



Eastern Oregon University
Portland State University
Oregon Institute of Technology
Oregon State University
Southern Oregon University
University of Oregon
Western Oregon University



Oregon **TECH**



Oregon **TECH**



Engaging and Serving Oregonians and Their Communities

*Oregon Public Universities
State Programs
Joint Ways and Means
Education Subcommittee
April 17, 2019*

State Programs

Signature Research (*OSU, PSU, UO*)

Labor Education Research Center (*UO*)

Population Research Center (*PSU*)

Marine Research Vessel (*OSU*)

Dispute Resolution (*UO & PSU*)

Domestic Violence Legal Clinic (*UO*)

Criminal Justice Policy Research Institute (*PSU*)

Oregon Solutions (*PSU*)

TallWood Design Institute (*OSU & UO*)

Fermentation Science (*OSU*)

Institute for Natural Resources (*OSU*)

Climate Change Research Institute (*OSU*)

Oregon Renewable Energy Center (*OIT*)

Ocean Wave Energy (*OSU*)

2019-21

DAS CSL

\$42.6 M

2019-21

University CSL

\$43.6 M

Signature Research Centers

Irem Tumer, Interim Vice President for Research, OSU

Labor Education Research Center

Bob Bussel, Director Labor Education Research Center, UO

Population Research Center

Jason Jurjevich, Associate Director Population Research Center, PSU

Marine Research Vessel

Jack Barth, Executive Director Marine Studies Program, OSU

Signature Research Centers



Since 2003, Signature Research Centers for Multi-Scale Materials and Devices at OSU, UO and PSU, have used nanotechnology to develop products with commercial applications.

The overall mission of the initiative is to create high-wage jobs and quality economic development in the state.

2017-19 LAB - \$1,089,319

2019-21 DAS CSL - \$1,149,232

2019-21 University CSL - \$1,177,554



Signature Research CAMCOR



HIGH-TECH SERVICES & INSTRUMENTATION EDUCATION AND HIGH-WAGE, HIGH-DEMAND JOBS

Annually, CAMCOR works with:

62 companies

48 University of Oregon researchers

33 external academic researchers

3-year Total External revenue: **\$1.8 M**

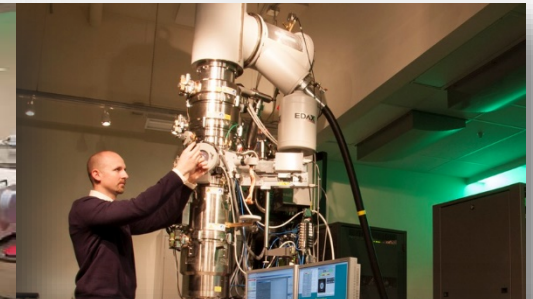
3-year Total Internal revenue: **\$1.1 M**

•CAMCOR instrumentation courses support more than **65 graduate students annually**

•Average starting salary of masters students: **~\$60,000 per year**

•Creating jobs for graduates and providing a **competitive advantage to small and mid-scale industry in Oregon** who can't afford capital equipment

•Incubator space for start-up companies



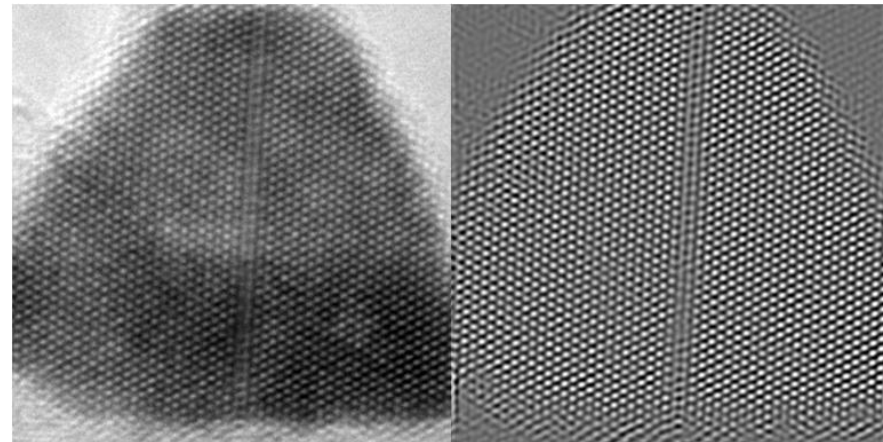
Signature Research CEMN



Center ^{for} (Electron Microscopy) + Nanofabrication

Serving the Industrial and Academic Nanotech Community
pdx.edu/cecn

- Enhances research activity and supports the needs of academic institutes and companies through the Center's unique location and state-of-the-art instruments
- Highly specialized equipment to enable critical research to take place throughout Oregon and beyond
- Working closely with industry and federal partners to continue to acquire new technology typically unavailable to smaller industrial and academic partners



Defect on Fe₃O₄ nanoparticles taken
with TECNAI F20 TEM
Tony Chen



Portland State
UNIVERSITY

Signature Research



ADVANTAGE ACCELERATOR

Oregon State
University

**ADVANCED TECHNOLOGY &
MANUFACTURING INSTITUTE**



Maximizing Our Impact

ATAMI is Oregon State University's premier academic institute for high impact technology and manufacturing development, driving economic development in Oregon and beyond.

Past two years

- RAPID: **\$70 M** Manufacturing USA Grant
- Inpria: Raised **\$23.5 M** in outside investment
- Valliscor: Became the global dominant supplier of bromofluoromethane

Labor Education Research Center



LABOR EDUCATION & RESEARCH CENTER

Established in 1977 with funding from the Oregon Legislature to make the resources and expertise of UO available to workers, unions, and other stakeholders with an interest in issues related to work and employment

2017-19 LAB - \$710,328

2019-21 DAS CSL - \$749,396

2019-21 University CSL - \$767,865



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Key Metrics (2015-2019)

- **Number of Students Served:** 9,559
- **Number of Programs:** (trainings, conferences, workshops): 170
- **Externally Funded Projects:** \$181,604 annual average
- **Books, Policy Reports, and Other Commissioned Publications:** 19

Population Research Center



Population Research Center

PORTLAND STATE UNIVERSITY

Provides population data, information, research, and demographic analysis for Oregon and its communities. Acts as lead state agency in working with the U.S. Census Bureau to disseminate information at local levels.

- **Oregon Population Estimates Program (OPEP)**
- **Oregon State Data Center (SDC).** Oregon's lead partner with the [U.S. Census Bureau](#)
- **Oregon Population Forecast Program (OPFP)**
- **Demographic Consulting Services.** Consulting services to public agencies, private firms, and not-for-profit groups across Oregon.
- **Graduate Certificate in Applied Social Demography.** PRC faculty instruct courses in population studies and applied demography.



2017-19 LAB - \$455,705

2019-21 DAS CSL - \$480,769

2019-21 University CSL - \$492,617

Marine Research Vessel



Oregon State
University

Established in 2013, the Oceangoing Research Vessel Program conducts specified marine research activities using U.S. National Science Foundation (NSF) research vessels currently stationed in Oregon. The appropriation for 2017-19 funded 24 days of ship use during the biennium, including fuel, supplies and labor.

2017-19 LAB - \$648,833

2019-21 DAS CSL - \$684,519

2019-21 University CSL - \$701,388

Leveraged Funds - \$4,500,000

Key to winning the grant to design, build and operate our nation's newest research vessel delivered to OSU in 2021.



Marine Research Vessel



Seven projects in 2017-2019 (OSU, PSU, UO, LBCC, ODFW)

10 undergrads, 7 grads, 18 community college, 2 HS, 3 HS teachers (from PSU, UO, OSU, LBCC, OCCC, SWOCC, Bandon HS, Warrenton HS, Taft HS).

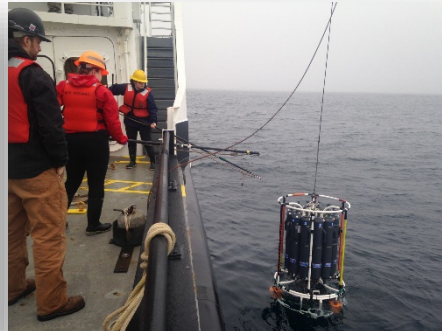
110+ students and teachers since program inception.

"Working alongside students, teachers, and other, more-experienced scientists, provided everyone with opportunities to learn from each other. We created great science because we asked questions, we passed on our knowledge to the next person, and we did so with enthusiasm." *Alexa Kownacki, Ph.D. Student, OSU Department of Fisheries and Wildlife.*

"This was an incredible experience that I will never forget. To say that it was life altering would not be an exaggeration." *Cecily Douglas, PSU graduate student*



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*Humpback whales from
drone video footage
(Jason Miranda, OCCC)*



Dispute Resolution

*Patrick Sponsler, Administrator, Oregon Office for
Community Dispute Resolution*

Domestic Violence Legal Clinic

Merle Weiner, Faculty Director Domestic Violence Clinic

Criminal Justice Policy Research Institute

*Brian Renaure, Director Criminal Justice Policy Research
Institute*

Oregon Solutions

Karmen Fore, Director Oregon Solutions

Dispute Resolution



Origin and Public Mission

In 2003, the Legislature (SB 904) transferred dispute resolution programs to the UO and PSU. Each provides **mediation and dispute resolution services to the state** through two programs:

- **Oregon Office for Community Dispute Resolution** provides mediation services and conflict resolution training to private parties. Pro bono mediators respond to more than 8,000 community conflicts each year.
- **Oregon Consensus** at PSU provides *public policy mediation* and dispute resolution services.



Project and Service Examples:

- Malheur National Wildlife Refuge
- School-based restorative justice
- Neighbor-to-neighbor and family mediation
- Wildfire prevention in Southeast Oregon
- Population forecasting
- Foreclosure avoidance facilitation

2017-19 LAB - \$2,634,011

2019-21 DAS CSL - \$2,778,882

2019-21 University CSL - \$2,886,874

Leveraged Funds - More than \$10 million in contracts, grants, and services



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School Of Law

Domestic Violence Legal Clinic



- Provides funding to any ABA accredited law school in Oregon that provides clinical legal education services to victims of domestic violence, stalking or sexual assault
- Domestic Violence Clinic *both* serves low-income victims *and* educates law students to do this important work after graduation
- 314 victims were served in calendar year 2018
- 100% of alums responding to a survey said **yes** to this question,

“Did your experience with the Domestic Violence Clinic make you more willing and/or capable of helping victims of domestic violence, sexual assault, and stalking?”

2017-19 LAB - \$364,381

2019-21 DAS CSL - \$384,422

2019-21 University CSL - \$393,896

2017-19 Leveraged Funds - Approximately \$650,000



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Domestic Violence Legal Clinic



Quote from client: "I was actually given negative, incomplete, and inaccurate information elsewhere. That experience made me hesitant to believe that I had any legal recourse toward protecting myself. The UO DV Clinic not only educated me about the actual legal standing of my situation, they helped me make an informed decision to work with the legal services to secure my safety and my child's safety."



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Criminal Justice Policy Research Institute



Top Activities 2017-2019

Implementation of 2015 End Profiling Act

- Receiving profiling complaints from public
- Maintain repository of profiling complaints from law enforcement
- Ensure transparency in complaint process, outcomes, and investigations

Community Outreach

- Name change proposal to “*Commission on Equity in Policing*”
- New website for greater visibility: equityinpolicing.com
- Central repository for anti-profiling policies and complaint forms

2017-19 LAB - \$262,162

2019-21 DAS CSL - \$276,581

2019-21 University CSL - \$283,397



Criminal Justice Policy Research Institute



Top Activities 2017-2019, cont.

Anti-bias Profiling Training

- Ongoing since 2007, first anti-profiling training with DPSST occurring state-wide
- Two curriculums
- Trained over 3,000 officers since 2008



Portland State
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Oregon Solutions



Origin and Public Mission

Since 2002, **Oregon Solutions** has helped communities implement over 100 designated projects addressing education, the economy, natural resources, health care, transportation, and energy.

Oregon Solutions Process

- Problem or opportunity identified by community
- Assessment completed
- Governor designates project
- High-level conveners selected
- Project team formed
- Declaration of Cooperation

Project Examples:

- South Douglas CTE Collaborative
- Levee Ready Columbia
- Oregon Coast Trail
- Urban/Rural Ambassador Institute
- Historic Columbia River Highway Collaborative
- Willamette Locks Commission
- ZEV Executive Order Collaborative
- Aurora State Airport Assessment

2017-19 LAB - \$2,363,195

2019-21 DAS CSL - \$2,493,171

2019-21 University CSL - \$2,554,614

Leveraged Funds - \$786,284



Portland State
Hatfield School of Government

TallWood Design Institute

Anthony Davis, Interim Dean of Forestry, OSU

OSU Fermentation Science

Alan Sams, Dean of Agricultural Sciences

Institute for Natural Resources

*Lisa Gaines, Director Institute for Natural Resources,
OSU*

TallWood Design Institute (TDI)



An industry-driven partnership between

- College of Forestry, **Oregon State University**
- College of Design, **University of Oregon**
- College of Engineering, **Oregon State University**

TDI Mission

To advance the manufacture and application of wood products through research, testing, outreach and education

2017-19 LAB - \$3,558,605

2019-21 DAS CSL - \$3,754,328

2019-21 University CSL - \$3,846,852

Leveraged Funds:

USDA

- Agricultural Research Service: \$3.75 million
- Wood Innovation Grants: \$1.25 million

Economic Development Administration

- I6 Challenge: \$450,000

Business Oregon

- Oregon Innovation Council: \$700,000

OR Counties, UO Design Studios

- \$100,000



TallWood Design Institute (TDI)



Product & Market Development

Mass Plywood Panel Manufacturing Facility

- Freres Lumber; Lyons, OR
- \$35 million investment in unique new mass timber product

Mass Timber Development Summit

- Sponsored by TDI and Business Oregon (January 15, 2019)



Testing Expertise & Facilities

A.A. "Red" Emmerson Advanced Wood Products Laboratory (Online Summer 2019)

Capabilities include structural testing; digital fabrication and manufacturing; thermal comfort, energy efficiency; acoustics testing; fire testing; indoor air quality and advanced weatherization simulation.



OSU Fermentation Science



Fermentation science funding supports Oregon's fast-growing beer, wine, cider, cheese, and spirits industries and is the most comprehensive fermentation sciences program in the country.

The State's Fermentation Sciences investment has enabled OSU to hire 10 additional faculty and staff to support these rapidly expanding industries.

2017-19 LAB - \$1,297,665

2017-19 DAS CSL - \$1,369,037

2019-21 University CSL - \$1,402,776

Leveraged Funds - \$8.6 M



Oregon State
University

OSU Fermentation Science



PROGRAM IMPACTS

- New hops and barley varieties
- New product development
- International award winning student products
- Enhanced food safety training
- Partnering to solve industry problems
- Research on emerging industry needs:
- Workforce development



Institute for Natural Resources



The Institute for Natural Resources (INR) is a cooperative enterprise helping link the science-based knowledge and expertise of Oregon's universities with natural resource decision making; and providing access to integrated information, data, tools, and knowledge to inform natural resource decision making.

We are headquartered at OSU and have offices at PSU.

2017-19 LAB - \$ 417,797

2019-21 DAS CSL - \$ 440,776

2019-21 University CSL - \$451,639

Leveraged Funds (FY17-19) - \$7.2 M





Natural Resources Digital Library



Topics

Places

Tools

Data

Type something...

Search

☒ All
 ☐ Topics
 ☐ Places

www.oregonexplorer.info

 Explore
TOPICS

Animals and Plants

Climate, Water, and Air

Coast, Ocean, and Marine

Forestry and Agriculture

Land Use and Planning

Landscapes and Ecosystems

People and Communities



TOP PICKS

- » Hazards
- » Imagery: New Services!
- » Land Use
- » Rural Communities
- » Sage-Grouse
- » Wetlands
- » Wildfire Risk

 Explore
PLACES

[Go to the Full Advanced OE Map Viewer](#)

TOOLS

Communities Reporter



Oregon Explorer ATLAS



Oregon Explorer Map



FEATURES

Wildfire Risk


 Oregon Wildfire Risk Explorer Basic Map
Viewer

Coastal Research



Coastal Research Explorer

Sage-Grouse


 Who Cares, and Why? The Oregon SageCon
Partnership

Institute for Natural Resources

FY17- FY19

Revenue
Grants & contracts

\$7.2 M

49 Grants & contracts

4 Plans/guidelines adopted
by government agencies

Funding
Grants & contracts

85%

5 Nationally
recognized
projects

>30 Partner
agencies &
organizations



Oregon Explorer users
(1 Jan 2017 – 10 April 2019)

269,390

OSU classes using
Oregon Explorer

15

Student workers
& volunteers

26

Locations

OSU
PSU

Oregon Climate Change Research Institute

*Peter Rougiero, Interim Director of Oregon Climate
Change Research Institute*

Oregon Renewable Energy Center

Mason Terry, Director Oregon Renewable Energy Center

PacWave

Burke Hales, PacWave Chief Scientist

Oregon Climate Change Research Institute (OCCRI)



- OCCRI facilitates research, serves as a climate change information clearinghouse and provides technical assistance
- Each biennium, OCCRI assesses the state of climate change science as it relates to impacts on Oregon's environment
- OCCRI is housed within the OSU College of Earth, Ocean, and Atmospheric Sciences (CEOAS)



2017-19 LAB - \$327,490

2019-21 DAS CSL - \$345,502

2019-21 University CSL - \$354,017

Leveraged Funds - >\$40 M since 2009



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Oregon Climate Change Research Institute (OCCRI)



- OCCRI hosts the NOAA funded Climate Impacts Research Consortium
- OCCRI leads several efforts to develop and apply science for adaptation planning and increased resilience to climate variability, drought, and climate change
- OCCRI brings together faculty and students at multiple universities to conduct cutting-edge climate research, and collaboratively works with many state agencies including OWRD, OHA, ODFW, DLCD, DOGAMI, and ODF, along with a range of local partners



Oregon State
University

Oregon Renewable Energy Center



Serves small- and medium-sized companies seeking a university collaborator to **prototype, test, validate and accelerate** “cleantech” products, and renewable solar and geo-thermal energy applications

Technical assistance on use of geothermal energy focused on assisting small Oregon-based businesses with **geothermal energy applications**; and attracting clients worldwide

2017-19 LAB - \$500,000

2019-21 DAS CSL - \$527,500

2019-21 University CSL - \$540,500

Oregon TECH

Oregon Institute of Technology

Legislative
authorization in
2004; first State
funding in 2017-19

High ROI for Oregon



Renewable solar
and geo-thermal
energy solutions
for Oregon's
rural
communities



Engaging
students in
experiential
learning through
multidisciplinary
applied research
and projects



Leveraging state
funding with
Federal and
private grants,
client contracts

Solar Powered Irrigation



Low cost for
new grid
connected
irrigation
pumping
connection

Combined with
irrigation
system
modernization
– ~30-50%
water savings
with no
pumping costs

~\$55,000-
70,000 set up
\$0 yearly
electricity costs
20 yr. savings of
~\$100,000-
\$200,000



PacWave

TESTING WAVE ENERGY FOR THE FUTURE

Wave Energy on the Oregon Coast

Burke Hales,
PacWave Chief Scientist

Why? Oregon leads wave energy testing in North America

- Powerful and predictable waves
- History of wave energy innovation at OSU
 - Early 2000s: initial OSU research
 - 2008: OSU establishes NNMREC
 - 2012: First open-water tests off Newport
 - 2016: OSU awarded grant for cabled test site

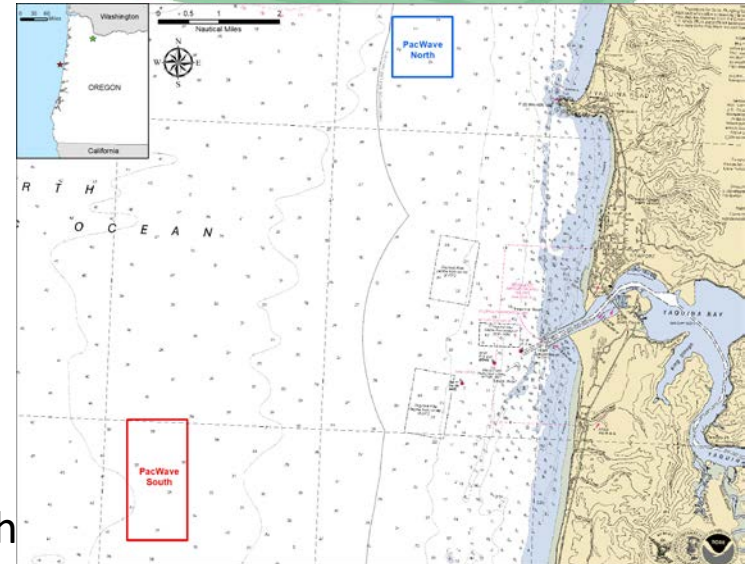
What Is PacWave? Open-water testing facility

- PacWave North, established site off Yaquina Head for autonomous testing
- PacWave South, in-development cabled grid-connected site supported by \$50M grant from DOE requiring 20% match



PacWave South Status

- Three phases: Design, Construction, Testing
- Nearing completion of Design phase
 - Final License Application submission May 2019
 - Preliminary Design Review May 2019
 - Matching funds Committed August 2019
 - Final Design Recommendation September 2019
 - Construction Approval October 2019



PacWave South Funding

\$40 M DOE

\$10 M required match

Federal	State	Other
\$35M, secured 2017	\$0.8M (Secured 2016 Session) \$3.0M (Secured 2018 Session)	\$3M OSU (secured 2019)
\$5M, testing phase	\$1.6M (Request, 2019 Session)	\$1.6M, Industry, NGO
\$40M Total	\$5.4M Total	\$4.6M Total

Questions?

Oregon Public Universities State Programs

2017-19 LAB – \$40,416,110 (Ongoing Programs)

2019-21 DAS CSL – \$42,638,996

2019-21 University CSL – \$43,689,815

Leveraged Funds - >\$77,986,284

