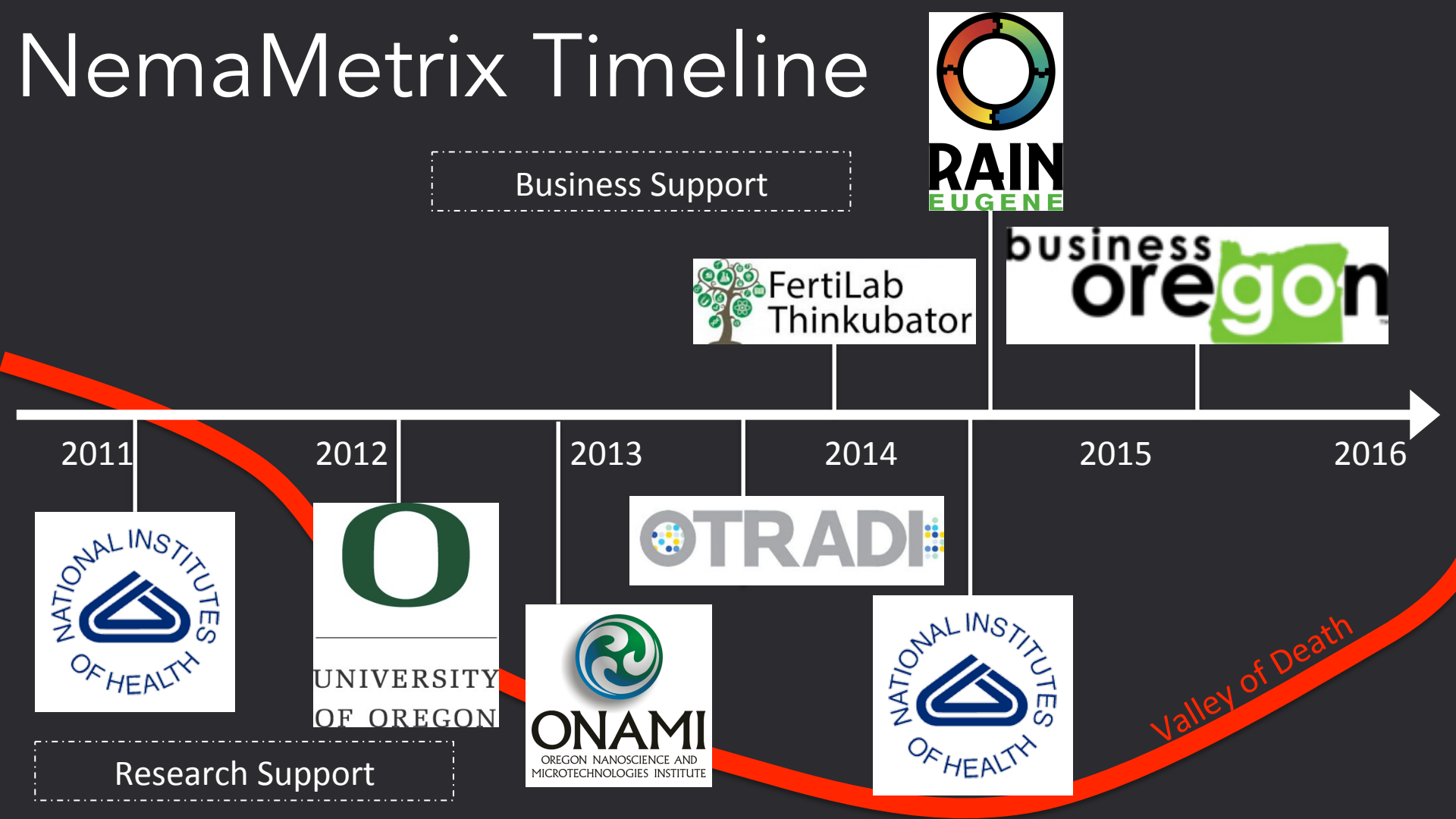
Mice are the leading cost drivers in drug development. Costing

~$1M per experiment !!

New Company "Valley of Death"



NemaMetrix Timeline



Business Oregon's impact

- $ and support to validate Market
  - Prepare for a $1M SBIR Phase II
  - Private Investor Ready
    - 10 employees
    - 12 month revenue projection $1M

Thank You

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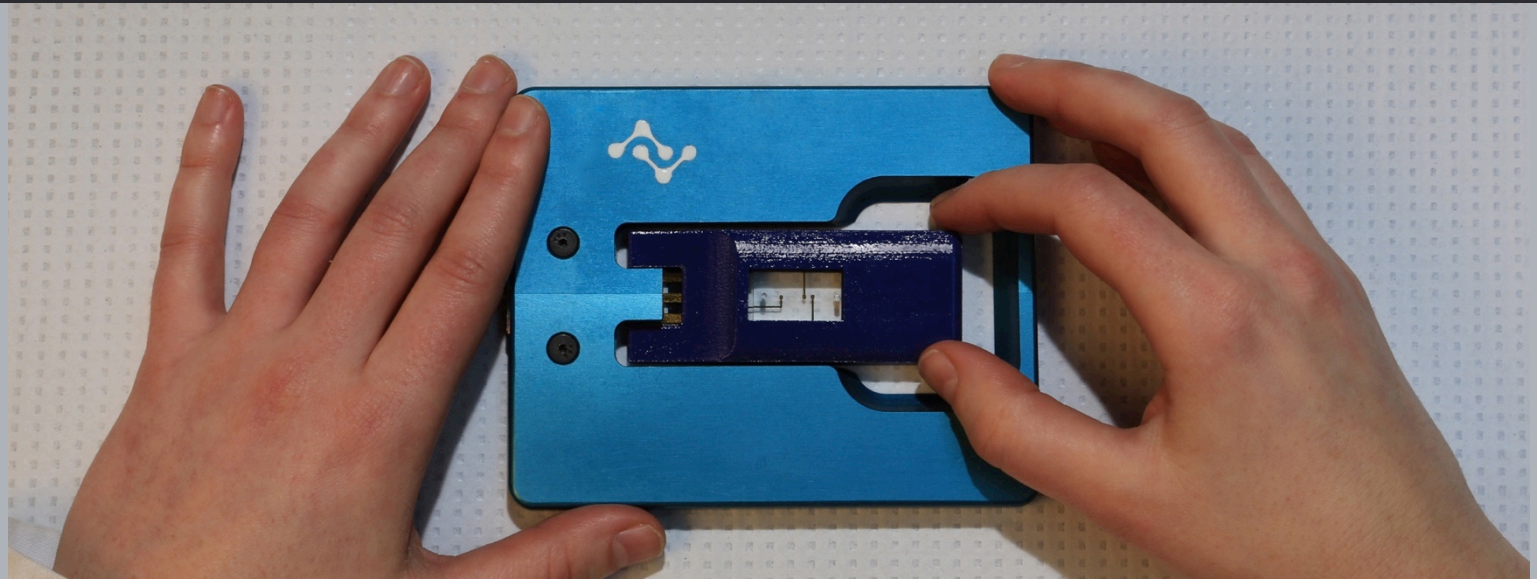


SBIR

JOHN BRESHEARS, ARCHITECTURAL APPLICATIONS

PHASE II GRANT RECIPIENT

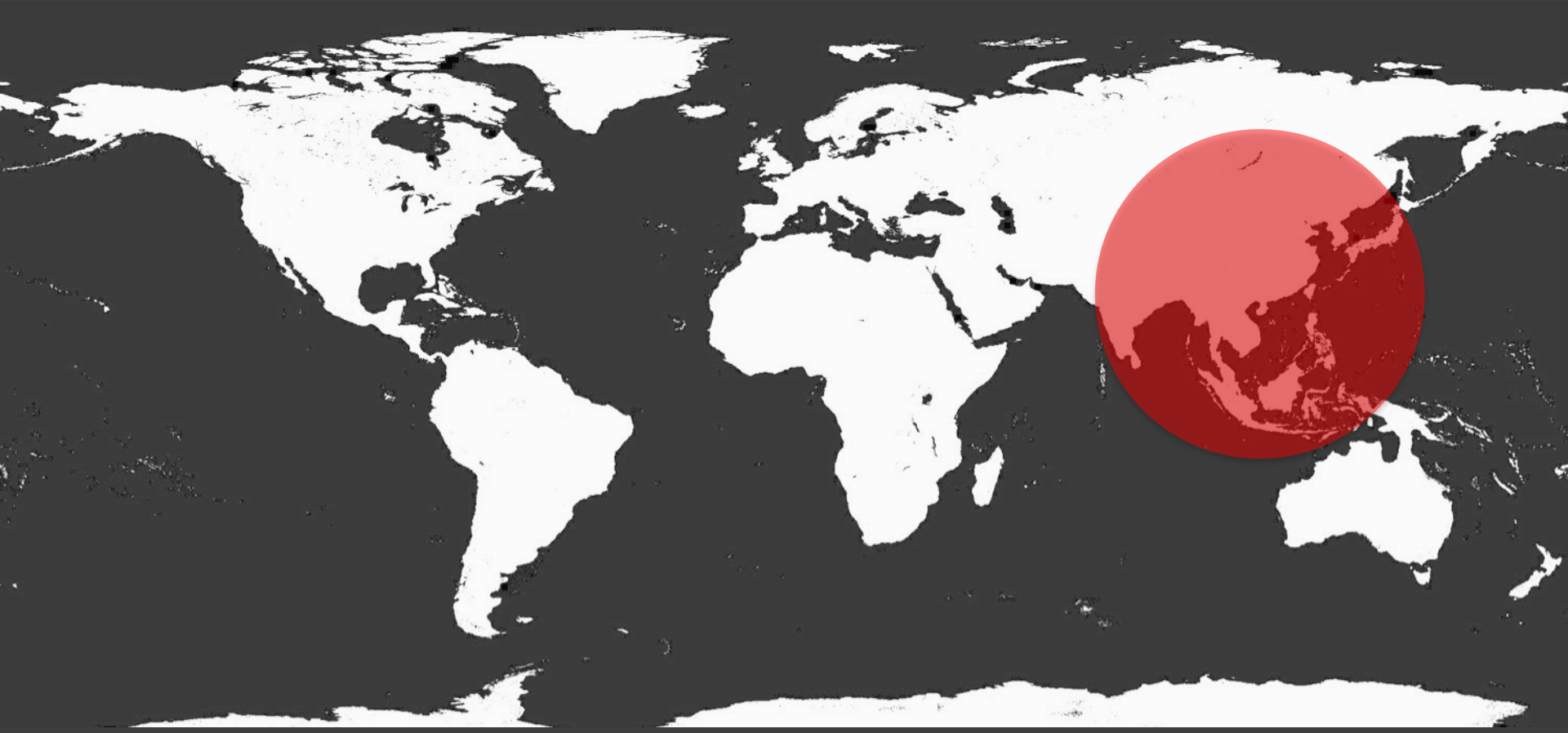
AirFlow™ Panels

passive heat & humidity removal
integrated into the wall

architectural applications

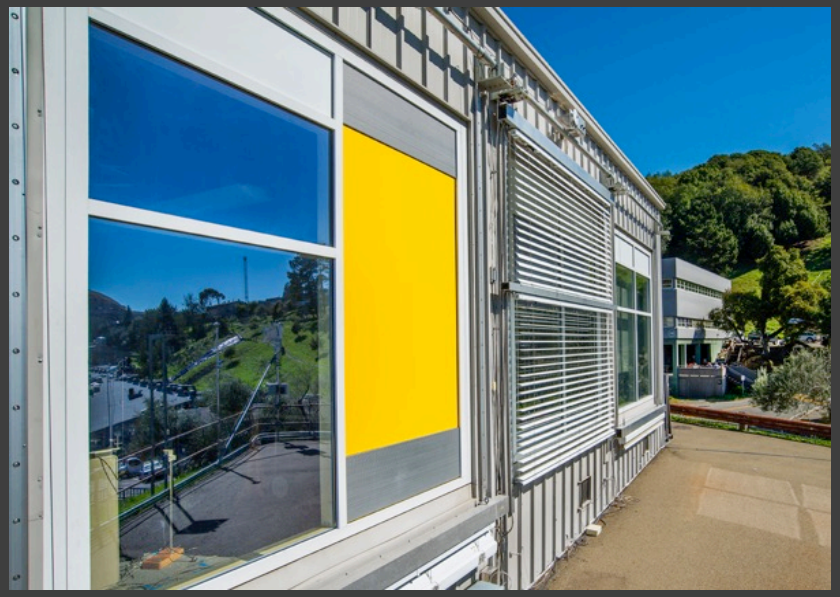
a2

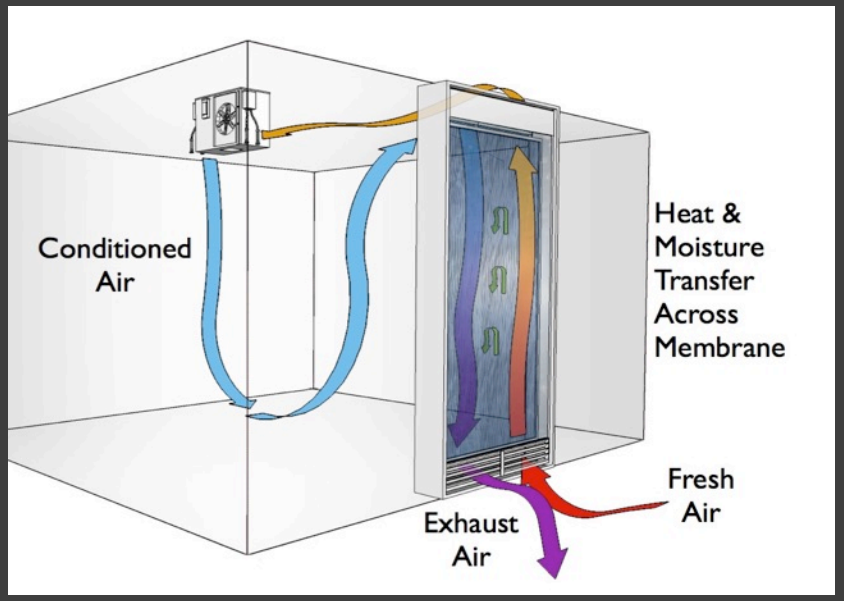
There are more people living inside this circle than outside of it.



architectural applications

a2





AirFlow™ Panels

Cool a room with
25-50% less energy
using space-saving
technology integrated into
the building enclosure

architectural applications
a2

product validation

2010-11

bench-scale (≈1’ x 1’)
Menlo Park, CA

arpa-e

LBNL
MTR

2011-12

mid-scale (≈3’ x 7’)
Singapore

doe sttr I

ETH-Zurich
N.U.S.

2012-14

full-scale (≈5’ x 12’)
Berkeley, CA

doe sttr II

LBNL
dPoint Technologies

architectural applications
a2

business development

Intellectual Property:
- US Patent allowed, Dec. 2015
- China & Singapore to follow

Sales:
- First sale, July 2015
- *Hunter Douglas Facades* partner

Manufacturing:
- Improved process - Oregon State University
- Unit assembly and production - Redmond, Oregon

Investors:
- Want to see proven market

sales pipeline

Lake|Flato Architects, San Antonio, TX

Hartsfield-Jackson International Airport, Atlanta, GA

Nan Fung Development, Hong Kong / mainland China

Georgia Tech Living Building, Atlanta, GA

Saigon Tax Trade Centre, Ho Chi Minh City, Vietnam

AirFlow™ Panels

Manufacturing in Oregon

Selling to the World

architectural applications

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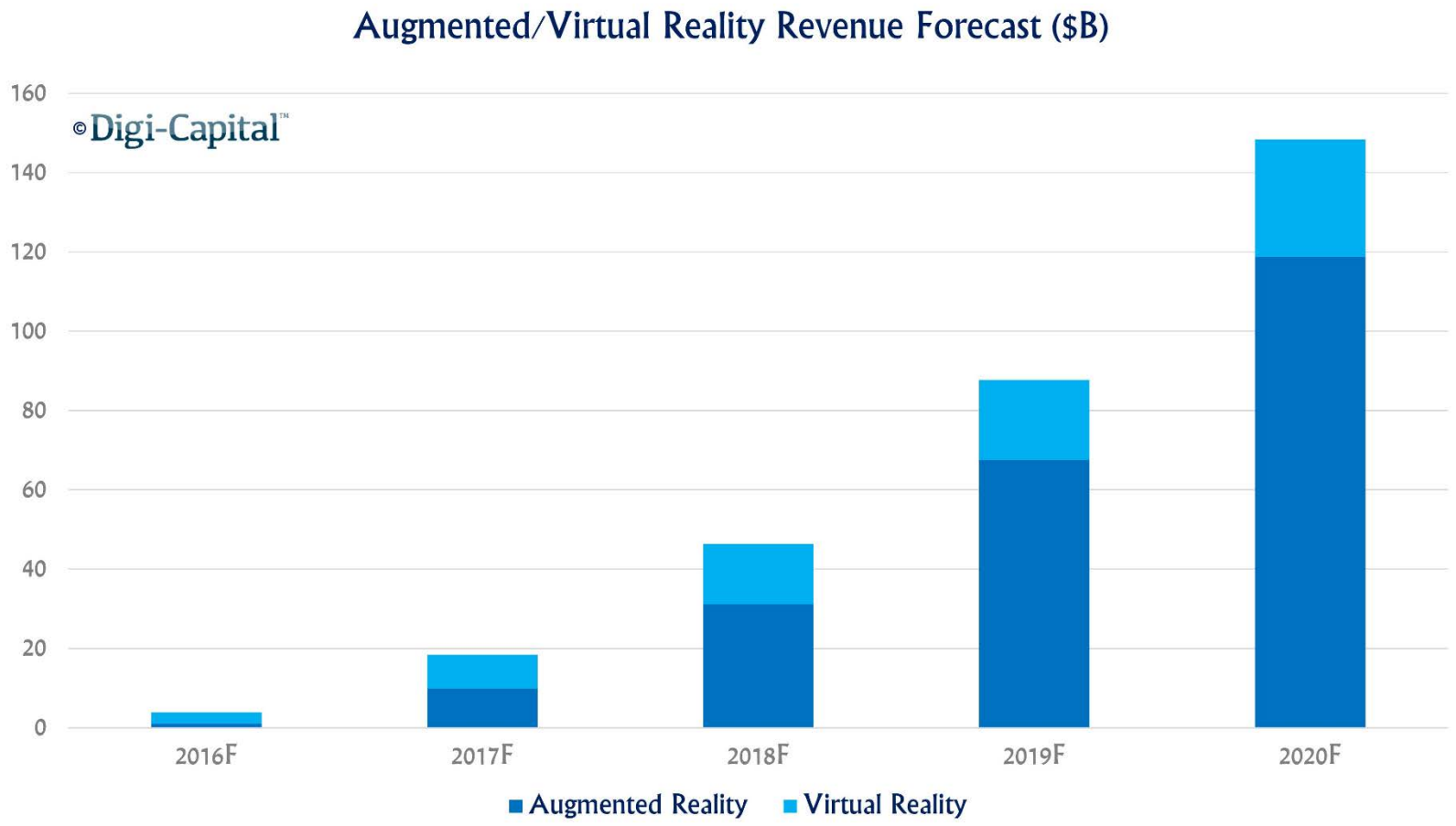
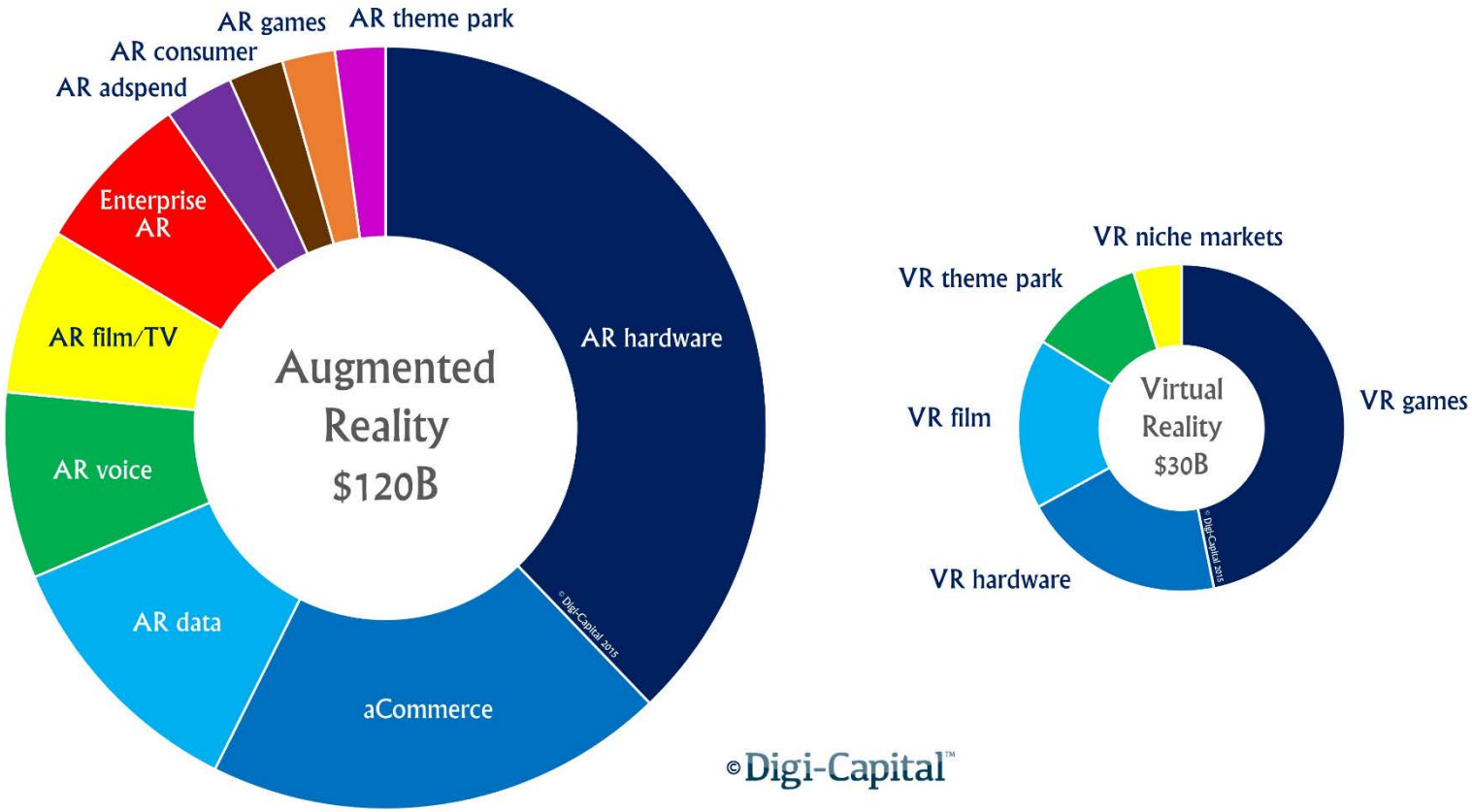
PETER LUND

OREGON GAMERS ASSOCIATION


Augmented/Virtual Reality Revenue Forecast ($B)
©Digi-Capital™
160
140
120
100
80
60
40
20
0
2016F
2017F
2018F
2019F
2020F
Augmented Reality
Virtual Reality

Augmented/Virtual Reality Revenue Share 2020F



Microsoft
HoloLens

KARL MUNDORFF

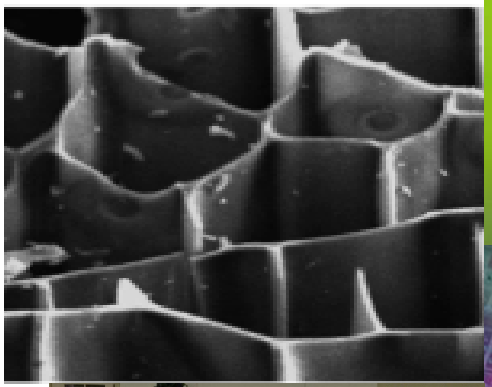
OREGON STATE UNIVERSITY

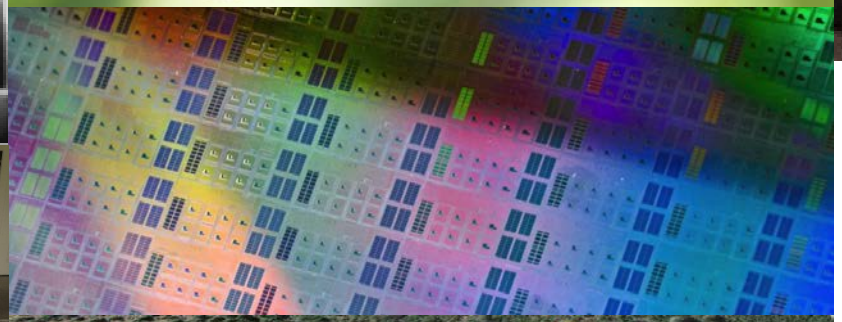
ADVANTAGE ACCELERATOR

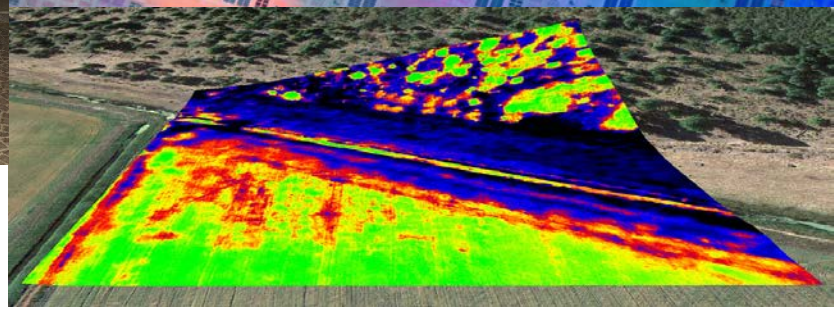
The OREGON STATE UNIVERSITY Advantage

Advantage Accelerator

Oregon's AgTech Opportunity







The Situation

- Everyone recognizes the economic divide between urban and rural Oregon
- The rural economy is still mostly agriculture, forestry and natural resource based
- There is huge diversity of Oregon's agriculture market and is more specialty based then commodity based
- Oregon ag produces Pears, Shrimp, Beets, Wheat, Blueberries, Wine Grapes, Mint, Watermelons….
- This diversity exists because the state offers a wide variety of geographies and microclimates
- This creates a huge opportunity to create new products and services

Leverage our strength in the specialty agriculture market and strengthen the rural economy: Support AgTech!

- Ag Tech is about leveraging our natural resources into value added products
- It's about high tech and the Internet of Things
- It's about low tech and repurposing Ag Waste
- It's about leveraging our statewide resources to support and develop new technologies for Oregon and the world

Oregon is already creating AgTech Companies

Ag Tech Investment

- Ag Tech Investments doubled in 2015 to $4.6 Billion across 527 deals
- Corporate strategic venture funds such as Dow, Monsanto, BASF, Bayer
- Traditional venture funds and private equity firms such as Kleiner Perkins, Harris and Harris and Flagship Ventures
- Deals in Animal Health and Nutrition, Biomaterials and Biochemicals, Decision Support Tech, Drones and Robotics, Farm-2-Consumer, Food e-Commerce, Foodtech, Food Safety & Traceability, Indoor Ag, Irrigation and Watertech, Soil and Crop Tech, Wastetech, Smart Equipment and Hardware

The Opportunity

- Ag Tech can re-vitalize the rural economy
- Oregon has a wide variety of crops to be test beds
- Companies are already forming in a wide variety of markets
- Investment sentiment is high and will remain so as we feed 9 billion people

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