

**Academic Quality and Student Success Committee  
Agenda**

	<u>Page</u>
1. Call to Order/Roll/Declaration of a Quorum (8:30am) <i>Chair Brown</i>	
2. Consent Agenda <i>Chair Brown</i> (5 min)	
2.1 Approve <a href="#">Minutes</a> of February 22, 2016 Meeting	1
3. Action Items - none	
4. Discussion Items	
4.1 Enrollment Management Presentation (8:35am - 90 minutes) <i>Institutional Research Analyst, Farooq Sultan and Director of Admissions, Carl Thomas</i>	
4.2 <a href="#">Oregon Manufacturing Innovation Center (OMIC)</a> Presentation (10:05am - 35 min) <i>VP McKinney</i>	3
4.3 Accreditation Report Update (10:40am - 35 min) <i>Dean Maupin</i>	
4.4 <a href="#">Faculty Compensation Study</a> Update including Adjunct Pay (11:15am – 30 min) <i>Dean Neupert</i>	36
5. Other Business/New Business (11:45am) <i>Chair Brown</i>	
Adjournment (noon)	



**Meeting of the  
Oregon Tech Board of Trustees  
Academic Quality and Student Success Committee  
Room 402, Wilsonville Campus  
February 22, 2016  
8am-10am**

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**DRAFT MINUTES**

**Committee Trustees Present:**

Jeremy Brown, Chair  
Bill Goloski

Kelley Minty Morris

Celia Núñez-Flores  
Dan Peterson

**Additional Trustees Present:**

Chair Lisa Graham  
Vice Chair Steve Sliwa

President Chris Maples  
Jill Mason

**University Staff and Faculty Present:**

Brad Burda, Provost  
Lita Colligan, AVP Strategic Partnerships  
Melissa Dubois, STEM Hub Director  
Marla Edge, Academic Agreement Director  
Erin Foley, VP of Student Affairs/Dean of Students  
Allison Gromley, Bookstore Manager  
Jay Kenton, Special Assistant to the President  
Michelle Meyer, Interim VPFA  
Tracy Ricketts, AVP Development and Alumni Relations  
Di Saunders, AVP Communications and Public Affairs  
Michael Schell, Athletics Director  
Erika Veth, Distance Education Director  
Gregg Waterman, Associate Professor Mathematics

**1. Call to Order/Roll/Declaration of a Quorum**

**Chair Brown** called the meeting to order at 8:00am. The Secretary called roll and a quorum was declared.

**2. Consent Agenda**

**2.1 Approve Minutes of October 8, 2015 Meeting**

**Trustee Peterson** moved to approve the consent agenda. **Trustee Goloski** seconded the motion. With all Trustees present voting aye, the motion passed unanimously.

**3. Action Items - none**

#### 4. Discussion Items

##### 4.1 On-line Education, Extension Programs, and STEM Hub Presentations

**Director Veth** walked through a PowerPoint Presentation (on file) and gave an overview of how on-line teaching is used at Oregon Tech; statistics related to on-line students; new products (certificates and badges); and the on-line strategic plan and goals.

**Director Edge** walked through a PowerPoint Presentation (on file) and explained the extension programs offered by Oregon Tech: dual credit, high school transition, advanced credit, international partnerships, articulation agreements, and community partnerships.

**Director Dubois** walked through a PowerPoint Presentation (on file) and gave an overview of the history of STEM Hubs, existing partnerships, goals of the program: to improve Oregon business access to STEM talent and to increase graduates specializing in STEM programs; and how those goals are met.

##### 4.2 Textbook Costs Presentations

**Allison Gromley**, Tech Nest bookstore manager, walked through her PowerPoint presentation (on file) explaining the various means students can acquire textbooks through the bookstore including purchasing a physical book, renting, digital books, try now/buy later digital program, price-match program, and custom course packets; informal lending libraries; and how the bookstore works with students and faculty.

**Professor Waterman** showed his webpage: <http://math.oit.edu/~watermang/> explained the open source text book concept, the value of this type of educational product, how it is used at Oregon Tech, open source textbook repositories and the availability of products. Discussed House Bill 2871 which established an open educational resources grant program through the Higher Education Coordinating Commission.

##### 4.3 Update on HECC Approval of MS Allied Health degree and BS Mechanical Engineering degree offered at Wilsonville

**Provost Burda** stated both proposals to offer the Bachelor of Science in Mechanical Engineering degree at the Wilsonville campus and to offer the Master of Science in Allied Health degree on-line were approved by the Provost Council and HECC.

#### 5. Other Business/New Business - none

#### 6. Adjournment

**Trustee Minty-Morris** moved to adjourn the meeting. **Trustee Núñez-Flores** seconded the motion. With all Trustees present voting aye, the motion carried unanimously. Meeting adjourned at 10:00am.

Respectfully submitted,



Sandra Fox,  
Board Secretary

## **DISCUSSION**

### **Agenda Item No. 4.2**

### **Oregon Manufacturing Innovation Center**

#### **Background:**

Oregon Tech is a partner in the new Oregon Manufacturing Innovation Center (OMIC) collaboration, whose mission is to build an advanced manufacturing research and education center in Portland to support Oregon metals manufacturers in meeting global needs for advancement in materials, manufacturing and processes.

The overall goals of the OMIC initiative for Oregon Tech are:

- Expand business engagement with Oregon's advanced manufacturing industry, resulting in applied research support;
- Build a nationally distinguished mechanical, manufacturing and applied business education offering in the Portland metro area;
- Relieve space issues, particularly with labs, at the Wilsonville campus;
- Complement Oregon Tech's technical expertise and reputation by deepening applied research connections with industry, PSU and OSU.

This AQSS overview will focus on the educational opportunities for Oregon Tech with the OMIC: 1) assessing our state of academic readiness to engage; 2) describing the benefits of applied research projects to the education program; 3) surveying the education market opportunities; 4) addressing the Scappoose location and logistics of delivery.

#### **Attachments:**

*Oregon Manufacturing Innovation Center: Shaping the Future of Manufacturing in Oregon.* Business plan submitted to the Oregon Legislature in May 2016 by the OMIC partners, including the Higher Education Coordinating Commission and the Oregon Business Development Department.

*2016-06-21 Oregon Manufacturing Innovation Center Progress Report.* Oregon Tech internal status report on the progress toward the launch of the OMIC.

# OREGON MANUFACTURING INNOVATION CENTER

Shaping the Future of Manufacturing in Oregon

Business Plan | April 25, 2016

### **World-class Opportunity for Oregon**

The Oregon Manufacturing Innovation Center (OMIC) is an extraordinary project that will augment our region's capabilities in metals, machinery and manufacturing; deliver innovative and efficient solutions to industry; and train the next advanced manufacturing workforce leading to quality jobs. The primary catalyst for OMIC is the co-location of a Research and Development (R&D) Center and Training Facility in Columbia County.

### **Project Background**

The Boeing Company Portland, Oregon facility is one of the world's largest titanium machine shops. In recent years, the facility has faced increased pressure from competition. To achieve long-term competitiveness, The Boeing Company seeks new and innovative tools, techniques and technologies in support of production-rate increases and cost-reduction initiatives.

Supported by the Advanced Manufacturing Research Center (AMRC) in Sheffield UK, The Boeing Company has transitioned several innovative technologies into the production chain. However, the innovation-to-production pathway is long, due to the lack of proximity of Boeing's primary manufacturing facilities in the US and AMRC's UK location. To assist Boeing and other regional, national and international companies in shortening this pathway, economic development leaders from industry, academia and government have assembled in the Portland region to establish the feasibility and creation of an initial business plan for a US-based Advanced Manufacturing Research Center closer to the Boeing Portland facility. Concurrent to this and what would become a key factor was Portland Community College's plan to build a new educational facility in Columbia County.

In September 2015, November 2015 and January 2016, meetings were held in Salem and throughout the Portland metro with elected officials, potential industrial partners, philanthropists, Portland Community College, higher education institutions and potential developers. In January 2016, Senator Betsy Johnson, representatives of the Governor and delegates from Oregon educational institutions, state and economic development agencies and The Boeing Company visited and toured AMRC in Sheffield and gather intelligence on the model.

What emerged is a truly unique economic development opportunity that will establish the Oregon Manufacturing Innovation Center (OMIC) in Columbia County—an ambitious proposal aimed at shaping the future of manufacturing in Oregon. The vision of OMIC is a thriving region driven by a cluster of high-value manufacturing companies and supply chain firms co-located with research and workforce training operations that serve the needs of industry and the surrounding community.

### **AMRC and OMIC: An Overview**

AMRC Sheffield is a 400-acre campus that houses engineered-based research and training operations and employs 2,000 engineers and apprentices. It has a proven track record of delivering technology solutions that directly impacts industry's bottom line and increases competitiveness. Through partnerships with The Boeing Company, 14 other like AMRC centers have been successfully replicated worldwide. Oregon would be the first such AMRC in the United States with a Boeing partnership.

Oregon has all the ingredients for a successful innovation district<sup>1</sup>—an established cluster of precision manufacturing companies, affordable and well-situated land, a skilled workforce, and proactive government and educational partners.

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<sup>1</sup> A trend in urban planning that has emerged as a new model to stimulate economic growth in cities across the globe. "The Rise of Innovation Districts: A New Geography of Innovation in America" (2014). Bruce Katz; Julie Wagner.



The OMIC proposal brings together as founding partners The Boeing Company, the broader regional metals manufacturing industry and employers, Portland Community College (PCC), Portland State University (PSU), Oregon State University (OSU), Oregon Institute of Technology (OIT), the Oregon Legislature, the Office of the Governor, Oregon Employment Department, Business Oregon, Greater Portland Inc, Columbia County and City of Scappoose.

The business launch of OMIC will commence by 2017. The combination of industry-driven Research and Development (R&D) and Workforce Training facilities make OMIC a distinguished economic asset. Advanced manufacturing research activities from OSU, PSU and OIT are poised to begin once a building can be purchased or built.

The Boeing Company, regional industrial partners and Oregon research universities will serve as OMIC's R&D anchor tenants, providing a collaborative environment that accelerates innovative technologies, tools and techniques to directly increase the competitiveness of the member companies.

Parallel to this, PCC will build the Oregon Training Facility focused on serving students through industry-sponsored skilled apprenticeships, leading to postsecondary credentials and family-wage jobs. As the educational accrediting partner for these training activities, PCC will work closely with metals manufacturing companies. Initial apprenticeships will target underserved students in metals manufacturing.

### **Regional Snapshot**

Metals manufacturing is a legacy industry for Greater Portland. The region has approximately 600 small, medium and large metals manufacturing companies—from small-employee machine shops to major producers supplying Boeing, Daimler and other aerospace, transportation, infrastructure and industrial machinery manufacturers.<sup>2</sup> OMIC presents a significant opportunity to ensure the retention and expansion of these firms in our region through an industry/university R&D capability and the skilled talent from the Training Facility.

Co-location of R&D and manufacturing is a must for an innovation-based economy.<sup>3</sup> A manufacturer must innovate in design, testing and production to deliver faster, better, cheaper products to the market. For such innovations to take place, fast prototyping and experimentation must be conducted. As our region's metals manufacturers see their global competition increase, their viability critically depends on R&D competencies in support of their rapid innovation need. However, the cost of establishing an R&D capability for rapid product and process innovation is prohibitive for individual companies, which is why even large manufacturers, like Boeing seek collaborative R&D expertise. An R&D center near manufacturers, many of which are in supply-chain relationships with one another, can rapidly produce innovations and lead to a large-scale employment increase.

As Greater Portland's aging workforce retires, the biggest replacement openings will be for Industrial Machinery Mechanics, Maintenance and Repair Workers, and Specialty Welders, along with Supervisors of Production and Operating Workers. The demand for some skilled occupations, such as Machinists, is outpacing supply.<sup>4</sup> The fastest-growing production occupations are those requiring integrated computer skills, and precision production and craft skills. Both will likely experience new and replacement job openings as advanced manufacturing markets grow.<sup>5</sup>

<sup>2</sup> Additive and subtractive: the new math of Metals & Machinery Manufacturing (2015). Beth Fitz Gibbon.

<sup>3</sup> Making Prosperity - Creating a Sound Economy through Advanced Manufacturing with Advanced Materials, Robust Supply Chains and Exports (2015). Beth Fitz Gibbon.

<sup>4</sup> EMSI

<sup>5</sup> Oregon Talent Plan (2015).

### The R&D Center

The value proposition of the R&D Center is to enhance the competitiveness of metals manufacturing companies of all sizes through a partnership among industry, universities and government, as well as provide a critical mass and magnet for other manufacturing companies—thus, creating an innovation center for advanced manufacturing in Oregon.

The R&D Center will be a deeply integrated applied research facility comprised of technically talented people of all levels who have access to state-of-the-art technology. R&D turns knowledge into value. Industry-led technology offers a pathway for products to move into the marketplace, creating economic value for the participants, in turn generating economic value for the region. Commercialization of technology fuels economic activity.

### Applied Research Areas

Industry and university research partners identified the following short/mid/long-term areas as driving market value, therefore improving process and technique, and benefiting all stakeholders and the supply chain.

APPLIED RESEARCH AREAS	SHORT TERM	MID TERM	LONG TERM
Subtractive Processes	■	■	■
Hard Metal Machining	■	■	■
Automation and Optimization	■	■	■
Advanced Joining (Welding)	■	■	■
Material Efficiencies (National Lab)	■	■	■
Building Next-Generation Machining Tools		■	■
Structural Testing			■
Large Integrated Structures			■
Reconfigurable Factory Concepts			■

### The Oregon Training Facility

The value proposition of the Oregon Training Facility is to build a training apprenticeship program that both meets industry demand and prepares a workforce to fill the many open manufacturing jobs—thus, closing the skills gap for advanced manufacturing in the region.

The Oregon Training Facility will provide an industry-sponsored, Registered Apprenticeship program leading to postsecondary credentials and family-wage jobs. It is the product of a dynamic partnership among higher education, industry and government intended to train and foster the next advanced-manufacturing workforce in Oregon.

Training will target three populations:

- **Diversity:** Focusing on underrepresented populations in Advanced Manufacturing including persons of color, women, the economically disadvantaged and young professionals
- **Adults:** Job seekers from the public workforce system including WorkSource and Department of Human Services clients
- **Youth:** High school students interested in advanced manufacturing careers, including those enrolled in related Career Technical Education (CTE) coursework and disengaged youth



### Degrees and Career Pathways

Institutions of higher education will partner through the Training Facility to develop and support clearly articulated career pathways. This will lead to further education for students and more advanced careers in engineering and advanced manufacturing. Existing pathways between Oregon institutions will be leveraged as will existing pathway models that companies like Boeing have created to promote career advancement.

Degrees	PCC	OIT	OSU	PSU
Applied Business	■	■		
Computer Science (Hybrid Post Baccalaureate)			■	
Engineering Management (Hybrid Masters)			■	
Engineering/Technology Programs	■	■		■
Industrial Mechanics and Maintenance Technology Apprenticeship	■			
Innovation Management (Hybrid MBA)			■	
Machine Manufacturing Technology	■			
Manufacturing/Engineering (Masters)		■		■
Mechanical Engineering (Four Year)		■		■
Supply Chain/Logistics Management (Hybrid MBA)				
Welding	■			

### One Vision: Parallel Paths

OMIC's vision is a thriving region driven by a cluster of high-value manufacturing companies and supply chain firms co-located with research and workforce training operations that serve the needs of industry and the surrounding community. To achieve this, the physical manifestation of OMIC will occur in a two-pronged, phased approach.

### Real Estate Needs, Costs, Ownership and Operation

#### R&D Center

Industry and academic engineers will work jointly as teams on industry-funded, applied research projects. The manufacturing floor provides shared, state-of-the-art equipment. Offices and conference rooms provide collaboration space for project teams. Classrooms provide access to professional development seminars, graduate education and industry-to-industry technical exploration. Equipment will be available for fee-based bespoke use by industry R&D Center members, including small and mid-sized businesses. This approach is especially supportive of the manufacturing supply chain, by allowing the smaller players to test feasibility and develop processes on equipment that would otherwise be out of reach.

The R&D Center requires immediate space needs of 25,000-30,000 SF to house primarily research equipment and researchers with additional office and classroom spaces. Approximately 5,000 SF will be allocated to each research partner (use outlined below), along with space for a machining floor.

- OIT: 3-5 faculty located onsite with 1-2 classrooms for remote delivery for instruction; research space to include a lab for laser joining.
- PSU: Research equipment for machining, joining, structural property simulation and testing, Gleeble, thermal treatments, and environmental testing.
- OSU: Shared use equipment and lab space for subtractive processes, hard metal machining, automation and optimization, advanced joining and robotics automation.

### Training Facility

The Training Facility requires real estate needs of 20 acres with an option to purchase an additional 20 acres for potential future expansion. Phase one building requirements are 25,000 SF configured to house a large open, high bay training area, classrooms, computer labs, offices, small conference room, reception area and storage. The facility will be owned and operated by PCC.

### Financials

The initial legislative funds for OMIC will be used to cover capital investments in land, buildings and some basic capital equipment. Additional resources will be sought from federal, regional, local and philanthropic funding sources.

POTENTIAL MATCHING REVENUE FOR R&D CAPITAL COSTS	
Oregon State Senate Bill 5701 (OBDD)	\$2,500,000
OMIC Stakeholder	\$1,500,000
State Agency Resources (Business Oregon, IFA, ODOT)	\$4,000,000
Total	\$8,000,000

FUNDS EARMARKED FOR TRAINING FACILITY, INFRASTRUCTURE COSTS	
PCC Existing Bonds	\$9,400,000
Article XI-G Bonds (pending approval by Oregon legislature)	\$5,000,000
Economic Development Administration <sup>6</sup> (potential available pending EDA approval)	\$3,000,000
Total	\$17,400,000

### OMIC Allocation of Budget Associated with HB 5203 and SB 5701 (2016 Legislative Session)

Upon acceptance of the OMIC Business Plan, this would release the authorized \$5 million of Article XI-G bonds proceeds for this project to PCC for the Training Facility and \$2.5 million of lottery revenue bond proceeds for this project to Oregon Business Development Department (OBDD) for the R&D Center.

### R&D Center Options and Estimated Construction Costs<sup>7</sup>

#### Current options

- Purchase of existing building plus road, ROW, utilities \$5,700,000
- Land and construction of 20,000 SF building by Port of St. Helens \$5,530,000
- Private developer build-to-suit plus road, ROW, utilities \$13,000,000

Currently, the purchase of an existing building has been prioritized due to the property's alignment with existing R&D needs. With current agreements in place through the Oregon Metal Initiative (OMI) and the Northwest Collaboratory for Sustainable Manufacturing (NWCSM), university partners have plans to hire faculty and expand current advanced manufacturing research, and as industry partners have immediate opportunities to accelerate R&D projects, the purchase of an existing facility is the most cost-effective option. A building has been identified, and negotiations for purchase are in process with an OMIC stakeholder, but cannot be disclosed until approval for the transaction is decided in May. If purchased, the building will be owned by that OMIC stakeholder. The R&D Center will be operated by the OMIC stakeholder that purchases the building, in conjunction with NWCSM, a neutral third-party entity.

Purchase of existing building	\$4,700,000
Road, ROW and utilities	\$1,000,000
Total	\$5,700,000

<sup>6</sup> Application will reflect OMIC vision to include both Training Facility and R&D Center

<sup>7</sup> See appendix 3 for supporting materials provided by Columbia County Economic Team

## **Training Facility Options and Estimated Construction Costs**

### *Current options*

A site in Columbia County has been identified and exploration of a real estate acquisition is in progress. As a result, costs related to land, construction, road ROW and utilities cannot be disclosed. In April, PCC's Board approved a resolution to delegate authority to its District President concerning real property matters related to acquisition of property in Columbia County.

## **Revenue Forecast and Operating Funds**

### *R&D Center*

A large share of the operation funds for the R&D Center will come from annual industry memberships, fee-for-service research contracts, grants and in-kind donation of equipment. A portion of the operating funds will come in the form of a tiered membership structure. Tier 1 members will pay \$300,000 per year, and Tier 2 members will pay \$45,000 per year. The initial membership is a five-year commitment. Tier 1 will be comprised of large manufacturers, and Tier 2 will be comprised of current and aspiring supply chain firms. Companies not wishing to join OMIC as a Tier 1 or Tier 2 member will be able to access the research through either consultancy or by funding individual projects (fee-for-service contracts). Estimated annual revenues are: Year 1 - \$2,245,000; Year 2 - \$5,180,000 and Year 3 - \$6,170,000. (See Appendix 2)

### *R&D Center Estimated Operating Cost Forecast*

The forecasted operating costs for the R&D Center are: Year 1 - \$3,521,800; Year 2 - \$4,230,800 and Year 3 - \$5,734,300. (See Appendix 3)

### *Training Facility*

It is PCC-standard procedure to generate a comprehensive operational budget for any new facility or program initiative, and as such this will be developed as funding is released. The following are identified revenue streams:

- Student tuition
- State FTE reimbursement on student enrollment
- Federal and state grant opportunities such as the current OED apprenticeship grant
- Professional development training for industry at Training Center
- Leasing space at the Training Center
- PCC investment in Operations (overhead, staffing, maintenance, etc.)
- Philanthropic/Foundation Investments (PCC Foundation, individual and organizational donors, etc.)

## **Partner Commitment and Trigger for Use of Appropriated Capital Funds**

### *R&D Center*

Industry and university engagement in OMIC are core to its sustained success. As fiscal agent for the appropriated \$2,500,000 lottery revenue bonds, Business Oregon will require base operating commitments to be in place prior to releasing funds for capital acquisition, construction or infrastructure development. Operating funds for the R&D Center will come from tiered memberships, contract fees and federal research grants. To that end, Business Oregon will require a minimum commitment of a second Tier 1 member to join Boeing and any combination of a Tier 2 member, fee-for-service contracts, federal research grants or commitments from university partners to provide staff, equipment and research projects totaling \$400,000 before releasing the use of appropriated capital funds. Commitments can be expressed through signed Letters of Intent or documentation of contracts or receipt of grant awards (See Appendix 4). Estimated annual revenues are provided in detail (See Appendix 2).

The AMRC relationship brings an international network of willing industrial partners poised to join and invest in OMIC. The AMRC model brings together experienced teams who deliver sustainability by securing additional capital investment, equipment and expertise. The AMRC Sheffield has a proven track record for

delivering technology solutions to industry that directly impacts bottom line, increases competitiveness and provides product ready solutions.

Adrian Allen, Commercial Director at AMRC Sheffield has been engaged under a consulting contract by The Boeing Company for the express purpose of fostering industry support for OMIC. Mr. Allen will return to Oregon in May to engage industry partners. Upon release of the funding from the legislature, letters of intent will be solicited from initial industry partners.

On a state, regional and local business development level, outreach efforts are already underway to engage industry in OMIC. The industry list consists of 123 companies. Relationships within the existing collaborative networks of OMI and NWCSM are being leveraged to secure meetings for membership engagement. Additionally, there is a precedent for fee-for-service contracts and projects existing through university and industry partnerships which will serve as a pipeline for OMIC.

#### *Training Facility*

Employer partnerships are vital to the success of the apprenticeship program, and garnering commitments from employers is a top priority. PCC will work closely with the Oregon Employment Department and local Workforce Investment Boards in the region to engage businesses in sponsoring apprentices.

#### **Governance**

##### *Transitional Governance*

The founding partners—industry, government and academia—formed an Enterprise (*See Appendix 1*) that serves as an interim governance structure to create the mission and vision, and launch OMIC. The Enterprise created a Steering Committee to develop the OMIC business plan including identification of R&D and Training objectives, ownership and operation of the facilities, financials and revenue models, industry partnerships and a timeline of deliverables.

##### *Permanent OMIC Governance*

Clear leadership and accountability will be essential for OMIC to deliver industrial requirements to commercial time scales. Permanent OMIC governance will be established through a Board of Directors, which will guide the strategic direction and oversee the performance of OMIC. Composition of the board will include private industry (through a tiered membership model<sup>8</sup>), and higher education—PCC, PSU, OIT and OSU each having a seat on the Board.

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<sup>8</sup> Each Tier 1 member will have one representative and one observer; there will be one representative for every five Tier 2 members



**Timeline of Deliverables and Milestones**

	<b>R&amp;D CENTER</b>	<b>TRAINING FACILITY</b>
<b>YEAR ONE</b>	<ul style="list-style-type: none"> <li>Identify temporary or permanent accommodation available</li> <li>Building plans (purchase/constructed) produced and agreed upon</li> <li>Identify key technologies being developed within universities that can be showcased, matured and exploited at OMIC (see page 3)</li> <li>Interim Commercial and Research Directors in place</li> <li>Initial projects defined</li> <li>Initial research staff in place by end of Q1 2017</li> <li>Membership: two Tier 1 and one Tier 2</li> <li>Secure \$500,000 in equipment donations or discount consideration</li> <li>Secure \$400,000 in third-party funding (grants)</li> </ul>	<ul style="list-style-type: none"> <li>Two new Registered Apprenticeship programs in Machining Manufacturing Technology and Welding</li> <li>Estimated 25 apprentices enrolled in temporary existing PCC space</li> </ul>
<b>YEAR TWO</b>	<ul style="list-style-type: none"> <li>Membership: two Tier 1; three Tier 2</li> <li>Attract research projects from local and international manufacturing companies</li> <li>Add staffing<sup>9</sup> as cash flow permits</li> <li>Secure \$1.4M in third party external funding (grants)</li> <li>Secure \$500,000 in equipment donations or discount considerations</li> </ul>	<ul style="list-style-type: none"> <li>Facility construction at site in Columbia County</li> <li>Estimated 35 new apprentices enrolled</li> </ul>
<b>YEAR THREE</b>	<ul style="list-style-type: none"> <li>Membership: one Tier 1 and two Tier 2</li> <li>Secure \$1.4M in third-party external funding (grants)</li> <li>Add staffing<sup>5</sup> as cash flow permits</li> <li>Begin initial planning for execution of OMIC Phase II</li> </ul>	<ul style="list-style-type: none"> <li>Estimated 50 new apprentices enrolled</li> <li>New employers committed to sponsorship</li> </ul>
<b>YEAR FOUR</b>	<ul style="list-style-type: none"> <li>Membership: one Tier 1 and two Tier 2</li> <li>Secure \$1.4M in third-party external funding (grants)</li> <li>\$1M in equipment donations or discount considerations</li> </ul>	<ul style="list-style-type: none"> <li>Estimated 60 new apprentices enrolled</li> <li>New employers committed to sponsorship</li> </ul>
<b>YEAR FIVE</b>	<ul style="list-style-type: none"> <li>Membership: one Tier 1 and two Tier 2</li> <li>Execute Phase II</li> <li>Secure \$1.4M in third party external funding (grants)</li> </ul>	<ul style="list-style-type: none"> <li>Estimated 70 new apprentices enrolled</li> <li>New employers committed to sponsorship</li> </ul>

<sup>9</sup> Center Administrator, Operations Manager, Financial Manager, IT Manager

### The Big Picture

This business plan outlines the first phase of OMIC and represents just the beginning. The vision of OMIC is a thriving region driven by a cluster of high-value manufacturing companies and supply chain firms co-located with research and workforce training operations that serve the needs of industry and the surrounding community.

Heralded as “one of the most desirable addresses for advanced manufacturing in the UK”<sup>10</sup>, the AMRC Sheffield and its surrounding area is among those select regions in the world recognized as an innovation district.

Innovation districts have the unique potential to spur productive, inclusive and sustainable economic development. In periods of slow growth, they can serve as a base for job creation and company expansion by helping companies, entrepreneurs, universities, researchers and investors—across industries and disciplines—co-invent and co-produce new discoveries for the market. Often, these districts are proximate to low/moderate-income neighborhoods and can be a catalyst in expanding employment and educational opportunities for disadvantaged populations and underserved communities. Further, innovation districts lend to the prospect of denser residential and employment patterns, leveraging mass transit and transportation corridors to better connect people to work and home.<sup>11</sup>

Like AMRC Sheffield in maturation, OMIC at build-out has a profound opportunity to transform the economic landscape, not only of Scappoose and Columbia County, but also of Greater Portland and Oregon. But it will not happen on its own nor overnight.

The potential of economic development is to do what markets alone cannot do: influence growth through action and investments.<sup>12</sup>

Regional economic prosperity depends on a competitive industrial commons – a strong economic ecosystem with capabilities shared among manufacturing companies, suppliers, customers, partners, skilled workers and regional institutions such as universities and community colleges. Companies and governments must invest together in the regional industrial commons as their source of competitive advantage.<sup>13</sup>

<sup>10</sup> <http://www.amrc.co.uk/news/the-mayfair-of-manufacturing/>

<sup>11</sup> “The Rise of Innovation Districts: A New Geography of Innovation in America” (2014). Bruce Katz; Julie Wagner.

<sup>12</sup> Remaking Economic Development (2016). Amy Liu, Brookings Institution

<sup>13</sup> Making Prosperity - Creating a Sound Economy through Advanced Manufacturing with Advanced Materials, Robust Supply Chains and Exports (2015)



## **Appendix 1: Enterprise Partners**

AMRC Sheffield

The Boeing Company

City of Scappoose

Columbia County

Columbia County Economic Team (CCET)

Greater Portland Inc

Oregon Institute of Technology

Oregon State University

Northwest Collaboratory for Sustainable Manufacturing

Port of St. Helens

Portland Community College

Portland State University

Public Affairs Counsel

State of Oregon

## Appendix 2: Estimated R&amp;D Revenue Forecast

	Cumulative Revenue Growth Forecast			Forecasted Growth Number of Members			
	Year 1	Year 2	Year 3		Year 1	Year 2	Year 3
<b>TIER 1</b> <i>Cumulative</i>	\$600,000	\$1,200,000	\$1,500,000	<b>TIER 1</b> <i>Membership</i> <i>(\$300K each)</i>	2 new <i>(Total of 2)</i>	2 new <i>(Total of 4)</i>	1 new <i>(Total of 5)</i>
<b>TIER 2</b> <i>Cumulative</i>	\$45,000	\$180,000	\$270,000	<b>TIER 2</b> <i>Membership</i> <i>(\$45K each)</i>	1 new <i>(Total of 1)</i>	3 new <i>(Total of 4)</i>	2 new <i>(Total of 6)</i>
<b>FEE-FOR-SERVICE CONTRACTS</b> <i>Cumulative of all Tier 1 times 2</i>	\$1,200,000	\$2,400,000	\$3,000,000				
<b>NSF Grant</b>	\$400,000	\$400,000	\$400,000				
<b>NNMI Grant</b>		\$1,000,000	\$1,000,000				
<b>TOTAL OPERATING REVENUE</b>	<b>\$2,245,000</b>	<b>\$5,180,000</b>	<b>\$6,170,000</b>				

## Appendix 3: Forecast of R&amp;D Center Operating Costs

	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	Total
<b>Equipment Costs</b>						
Equipment Purchase <sup>i</sup>	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000
Equipment Replacement Costs	\$0	\$0	\$0	\$0	\$1,000,000	\$1,000,000
<b>TOTAL COST</b>	<b>\$1,000,000</b>	<b>\$1,000,000</b>	<b>\$1,000,000</b>	<b>\$1,000,000</b>	<b>\$2,000,000</b>	<b>\$6,000,000</b>
<b>EXPENSES</b>						
<b>Additional Staff Costs</b>						
Senior Management	\$800,000	\$840,000	\$882,000	\$926,000	\$972,000	\$4,420,000
Support Staff Costs	\$30,000	\$60,000	\$120,000	\$300,000	\$360,000	\$870,000
Research Assistants	\$250,000	\$500,000	\$1,000,000	\$1,500,000	\$2,000,000	\$5,250,000
<b>Additional Expenses</b>						
Building Loan Interest Fee <sup>ii</sup>	\$216,000					
Building Maintenance			\$10,000	\$20,000	\$20,000	\$50,000
Landscaping		\$5,000	\$2,000	\$2,000	\$2,000	\$11,000
Taxes <sup>iii</sup>	\$0	\$0	\$0	\$0	\$0	\$-
Insurance	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$9,000
Water Sewage <sup>iv</sup>	\$0	\$0	\$0	\$0	\$0	\$-
Energy Costs (Electricity, Gas, Oil)	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$30,000
Custodial	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
Security	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000
University Overhead	\$830,000	\$1,400,000	\$2,002,000	\$2,726,100	\$3,332,000	\$10,290,100
Technicians	\$200,000	\$210,000	\$220,500	\$231,530	\$243,100	\$1,105,130
Tooling/Fixtures			\$200,000	\$300,000	\$400,000	\$900,000
Professional Services	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000
Marketing	\$20,000	\$40,000	\$100,000	\$100,000	\$100,000	\$360,000
Office Equipment	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
Office Supplies	\$8,000	\$8,000	\$10,000	\$10,000	\$10,000	\$46,000
Travel	\$40,000	\$40,000	\$60,000	\$60,000	\$80,000	\$280,000
<b>TOTAL EXPENSES</b>	<b>\$2,521,800</b>	<b>\$3,230,800</b>	<b>\$4,734,300</b>	<b>\$6,303,430</b>	<b>\$7,646,900</b>	<b>\$24,221,230</b>
<b>TOTAL COSTS</b>	<b>\$3,521,800</b>	<b>\$4,230,800</b>	<b>\$5,734,300</b>	<b>\$7,303,430</b>	<b>\$9,646,900</b>	<b>\$30,221,230</b>

<sup>i</sup> Initial costs will be alleviated by In-kind donations from industry and equipment from universities

<sup>ii</sup> This is for 12 months from down payment date at 8% on a balance of \$2.7 million. Down payment is \$1.5 million including earnest money

<sup>iii</sup> Current OMIC location is in South Columbia County Enterprise Zone; tax exempt for first five years

<sup>iv</sup> Facility is on a well; no cost for water/sewage per CCET

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**Appendix 4: Letters of Intent and Support**



Chris Harder  
Acting Director  
Business Oregon

Oregon Institute of Technology  
Office of the Vice President for Wilsonville  
27500 SW Parkway Ave.  
Wilsonville, OR 97070

April 25, 2016

Dear Chris,

Oregon Tech confirms its commitment to the Oregon Manufacturing Innovation Center (OMIC) to be located in Scappoose. The Center promises to bring a coalition of industry, academic and public partners together to address global challenges in advanced metals manufacturing, resulting in economic growth and excellent jobs for Oregon.

For Oregon Tech, we believe this is a strategic opportunity for us to:

- Expand business engagement with Oregon's advanced manufacturing industry, resulting in applied research support;
- Build a nationally distinguished mechanical, manufacturing and applied business education offering in the Portland metro area;
- Relieve space issues, particularly with labs, at the Wilsonville campus;
- Complement Oregon Tech's technical expertise and reputation by deepening applied research connections with industry, PSU and OSU.

Oregon Tech will be locating 3-5 applied research and teaching faculty in mechanical and manufacturing engineering at the site, along with equipment to support applied research. We expect to offer courses at Scappoose that will be simulcast to other Oregon Tech sites across the metro area and the state, providing educational opportunities for technician, bachelor's and master's degree seeking students as well as professional continuing education.

Oregon Tech is in the process of building its Portland metro area mechanical engineering program for nights and weekend students and redesigning its manufacturing engineering program. We have 3 open positions for faculty in mechanical engineering. Industry is represented on our search committee to represent the interests of this initiative in recruiting relevant skills to the area. The \$100,000 equipment grant from the NWCSM will be used for equipment to be located at the OMIC.

Sincerely,

Laura McKinney  
Vice President, Wilsonville Campus

cc: Oregon Tech Board of Trustees

*Hands-on education for real-world achievement.*

27500 SW Parkway Ave. Wilsonville, OR 97070 | 503-821-1250 | [www.oit.edu/wilsonville](http://www.oit.edu/wilsonville)



**College of Engineering**

Oregon State University, 101 Covell Hall, Corvallis, Oregon 97331-2409

T 541-737-3101 or 1-877-257-5182 | F 541-737-1805 | E [info@enr.oregonstate.edu](mailto:info@enr.oregonstate.edu) | <http://www.enr.oregonstate.edu>

April 25, 2016

Chris Harder, Acting Director  
Business Oregon  
775 Summer St NE, Suite 200  
Salem, OR 97301-1280

SUBJECT: Oregon State's Commitment to the Oregon Manufacturing Innovation Center

Dear Director Harder,

The Oregon State University College of Engineering is pleased to support the vision for the Oregon Manufacturing Innovation Center (OMIC) proposed for Columbia County. OMIC's workforce development and R&D efforts will draw new manufacturing industry to Oregon. OMIC will also provide an opportunity to expand the very successful, industry-led Oregon Metal Initiative (OMI). We are particularly excited about the full-scale manufacturing equipment that would be available to university partners.

The Oregon State College of Engineering has the largest advanced manufacturing program in the state, and is one of the leading programs in the country. Our expertise includes next-generation materials and devices, robotics, additive and subtractive processes, hard metal machining, advanced joining, product and human systems, and design. Our capacity was built primarily through state-funded programs like OMI, Engineering Technology Industry Council (ETIC), and the Northwest Collaboratory for Sustainable Manufacturing (NWCSM). Among Oregon State's assets are ten world-class faculty who conduct research in advanced manufacturing funded by industry, state and federal sources. Additionally, our Advanced Manufacturing and Technology Institute (ATAMI) is devoted to finding effective solutions to the challenges facing the manufacturing sector. OMIC offers the opportunity to expand our impact through the available unique shared-use equipment and closer collaboration with industry and our university partners.

In an effort to make OMIC a reality, the Oregon State College of Engineering commits to leasing up to 5,000 square feet of office, shared-use laboratory, and classroom space. Our faculty and graduate students would use this space and OMIC equipment for R&D. I further commit myself, or a member of my leadership team, to serve on the OMIC board to oversee R&D efforts.



In addition, to help make OMIC a success, we also commit to offering our hybrid post-baccalaureate computer science degree, our hybrid masters in engineering management, and the College of Business hybrid MBAs in Innovation Management and Supply Chain/Logistics Management. The offerings and classroom space required will be based on student demand.

We are excited to participate in this opportunity to expand our impact on the manufacturing industry and to create new jobs in Oregon. Please do not hesitate to contact me if you have any questions at (541)737-7872.

Best Regards,

A handwritten signature in black ink, appearing to read "Scott A. Ashford".

Scott A. Ashford, Ph.D.  
Kearney Professor and Dean  
College of Engineering



**Maseeh College of Engineering and Computer Science**  
Office of the Dean

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Chris Harder  
Director  
Business Oregon

April 24, 2016

Dear Mr. Harder:

Oregon Manufacturing Innovation Center (OMIC) represents an unprecedented opportunity for Portland State University (PSU). We pledge to join OMIC as a core institutional member and to make our utmost effort in support of its establishment as well as its long-term success. PSU has extensive research expertise and facilities in metal materials and manufacturing. We intend to deploy our researchers and relocate our facilities on-site OMIC. We commit to making our resources a part of the crucial starter, from which an OMIC R&D enterprise will grow. We share the vision to make OMIC a world-class center where university researchers and industrial engineers jointly advance new materials and innovate manufacturing techniques. The center will benefit the entire industrial ecosystem of metal manufacturers. It can become a prime mover that empowers the growth of a globally competitive metal manufacturing industry in Oregon.

The success of OMIC depends on its initial development of capability and resources to recruit member companies. The R&D projects, which produce immediate values in enabling faster, better, cheaper products and production for manufacturers, are central to the initial growth of OMIC. This is a start-up challenge, which we understand well. The prospect member companies need to see demonstrated capabilities to join OMIC, while it has only limited capabilities and resources to demonstrate. PSU will boost OMIC with our existing human resources, expertise, and facilities. With more than ten researchers of a wide range of expertise, we will reach out to and recruit metal manufacturers, to understand their technological priorities and to develop R&D projects with them. PSU has a fairly complete set of cutting-edge research facilities for R&D in machining, joining, structural testing, thermal processing, simulation, and microscopy. Research facility of this scale costs multiple million dollars to acquire and to maintain. Depending on projects and priority of OMIC, we will consider a timely plan to relocate these machines on-site OMIC. With the faculty researchers and the facility, we see a fast track for OMIC R&D center to be established. Also, we will explore federal grants to bring to OMIC new resources it needs. A specific plan is already underway. We are preparing for a proposal submission to National Science Foundation for an Industrial/University Coordinated Research Center (I/UCRC) grant.

In summary, I write this letter to state our firm commitment to OMIC for its development and its continuing success.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Renjeng Su'.

Renjeng Su  
Dean

---

## Overview

This document is a progress report and high-level plan for an Oregon Tech audience. The scope is all work to prepare for the January 1, 2017 launch of the Oregon Manufacturing Innovation Center (OMIC) R&D facility.

The overall goals of the OMIC initiative for Oregon Tech are:

- Expand business engagement with Oregon's advanced manufacturing industry, resulting in applied research support;
- Build a nationally distinguished mechanical, manufacturing and applied business education offering in the Portland metro area;
- Relieve space issues, particularly with labs, at the Wilsonville campus;
- Complement Oregon Tech's technical expertise and reputation by deepening applied research connections with industry, PSU and OSU.

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## 1 Background: Oregon Manufacturing Innovation Center (OMIC) Project

*Build an advanced manufacturing research and education center in Portland to support Oregon metals manufacturers in meeting global needs for advancement in materials, manufacturing and processes.*

Center is modeled on the successful Advanced Manufacturing Research Centre in Sheffield England (<http://www.amrc.co.uk/>) which has transformed a distressed and economically disadvantaged region into a world center for research with multiple major manufacturers co-located in an industrial park. Manufacturers of all sizes collaboratively invest in applied research projects that are undertaken in the context of an academic environment.

This is the 15<sup>th</sup> such research center established with Boeing leadership worldwide, and the first Boeing sponsored in the United States.

The Portland area is significant to Boeing, since it has a world leading manufacturing center located in Gresham that will be one of the major participants in the center.

The OMIC has twin components: advanced research and development center that provides applied research to mature key technologies for use; and a training center which educates the next generation of skilled technicians and engineers.

A possible mission for the research for the R&D center is the *demonstration of large scale metallic structures for the transport industry*. This scope builds on indigenous skills and serves major industry partners in Oregon: train, truck, helicopter, and airplane manufacturers.

The team pursuing this initiative includes:

- **Industry:** (Boeing and others) and the industry-led NW Collaboratory for Sustainable Manufacturing (NWCSM), Greater Portland Inc.
- **State of Oregon:** Oregon Economic Development Department (Business Oregon), Oregon Employment Department, Governor's economic policy advisor and workforce policy advisor, legislators (Sen. Betsy Johnson).
- **Academia:** Portland State University, Oregon State University, Portland Community College, Oregon Tech.

Ultimately, the OMIC structure will be a 501c3 or 501c6 entity, with a board comprising representatives of member institutions.

Through legislation, the State has allocated \$7.5M of support for the OMIC facility, which will comprise two collaborating sites: Portland Community College's Apprenticeship Training Center (\$5M) and the Advanced R&D Center (\$2.5M). The targeted area for the OMIC is Scappoose, which is located 35 minutes NW of Portland on the Columbia. Scappoose has the right mix of available land, airport proximity, and community support.

A target launch date of January 1 2016 has been set for the OMIC enterprise. The Advanced R&D Center will begin initial operations and the Training Center will offer its first approved apprentice training courses.

PCC is in the process of evaluating and purchasing property in Scappoose to build the Apprenticeship Training Center. They are OMIC State support along with existing funds. They are in conversations to purchase land adjacent to the Scappoose airport. The initial training classes will be held at alternate locations, until the completion of the apprenticeship center in Fall 2018.

Oregon Tech has taken the lead in acquiring an existing property—the Jersey building—for the Advanced R&D Center. This property will be a key enabler for the OMIC-R&D. It was one of several options for the enterprise, and provided the quickest route to launch. It is located about a mile from the proposed PCC site. This makes it possible to meet the ideal timeline for having a viable R&D facility ready to do projects in the next 6-9 months.

Oregon Tech is hiring 3 mechanical engineering faculty to the Wilsonville site, 2 funded initially from the NW Collaboratory for Sustainable Manufacturing. The NWCSM faculty have an applied research component designed to

support the work of the OMIC. The 3<sup>rd</sup> faculty member will be the program director for the new Wilsonville Mechanical Engineering program.

The first NWCSM faculty member has accepted an offer: Dr. Mike Myers. He brings existing research initiatives (SBIR/STTR Phase II funding) and will start work on August 1.

The second NWCSM faculty position may need to go back out for search. The candidate of choice was an internal faculty member who would like to take the opportunity but who has personal considerations that prevent a move to Wilsonville at this time.

The program director search is in progress.

---

## 1.1 Current OMIC enterprise organization

The OMIC enterprise consists of the following coalition partners:

- AMRC Sheffield
- The Boeing Company
- City of Scappoose
- Columbia County
- Columbia County Economic Team (CCET)
- Greater Portland Inc
- Oregon Institute of Technology
- Oregon State University
- Northwest Collaboratory for Sustainable Manufacturing
- Port of St. Helens
- Portland Community College
- Portland State University
- Public Affairs Counsel
- State of Oregon

The partners established a steering committee, whose members are:

- Bill Gerry, The Boeing Company
- Karen Goddin, Business Oregon
- Alison Hart, Public Affairs Counsel
- Janet LaBar, Greater Portland Inc
- Chuck Daughtry, Columbia County Economic Team
- Ren Su, Portland State University
- Marc Goldberg, Portland Community College
- Laura McKinney, Oregon Tech

The steering committee has been charged with accomplishing key initiatives in consultation and collaboration with enterprise partners and two subcommittees, one for R&D and one for training.

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## 1.2 Transitional leadership

Clear leadership of the OMIC is essential to keeping a large and complex initiative with multiple partners moving forward, both during the initial launch period and the critical first years of operation.

Ultimately, a commercial director and a research director will lead and manage the OMIC. To establish permanent leadership, the OMIC must ensure 1) a legal entity and membership governance and 2) sustainable operational funding.



In the next 3-6 months, during the launch phase until permanent leadership is possible, the OMIC will operate under transitional management and governance. Business Oregon is supporting a transitional project manager who enable the work of the enterprise steering committee, which will serve as the decision body to represent enterprise stakeholders.

To be viable, the steering committee requires substantial staff support in the initial phase to provide the following:

- **Overall administrative coordination** of the steering committee, including documentation, minutes, and meeting organization.
- **Project management for launch**, including project planning, coordination, documentation, tracking and risk mitigation, for the initial launch phase for the Advanced R&D Center, coordinated with the Training Center development.
- **Governance and association establishment** for the entity that will become the OMIC and assume the development and operational responsibilities.
- **Enterprise partner communication**, including acting as a central point of contact for all partner and external communications (e.g. website, press releases); building and maintaining a CRM for enterprise contacts; creating and publishing a central calendar.
- **Industry member recruitment support**, as identified by Boeing and others who are engaged in the development of the OMIC.
- **Representation of OMIC and event support**, including locating appropriate speakers, assisting in logistics, and ensuring enterprise awareness and participation as needed.

At this point, Business Oregon is in the process of contracting for a transitional project manager, and hopes to have this filled by June 25. Transitional leadership is expected to be necessary through October.

In addition, resources to support the recruitment of industry members may be available through Boeing's support for Adrian Allen of the AMRC.

---

### 1.3 Oregon Tech's role

Oregon Tech's (or the university partnership) role is two-fold: 1) As the landlord and neutral property manager for the site and 2) as a participant in the center.

For its upfront capital investment, Oregon Tech has requested office space allocated for 5 faculty and necessary support staff, and two classrooms capable of remote delivery with Wilsonville. All remaining space and use specifications will be determined by the industry-driven board, of which Oregon Tech will be an academic partner.

There must be clear separation between Oregon Tech's dual roles in order to preserve the trust amongst the academic partners. If Oregon Tech is perceived as using its property manager influence to sway non-property decisions, other academic partners could rightly protest.

---

## 2 Status: Advanced R&D Center Launch

Key milestones for the launch of the OMIC-R&D are:

- Finalize governance (of the OMIC)
- Recruit industry members
- Close on property
- Equipment and infrastructure development (sufficient for launch)

The OMIC enterprise steering committee reported these milestones in Chris Harder and Marc Goldberg's presentation to the legislative subcommittee on Transportation and Economic Development on 23-May-2016.

For completeness, additional initiatives were identified that are relevant only to the OMIC-Training Center:

- Close on land
- Approval on new registered apprenticeships
- Student recruitment

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### Key results for April-June 2016

- **OMIC Business Plan.** The OMIC enterprise partners produced a comprehensive, high level business plan (attached).
- **Legislative release of \$2.5M in state funding.** Upon receipt and review of the OMIC business plan, on May 25, the Oregon Legislature's Emergency Board lifted the spending limit from \$1 to \$2.5M and \$5M. This allows Business Oregon, the state's economic development agency, to spend the \$2.5M in capital acquisition of a property to support the Advanced R&D Center.
- **Oregon Tech stakeholder review.** Given the urgency of preserving the opportunity to purchase the Jersey building, Oregon Tech met with internal stakeholders in late April and early May—including the Mechanical and Manufacturing Engineering department faculty and FOAC—to evaluate the Jersey property opportunity. Following that evaluation, the opportunity was brought to the Board Finance & Facilities Committee and the full Board for a vote to purchase.
- **Board vote for Jersey property acquisition.** On May 6, the Oregon Tech Board voted to submit an offer on the Jersey building in Scappoose. There were two phases of due diligence: 1) 45 days of property evaluation; and 2) 75 days of OMIC evaluation. Included in the diligence is a vote of the Oregon Tech Board after each period to continue.
- **Acceptance of offer on Jersey building.** The offer was accepted, and we are now in the first diligence phase which ends on July 9<sup>th</sup>.
- **NWCSM commitment.** A meeting was held on June 8<sup>th</sup> that aligned the existing NWCSM board with OMIC. Business Oregon has \$1.7M of funding planned for the next biennium in support of NWCSM that will be directed to support of OMIC.
- **Model for OMIC membership agreement.** Boeing has provided as a pro-forma for the OMIC, the existing agreement for the AMRC-Sheffield. This will be adapted to US/Oregon statutes.
- **Reception held for local industry on OMIC.** Adrian Allen hosted a reception at PCC's Training Facility on Swan Island on June 16<sup>th</sup> to debut the OMIC model to Oregon's metals manufacturers.

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### Planned results for June-July 2016

- **OMIC academic partner MOU.** An agreement in principle amongst the university partners will be signed demonstrating operational financial viability for OMIC. There will be a meeting with university presidents and industry leadership, tentatively scheduled for July 7<sup>th</sup>.
- **Satisfaction of first due diligence phase for Jersey property.** All property due diligence will be completed and the Oregon Tech Board will sign off (or not) on this phase of the purchase contingencies.

- **Written commitment from Business Oregon on bridge funding.** Business Oregon will have a signed commitment to Oregon Tech regarding the bridge funding of \$2.5M from property close through to bond sale. The initial commitment has been assured.
- **Initial list of potential industry members with status of commitment.** The enterprise will have a vetted list of potential inaugural members sufficient to inform the Oregon Tech Board of industry commitment.
- **Funding strategy defined to fill gap of ~\$1.5M to bring OMIC-R&D to operational state.** A path will be identified to provide gap funding to cover property improvements and infrastructure based on identified needs.
- **Transitional project manager in place.** A project manager will be in place and coordinating the work of the enterprise steering committee and its partners.

---

### 3 High-level Plan

This is a draft plan that should be supplanted by a full project plan once transitional leadership is in place.

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#### 3.1 Milestone: Finalize governance

Legal entity for the OMIC which can:

- Hire permanent leadership;
- Hold IP for the enterprise;
- Contract with industry and academic members.

Karen Goddin/Business Oregon will be the steering committee lead for this milestone.

##### Near term actions

- **[June 20/21]** Adrian Allen. University partners meet with Keith Ridgeway to review the existing AMRC agreement and identify initial project opportunities.
- **[end of June]** Karen Goddin. Signed MOU with all academic partners sufficient to allow Business Oregon to release of the \$2.5M and to give Oregon Tech Board sufficient evidence of commitment to move forward with Jersey building purchase.
- **[July 8]** Transitional project manager. Project milestones and plan for remaining work to establish OMIC entity, adopted by OMIC steering committee.

##### Approach/Details

Site operational evaluation must include:

- Proposed 5-year lease agreement with academic partners that covers fixed operational costs. \$20/sqft. Is a first estimate. The time period should allow for viability of OMIC to be demonstrated and/or exit plan for property sale to be executed.
- Specifics on the allocation/allocation process of office/high bay space.
- SLA on adjunct services like security, internet, gas etc.
- Outline of expected use to scale operational costs. Equipment to be located at the site and support needs.

Adrian Allen will provide the AMRC agreements as a starting point. Using a proven agreement should significantly accelerate the development of the OMIC agreements, and save OMIC substantial legal fees. Adrian Allen recommends the approach of offering the deal to members as designed and getting red light/green light participation. Experience suggests that tailoring the agreement for individual members is not feasible.

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#### 3.2 Milestone: recruit industry members

Industry and academic members demonstrating \$1M of commitment:

- Satisfy Oregon Tech due diligence contingency for financial commitment of industry;
- Satisfy Business Oregon release criteria for \$2.5M in investment;

- Build compelling business value proposition and market visibility for OMIC.

Bill Gerry/Boeing will be the steering committee lead for this milestone.

#### Near term actions

- **[asap]** Karen Goddin. Initial inventory of commitments for in-kind and financial support for the OMIC from industry and academic partners.
- **[asap]** Laura McKinney. Confirm with Oregon Tech Board what would be sufficient to demonstrate commitment from industry or other private parties.
- **[asap]** Bill Gerry. Use the pro-bono attorney to revise the AMRC membership agreement to conform to Oregon statutes.
- **[asap]** Karen Goddin. Provide Adrian Allen with some history about what has happened in Oregon with recruitment for economic development. Get ideas about what has worked here in order to facilitate approaching companies.
- **[asap]** Ren Su. Set up an opportunity pursuit team that will inventory the potential sources of funding and maintain a strategic set of materials to deploy to new opportunities.
- **[June 20]** Adrian Allen. Bring the revised AMRC agreement as a foundation template for working with the Oregon universities.
- **[June 20]** University lead. Provide more details on the faculty that will be OMIC researchers.
- **[June 20-21]** Keith Ridgeway. Meet with Oregon universities to identify candidate initial projects for the OMIC that will be novel and utilize local expertise relevant to the mission.
- **[July 8]** Transitional project manager. Project milestones and plan for remaining work to recruit OMIC members through launch, including events and exploration of business development opportunities.

#### Approach/Details

Adrian Allen commits to getting an additional \$400k in industry support. Amongst the current NWCSM members there are promising sources. Adrian reiterates that the OMIC must have both a facility and clear project directions to be compelling enough for industry members.

OMIC-R&D introduction. Adrian Allen is a key participant at the TRAM 2016 conference in Chicago on September 14-15<sup>th</sup>. He can get trade press coverage; provide OMIC with a stand; offer a speaking slot for the Oregon universities. Oregon should plan on sending a contingent to this conference.

OMIC-R&D event. Following TRAM, OMIC could host an event in early October and invite industry to visit. The OMIC should be designed as a showroom for the universities.

For recruiting purposes, Adrian Allen suggests renaming the collaboratory the AMRC-with Boeing (Advanced Manufacturing Research Collaboratory with Boeing). This builds on the already well respected AMRC brand.

Market opportunity. Opening a welding capability in the UK. Doing a DoD/MoD deal. Market is tremendous. Linear friction welding machine would be the ideal equipment. Have the center show that it can draw from a variety of manufacturing approaches including joining. Consider if OMIC should/could partner with EWI.

#### 3.2.1 Opportunity pursuit team

Ren Su/Portland State University.

Given that there are a number of potential grant opportunities to support the development and research mission of OMIC, the team is launching a coordinate pursuit team. The initial meeting will be on June 20<sup>th</sup> with Keith Ridgeway of the AMRC, who will bring samples of the kinds of bids they are winning.

#### NNMI

An initial effort—that includes OMIC partners—for a National Network for Manufacturing Innovation grant is underway, and the team has been encouraged to submit for the second round.

#### **IMCP**

13 Federal agencies have identified funding sources. We have an IMCP designation for Portland MSA as manufacturing community. That gives us preference in grants, and we have an assigned Federal point of contact. Application of material science to engineering is our domain area. The IMCP is complementary to NNMI. There is no dedicated money. The MSA covers 16 counties. This also provides access to philanthropy. Across the country in round 1: IMCP areas pulled in \$125M \$750k to \$2M is the typical size of a grant. In mid-October, there is an IMCP summit. Oregon will take a delegation. Portland IMCP is inviting a group of federal agency leaders to Portland.

The key here is to use Federal contacts (e.g. Bill Schneider who sits on the board of the NSF) to set up the story. Bill sits on a committee paid by the CTO of Boeing to evaluate the research strategy for Boeing. Adrian Allen suggests inviting him in to get advice on how to pursue federal money.

A \$1B fund holder has invited Adrian Allen to speak about the AMRC. He has also asked Adrian that if he gets a chance, let him know if there is something in the states that he can help. "NNMI are not moving mountains now."

#### **NSF**

IUCRC round in January. Need 5-6 companies. 3 institutions. \$250k/year for 5 years. (IMCP preference applies.) Compels the universities to take 10% overhead.

#### **National Lab (NETL)**

Should open conversations with Cynthia Powell regarding funding and equipment. NETL may be a customer for the R&D at OMIC. This is in the NETL DOE needs space. In addition, NETL can be a funding channel.

### **3.2.2 US delegation**

OMIC should develop a comprehensive US delegation outreach. This portion of the initiative has no identified lead at this point in time.

### **3.2.3 Additional OMIC business opportunities**

#### **Ideas:**

- Can OMIC provide help to qualify SMEs to meet supply chain needs—potentially implement set-asides to support the work?
- Adrian Allen has a different approach to up production on machines using frequency response or vibrational analysis. This could be a specific intervention for SMEs in Oregon. Offer a master class to 100 best SMEs and get feedback. Take the top 20 and continue through on development. Benchmark times and hourly rates to show value.

### 3.3 Milestone: close on property

Property purchase closes on Jersey site:

- \$2.5M of state funding from Business Oregon is available for close;
- Gap funding (~\$1.5M) secured for property improvements and required infrastructure;
- Property assured as suitable for use;
- OMIC enterprise is viable as demonstrated by meeting Oregon Tech Board contingencies.

Laura McKinney and Jay Kenton/Oregon Tech will be the steering committee leads for this milestone.

#### Near term actions

- ✓ **[May 25]** EBoard approves release of \$2.5M based on OMIC business plan.
- ✓ **[asap]** Karen Goddin. Confirm the timeline and process for borrowing from Treasury.
- **[asap]** Karen Goddin. Research whether the bond conditions would require an overhead assessment for use of the facility.
- ✓ **[asap]** Bill Gerry. Provide Boeing contact who can help specify likely electrical, water, internet, septic or other infrastructure requirements to ensure that the Jersey property provides sufficient capability for use.
- ✓ **[June 1]** Chuck Daughtry. Create an inventory of needs for property improvements and infrastructure. This should include the operational needs from future tenants. Ren Su, Laura McKinney, John Parmigiani and Bill Gerry should assist in getting this information.
- **[June 8?]** Karen Goddin. Augment the inventory from Chuck Daughtry with a list of funding sources and evaluation of each source against needs to inform the gap funding approach.
- ✓ **[by end of June]** Karen Goddin. Confirm the approach for obtaining bridge funding for \$2.5M from close through bond sale in 2017 at no cost to OIT.
- **[by July 9]** Karen Goddin. Provide written commitment from Business Oregon regarding bridge funding.
- **[by July 9]** Jay Kenton. Secure evidence sufficient for Oregon Tech Board to make decision on property due diligence.
- **[by July 15]** Karen Goddin. Gap funding secured.

#### Dependencies/Issues

- None identified.

#### Approach/Details

##### 3.3.1 Bridge funding

Karen Goddin/Business Oregon.

Business Oregon plans to use Strategic Reserve Fund funds for the bridge loan money in October and then pay themselves back when the bonds are sold in the spring. That way they will avoid interest and paperwork by not using Treasury loan funds. They have the capital. The approval process through Governor's office will be pro forma. Karen Goddin will likely start that process after we clear first 45-day due diligence phase.

##### 3.3.2 Jersey site purchase

Jay Kenton/Oregon Tech.

Oregon Tech's Jersey site purchase agreement has the following contingencies:

- **[July 9] Property due diligence.**
  - Environmental condition
  - Ingress/egress
  - Flood plain evaluation



- Property value per appraisal
  - Sufficiency of:
    - Electric
    - Water
    - Septic/digester
    - Internet connectivity and bandwidth
    - Property improvements, including high bay
    - Condition of improvements (including compliance)
  - Soils and geo-engineering
  - Zoning and other restrictions with regard to feasibility for use
  - Absence of radon
  - **[by July 9]** Oregon Tech Board approval
- **[Sept 22] OMIC due diligence.**
    - a. Confirm the economic feasibility of acquiring the property, including legislative approval for bond funding and bridge funding until bond funds are available.
    - b. Obtain commitments from OSU, PSU, PCC and/or other educational institutions with respect to development and operation of the property.
    - c. Obtain commitments from Boeing and other private parties; including confirmation that the electric, water, septic/digester, internet access/bandwidth, and property improvements are sufficient.
    - d. Validation of the transfer of equipment from Boeing or other tenant(s) of the property.
    - e. Favorable determination that a US Economic Development Administration grant will likely be available for the project.
    - f. Final approval for any zoning changes required for the property for intended use.
    - g. Securing permanent legal ingress/egress to the property acceptable to Oregon Tech.
    - h. Establishment of corporate legal entity for the purpose of developing and operating the project.
    - i. **[by Sept 22]** Oregon Tech Board approval.

### 3.3.3 Obtain gap funding

Additional funding to bring OMIC-R&D to operational status, estimated at \$1.5M:

- Property improvements such as ingress/egress road and paved parking.
- Infrastructure improvements such as trolley crane.

Karen Goddin/Business Oregon.

Grants for EDA may be available to the project. EDA not available for land acquisition or internal infrastructure like the trolley crane. Can be used for:

- Ingress/egress; parking lot paving.
- Convert septic to sewer. Connecting to city water. Acquiring right of way.

There are multiple sources of funding. We should keep strategic reserve request as a last item since it is the most flexible.

All partners who intend to use the site for operations should contribute to the evaluation of the site for sufficiency in the areas of electric, water, sewer, internet access, and high bay capabilities.

### 3.3.4 Ingress/egress

Permanent legal ingress and egress.

Chuck Daughtry/CCET.

Scott Parker has agreed to donate a portion of his adjacent 11 acres for the access road.

Options considered:

- Oregon Tech. additional investment. Not likely to invest additional funds.
- PCC. Currently off the table since Weston property is the target.
- Private/regional developers. Talking with private developers. Regional private developers.
- Port of St. Helens. They would be interested but they have cash flow issues. Would it be possible for Business Oregon to provide gap funding to the Port?
- Oregon Tech/Business Oregon. Land swap for Jersey property acreage.

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### 3.4 Milestone: equipment and infrastructure readiness

OMIC-R&D ready for operations on January 1, 2017:

- Leases with university and other tenants.
- Property management in place, including all necessary tenant services.
- Space plans for tenants.
- Equipment installation and connection.
- Ingress/egress improvements.
- Infrastructure improvements.

#### Near term actions

- ☐ **[June 15]** Laura McKinney. Template facility plan without details.
- ☐ **[July 15]** Laura McKinney. Initial project plan for facility readiness, including known infrastructure and property improvements.

#### Approach/Details

Much of the details about what will be possible must be determined as part of the funding and property milestones. Once those are better defined, the details will be available to start planning this area.

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## 4 Oregon Tech Program

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### 4.1 Mechanical and Manufacturing Engineering

Oregon Tech has two disciplines that will be offered at the Wilsonville campus and augmented by the OMIC in Scappoose: Manufacturing and Mechanical Engineering. We expect to deliver didactic portions simulcast between the two sites so that students can attend classes at either location. Labs will be conducted at the most appropriate facility.

At this time, we offer manufacturing engineering technology. In the near future, we plan on full Mechanical Engineering at the Bachelors level and a restart of the Manufacturing Engineering program at the Masters level. Further details on programs are on hold until we have the faculty in line to address ABET requirements for the BSME, define the program priorities, and secure necessary equipment. The department chair at Klamath Falls has not had enough bandwidth to support the development of the program at Wilsonville without additional faculty in place.

Our BSME will be offered in the metro area under an MOU with Portland State University, where we offer nights/weekends programming and they offer daytime programming. We also commit to encouraging our post-baccalaureate programs to matriculate to PSU's Masters in ME program.

Oregon Tech also has an approved MS in Engineering, which we may configure to offer niche degrees that address cross-discipline areas related to solving problems for our manufacturing base.

Currently Wilsonville has one faculty member who is entering his last year of tenure relinquishment, and one faculty in Manufacturing Engineering/Technology. As noted in the first section, we expect to hire 3 additional faculty members between now and next spring to fill out the ranks to 5 faculty members, which should provide a strong basis for the programs moving forward.

Wilsonville's facilities are scant for the support of a full mechanical/manufacturing program, especially viable lab space. Our current machine room has insufficient ventilation and space to support a full program.

As is done at the OIT-Seattle site to support their similar degree programs, we hope to lease large welding/machining capabilities from local community colleges, most likely PCC, to support our courses in those areas. Ultimately the OMIC PCC Training Site should be able to support this work, especially as the apprenticeship program is a days-only program, and nights, Fridays and Saturdays should have equipment available. There are other PCC campuses with sufficient equipment to make this possible in the interim.

For our machining equipment, we are seeking a local partner in Wilsonville with sufficient high bay space that could host our capabilities in the next year, and possibly beyond. This would be an external lab site for the Wilsonville courses, and might have a full suite of advanced equipment such as OIT-Seattle has in their own facility. It does not require a substantial footprint to be a viable lab facility.

New enrollments in the current manufacturing program are languishing due to insufficient faculty time for both recruiting students and maintaining the offerings. In general, having two or fewer faculty members does not create ideal conditions for full program execution. We expect to see an uptick in our applications and enrollments once the OMIC is seriously underway.

There is substantial demand in the metro area for a nights/weekends BSME. In addition, our local Wilsonville industry also has demand for specialists in manufacturing, and we expect that contacts through OMIC may result in additional demand being identified.

The co-located PCC apprenticeship program should provide a natural pathway and connection to students with aspirations for full engineering degrees.

Finally, the industry partners of the OMIC will have continuing education needs, and there is a great opportunity to offer short courses on the distinguished equipment expected to be housed at OMIC.

Models that show profitability of the program after 2-3 years have been developed. However, the modeling depends in large part upon the hiring timelines for the faculty, the applied research success for faculty and the types of offerings we can provide to industry in a shorter timeline.

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## 4.2 Management

OMIC provides additional strategic opportunities for our BAS in Management and Operations Management programs.

Since the PCC Training facility will be granting apprenticeships, the graduates should be eligible to enroll in Oregon Tech's Bachelors of Applied Science in Business. This degree is tailored to graduates with two-year terminal technical degrees and is ideally suited for connecting with this population for those who aspire to a BS degree for career reasons. This is a unique offering in the state.

Having a site in Scappoose with the same simulcast potential with Wilsonville opens up another region for access by place-bound students.


In addition, this facility provides a learning environment for our Operations Management students, perhaps for capstone projects.




# Faculty Compensation Study

**Ms. Nancy Stepina-Robison**  
Vice President *Human Capital*

**Mr. Robert Holloway**  
Senior Consultant


MGT 




**Oregon TECH**

**MGT OF AMERICA**

- National management and consulting firm serving public sector clients for **OVER 41 years.**
- More than **60 professionals** located around the country to serve our clients.
- 5 locations** around the country to serve clients.
- 3 previous** projects for higher education clients in Oregon.
- Conducted **over 7,800 projects** throughout the U.S. and around the world.

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## HIGHER EDUCATION CLIENTS

CLIENTS	414 (WITH 737 PROJECTS)
<b>ORGANIZATIONAL TYPE</b>	
TWO-YEAR	69
FOUR-YEAR	223
GOVERNMENT	17
ORGANIZATIONS	50
STATE SYSTEM/BOARD	55
<b>PRIVATE/PUBLIC</b>	
PRIVATE	80
PUBLIC	334

**Washington State Board for Community and Technical Colleges** *Update of 2008 Comparative Compensation Analysis Study; Faculty and Administrator Salary Study*

**Texas State Technical College** *System-wide Consulting Services for Classification and Compensation Study*

**University of Montevallo** *Classification/Compensation and Performance Evaluation Consulting; Faculty Compensation Study*

**Kennesaw State University** *Faculty Salary Survey; Faculty Salary Update*


**Montgomery College** *Assessment of the Office of Business Services, Assessment of the Office of the President, Student Services Organization Assessment Services*


**Northeast Iowa Community College** *Non-Faculty Classification and Compensation Study*

**Iowa Valley Community College** *District Non-Faculty Classification and Compensation Study*

**Texas A&M University - Texarkana** *Classification and Compensation Study*

**University of Hawaii System** *Executive Compensation Study*






## CONSULTING TEAM



**NANCY STEPINA-ROBISON**  
Vice President, Human Capital

- **Thirty** years of related experience in human resources management, performance reviews, information technology systems, planning, and state/federal government relations.
- Serves as a guest lecturer at the Florida State University, College of Business in HR and labor relations.
- Former Vice Chancellor for the State University System of Florida.




**ROBERT HOLLOWAY**  
Senior Consultant

- Compensation modeling and implementation strategy development.
- Economic and demographic research and analysis, and survey development and administration.
- Management and organization reviews and feasibility studies.

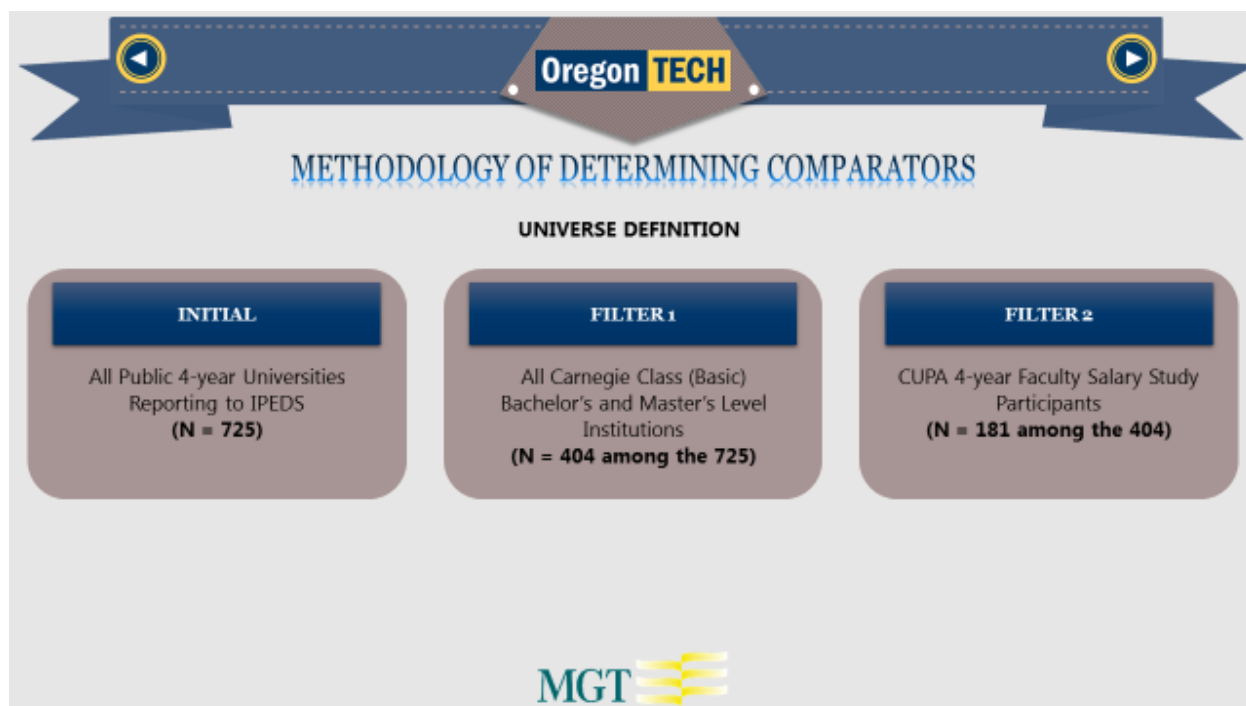



**SHEENA HORTON, PMP**  
Senior Analyst

- Project management and analytical assessments.
- Classification and compensation studies.
- Survey design and implementation.
- Program and performance evaluations, needs assessments, quality assurance, and efficiency reviews.










## METHODOLOGY OF DETERMINING COMPARATORS

**PEER SCORING:** The basic categories and specific metrics included within the model are shown below and on the following slide.

Size 10% of total score	Selectivity 10% of total score	Resources 15% of total score
1) Total Expenditures (excluding Capital Outlays) 2) Estimated Total FTE Enrollment This weight reflects a limited emphasis, with deference given to more program-specific size definitions and resource measures that are typically more relevant to faculty recruitment. (Effectively, we did not want to penalize or ignore engineering faculty salaries at "Institution X," due to that institution operating a particularly large college of education alongside a fairly comparable engineering program.)	1) Composite SAC/ACT Midpoint Percentile This measures uses SAT score as a default, but ACT score where no SAT is present, as proxy for selectivity.	1) Total Expenditures per FTE Student 2) Total Expenditures Per Degree Awarded 3) Endowment per FTE Student We used these parameters to identify the level of resources available for institutions to invest in instruction.




## METHODOLOGY OF DETERMINING COMPARATORS

Institutional Characteristics 15% of total score	Program Offerings 50% of total score
1) Percent of Degrees/Awards less than Bachelors 2) Percent of Degrees/Awards greater than Bachelor's Instruction Expenditure as percent of Instruction/Research/Public Service Identifies institutions that have a higher emphasis on bachelor degree production, with some level of associate degree and certificate production, but limited graduate emphasis. Also measures similarity to OIT's emphasis on instruction, as opposed to research or public service.	1) Individual Proportions of Total Bachelor's Degree 2) Absolute Numbers of Bachelor's degrees in Engineering, Engineering Technology, and Health Professions 3) Overall Program Composition – the institution's dual emphasis/production of Engineering/Engineering Tech and Health Professions bachelor's degrees. Relies on CIP codes to identify institutions producing engineering, engineering tech, and health professions degrees at the bachelor's level. Additional weight was added to those institutions that had a positive correlation across both engineering/engineering tech AND health programs. NOTE: Health Professions excludes Nursing CIP codes.





**Oregon TECH**

## NEXT STEPS

- ✓ *Development of a compensation model*
- ✓ *Pulling in data from CUPA Data-On -Demand*
- ✓ *Assessing results/ issues related to results*
- ✓ *Assessing the value of benefits as part of compensation*
- ✓ *Draft report for OIT consideration*
- ✓ *Final report*

**MGT**

## PEER SELECTION RESULTS - REVISED 5/24/16

## CUPA-HR 4-Year Faculty Salary Survey Respondents

Institution	Proximity Score	CUPA Resp. Rank (n=181)	Rank (n=404)	Inst. Size	Program Size			Resources
				Estimated FTE Students	# of CIP 14. Engineering Bachelor's	# of CIP 15. Engin. Tech. Bachelor's	# of CIP 51. Health Prof.* Bachelor's	Expend. per Degree/Award
Oregon Institute of Technology				4,260	61	119	298	\$89,520
	Peer Maximum	33.86		36,739	159	119	294	\$122,637
	Peer Average	27.27		10,264	25	46	120	\$80,295
	Peer Minimum	24.36		2,740	0	0	0	\$67,761
Western Carolina University	33.86	1	1	10,382	9	79	176	\$80,448
Midwestern State University	32.74	2	999	5,874	21	0	179	\$74,643
Indiana University-Purdue University-Fort Wayne	31.03	3	2	13,214	61	75	67	\$77,616
Slippery Rock University of Pennsylvania	30.61	4	999	8,495	0	83	276	\$70,914
University of Southern Indiana	29.49	5	3	9,364	41	13	246	\$70,449
Central Connecticut State University	29.13	6	4	12,037	36	119	n/a	\$84,266
Keene State College	28.66	7	5	4,957	0	117	82	\$85,409
Humboldt State University	27.68	8	999	8,485	54	0	0	\$83,374
Morehead State University	27.61	9	6	11,052	0	43	52	\$84,744
Millersville University of Pennsylvania	27.02	10	999	8,047	0	112	n/a	\$89,062
Boise State University	26.87	11	7	22,227	159	0	n/a	\$87,856
New Mexico Highlands University	26.85	12	999	3,546	0	0	117	\$75,223
Armstrong State University	26.75	13	8	7,094	0	0	230	\$73,233
Fairmont State University	26.25	14	999	4,035	0	66	34	\$78,218
Western Kentucky University	26.00	15	9	20,171	67	39	n/a	\$76,601
The University of Texas at Tyler	25.93	16	10	8,036	57	30	26	\$78,012
University of Central Arkansas	25.63	17	11	11,698	0	0	261	\$81,073
Murray State University	25.51	18	12	11,207	7	94	n/a	\$81,620
Shepherd University	25.34	19	13	4,041	9	0	0	\$74,002
Missouri Southern State University	25.23	20	999	5,613	0	4	65	\$67,761
SUNY Institute of Technology at Utica-Rome	25.22	21	999	2,740	14	75	32	\$84,546
Southeast Missouri State University	25.02	22	14	12,087	5	116	n/a	\$79,921
CUNY Lehman College	24.59	23	999	12,398	0	0	294	\$72,552
University of Montevallo	24.45	24	15	3,070	0	0	27	\$122,637
Texas State University	24.36	25	16	36,739	80	86	n/a	\$73,188

\*Excludes nursing degrees (CIP 51.16, 51.38, 51.39).

OIT\_PeerScoring\_20160524\SelectionResult

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## CUPA-HR Non-Respondents/Data Collection Required

Institution	Proximity Score	CUPA Resp. Rank (n=181)	Rank (n=404)	Inst. Size	Program Size			Resources
				Estimated FTE Students	# of CIP 14. Engineering Bachelor's	# of CIP 15. Engin. Tech. Bachelor's	# of CIP 51. Health Prof.* Bachelor's	Expend. per Degree/Award
Oregon Institute of Technology				4,260	61	119	298	\$89,520
	Peer Maximum	24.23		12,002	68	103	232	\$163,848
	Peer Average	23.38		5,497	10	19	78	\$73,732
	Peer Minimum	22.63		1,497	0	0	0	\$0
University of Maine at Farmington	24.23	26	17	1,960	0	0	51	\$86,222
Massachusetts Maritime Academy	24.06	27	999	1,497	68	48	0	\$163,848
SUNY College at Brockport	24.04	28	18	8,106	0	0	232	\$71,762
Western Oregon University	23.69	29	19	6,049	0	0	56	\$80,027
Lock Haven University	23.52	30	999	4,917	0	0	150	\$76,588
University of Pittsburgh-Johnstown	23.45	31	999	2,869	0	77	n/a	\$0
Arkansas Tech University	23.22	32	20	12,002	57	0	42	\$52,741
University of Puerto Rico-Carolina	23.15	33	999	3,843	0	0	n/a	\$85,799
Columbus State University	23.02	34	21	8,192	0	0	55	\$75,358
Minnesota State University Moorhead	22.89	35	22	6,306	0	0	70	DNR
Worcester State University	22.68	36	23	6,350	0	0	125	\$48,584
Southeastern Oklahoma State University	22.63	37	999	3,878	0	103	0	\$70,120
Northern Kentucky University	22.48	38	24	15,090	0	77	n/a	\$75,135
McNeese State University	22.48	39	25	8,237	62	14	36	\$59,100

\*Excludes nursing degrees (CIP 51.16, 51.38, 51.39).