

Docket Item:

2017-19 Public University Capital Construction Prioritization

Summary:

The 2017-19 Agency Request Budget (ARB) development process included an opportunity for public universities to request funding for capital construction projects, including state-paid debt (XI-Q, XI-G, Lottery bond programs) and state-backed, university-paid debt (XI-F bond program). In recognition of the limited resource nature of state-funded debt service, a prioritization process was established by the Commission for projects proposed to be backed in whole, or in part, by state-paid debt.

Staff's application of that prioritization process became the basis of the prioritized capital project proposal list adopted by the HECC in August and included in the ARB. At that time, the prioritized list included requests for all known projects for which state-paid or state-backed debt was being sought in the 2017-19 biennium. Since completion of the ARB, an additional 2017-19 project proposal and related state-backed debt request was announced. Staff has reviewed the proposal and prepared a recommendation priority rank of the new project within the existing prioritized 2017-19 ARB project list.

Docket Material

As part of the 2017-19 budget development process, HECC University Budget & Finance staff requested capital project submissions from the seven public universities. In conjunction with guidance issued for the compilation of these project submissions, staff requested the Vice Presidents for Finance and Administration (VPFA) of the seven public institutions engage in a process to separate all university capital requests into priority tiers, with "Tier 1" consisting of the highest priority project requests.

Sixteen projects were included in the Tier 1 list prepared by the VPFAs. In addition to these Tier 1 projects, a supplemental capital request submission opportunity was opened in response to guidance issued by Governor Brown through a letter to the HECC dated June 7. This guidance specified that all university capital projects for which funding will be sought for 2017-19 should be submitted to the HECC for review and prioritization alongside the Tier 1 requests. Three such project proposals were submitted through this process.

Staff evaluated all 19 requests by applying a university capital prioritization rubric adopted by the Funding and Achievement Subcommittee at its April 13, 2016 meeting. The resultant prioritized list formed the basis of a staff recommendation, which was adopted in an amended form by the Funding and Achievement Subcommittee on August 10, 2016 and the full HECC as part of the ARB on August 11, 2016.

On October 17, 2016 the University of Oregon announced a \$1 billion initiative to build the Phil and Penny Knight Campus for Accelerating Scientific Impact, made possible by a \$500 million gift to the University. As part of this effort, UO is requesting \$100 million in state-paid Article XI-G bonds in the 2017-19 biennium, matched by \$100 million in University funds. Combined, these resources will be used to construct two 75,000 square-foot buildings in Eugene to house core scientific facilities and more than a dozen labs with associated administrative and research support spaces, faculty and graduate student offices, and conference spaces.

Consistent with Governor Brown's June 7 guidance that the HECC review and rank all 2017-19 university capital requests, staff has reviewed the Knight Campus proposal and applied the same scoring rubric to it that was used to rank the 19 university capital requests included in the ARB. Presented for Commission review and consideration is a revised prioritized capital project list that includes staff's recommended insertion of the Knight Campus among the 16 Tier 1 project requests and three supplemental project requests that are included in the ARB.

Staff Recommendation:

Accept the amended 2017-19 public university capital construction prioritization as presented by staff.

Prioritized 2017-19 University Capital Construction Requests Summary

Priority Rank	Project Name	University	Project Total	University Funding	State Funding
1	Capital improvement and renewal	System wide	\$65,000,000	\$0	\$65,000,000
Capital improvements, capital renewals, compliance with building codes, safety and accessibility improvements. The \$65,000,000 funding level will provide universities the opportunity to generate operational savings and appropriately invest in existing facilities and infrastructure.					
2	4th & Montgomery for Graduate School of Education	PSU	\$103,000,000	\$58,000,000	\$45,000,000
The 4th & Montgomery Project for the Graduate School of Education will result in a new, approximately 205,000 sq. ft., seven to nine story, mixed use building. The project includes partnership commitments from Portland Community College, City of Portland and an educational non-profit organization.					
3	Gilkey Hall Renovation	OSU	\$5,000,000	\$2,000,000	\$3,000,000
The Gilkey Hall renovation project will provide a general interior space renewal for the academic directors for Undergraduate Studies, the Academic Success Center, the Writing Center, Computer Lab, and OSU International Programs. The project scope includes upgrades to the fire and life safety, plumbing and HVAC systems.					
4	Oregon Quality Foods & Beverage Center	OSU	\$18,000,000	\$9,000,000	\$9,000,000
The Oregon Quality Foods and Beverages Initiative will create three new research and learning pilot facilities, for Brewing Science, Wine Science and Dairy Science.					
5	Information Technology Equipment Facility	EOU	\$1,200,000	\$0	\$1,200,000
Construction of a new 3,000 SF technology infrastructure equipment facility serving as the campus hub for all communication and network infrastructure, the facility will include a temperature and humidity controlled server room; fiber distribution rack space; equipment shop space; staff office and support space; equipment and general storage; equipment staging space.					
6	Cordley Hall Renovation Phase I	OSU	\$15,000,000	\$0	\$15,000,000
The Cordley Hall renovation project will include mechanical and electrical systems replacement, upgraded fire and life safety systems including a fire suppression system and modern fire alarms with strobes for the 236,317 square foot research building.					
7	Center For Excellence In Engineering And Technology/Renovation Of Cornett Hall	OIT	\$42,000,000	\$2,000,000	\$40,000,000
The Center for Excellence in Engineering and Technology will feature approximately 61,000 GSF of classroom and laboratory space, 12,000 GSF of office space, 2,000 GSF IT Data Center, and 15,000 GSF of common space. This project will also renovate the Cornett Hall building envelope, mechanical systems, emergency egress ADA accessibility, and seismic improvements.					
8	Classroom and Faculty Office Building	UO	\$85,000,000	\$30,000,000	\$55,000,000
The University Classroom and Faculty Office Building project will be a four-to-five story, approximately 105,000-gsf new building built in the academic core of campus. The space will roughly break down as follows: classrooms 60%, faculty offices 20%; other offices and other support and technical work areas 20%. Additionally, approximately 30,000 GSF of other core academic space will be renovated.					
9	Central Hall Modernization	SOU	\$6,000,000	\$0	\$6,000,000
The Central Hall Modernization project includes replacing the 60-year-old HVAC system, electrical systems, upgrades to the fire alarm system to meet current fire code requirements, and address water penetration of the exterior concrete façade. Additionally, the building needs significant upgrades for current ADA compliance.					
10	Oregon Military Academy – Phase 2 Renovation	WOU	\$8,200,000	\$500,000	\$7,700,000
The scope of the OMA phase 2 renovation project encompasses a redesign and repurpose of the existing military training facility, located within the north perimeter of Western's campus for year-round academic program use, upgrade ADA accessibility throughout, and modernize mechanical, electrical, and plumbing systems.					

Priority Rank	Project Name	University	Project Total	University Funding	State Funding
11	Knights Campus for Accelerating Scientific Impact	UO	\$200,000,000	\$100,000,000	\$100,000,000
Construction of two 75,000 SF buildings to house core scientific facilities and more than a dozen labs with associated administrative and research support spaces, faculty and graduate student offices, and conference spaces. Available to both researchers and Oregon companies, the lab spaces will include cutting-edge scientific equipment. The Knight Campus will connect to the main campus by sky bridge over Franklin Boulevard.					
12	Information Technology Center – Phase 3 Building Renovation	WOU	\$6,000,000	\$500,000	\$5,500,000
The third and final phase of renovation of the Information Technology Center will address significant life safety concerns with seismic improvements to the structure, replace antiquated mechanical, electrical and plumbing systems, and remodel the first two floors of the building.					
13	Loso Hall Renovation, Phase One	EOU	\$5,500,000	\$0	\$5,500,000
The Loso Hall renovation will repair and replace theater department performance and practice spaces, equipment, lighting and staging systems, stages and support spaces and make accessibility improvements in theater seating and building access.					
14	Fairbanks Hall Renovation	OSU	\$11,000,000	\$0	\$11,000,000
The renovation of Fairbanks Hall, OSU's second-oldest building will create critically needed space in the currently unutilized fourth floor; reduce building energy costs with planned energy conservation measures; and make the building fully accessible.					
15	Athletics, Physical Activity & Health Field House	EOU	\$8,000,000	\$2,000,000	\$6,000,000
Construction of a 30,000 SF field house to support EOU Athletics, Physical Activity & Health education, EOU's Outdoor Program and Outdoor Recreation and Leadership minor, and student recreation.					
16	Cascades Expansion- Site Reclamation	OSU-Cascades	\$9,000,000	\$0	\$9,000,000
Site restoration will include partial fill and compaction of the pumice mine bringing the site to a condition ready for infrastructure development. The property, a 46-acre pumice mine site is adjacent to OSU-Cascades' 10-acre campus and is near downtown Bend.					
17	Cascades Expansion- Campus Infrastructure	OSU-Cascades	\$11,000,000	\$0	\$11,000,000
The Campus infrastructure project includes new roadways, multi-modal pathways, parking, storm water facilities, utilities and building pads in order to accommodate the future building and open space development per the Long Range Development Plan.					
18	Cascades Expansion- Academic Building 2	OSU-Cascades	\$49,000,000	\$10,000,000	\$39,000,000
The new 55,000 square foot academic building will include lab space for bio-sciences, kinesiology and engineering, general purpose classrooms, faculty offices, and other learning support and research spaces. Academic Building 2 will include the development of an outdoor learning and study space. The project will also include structured and surface parking in order to support enrollment growth.					
19	Cascades Expansion- Student Success Center	OSU-Cascades	\$15,000,000	\$5,000,000	\$10,000,000
A new 22,500 GSF three-story building including a combination of flexible use spaces for classroom, learning commons or tutoring space, advising or counseling space, arts presentation space, informal gathering spaces, maker spaces, and student involvement spaces (e.g. multicultural/ social/outdoor programs).					
20	Cascades Graduate & Research Center Renovation	OSU-Cascades	\$490,000	\$0	\$490,000
The renovation of the Graduate and Research Center will create office spaces for teaching and research faculty at OSU-Cascades to accommodate the increase in faculty and staff. Approximately 60% of the Graduate and Research Center was renovated when the building was originally purchased in 2012.					

Article XI-F (University Paid) Bond Requests

Project Name	University	Project Total	University Funding	State Funding
Track & Field Facilities Restoration Project	EOU	\$750,000	\$750,000	\$0
<p>This project will include removal of the existing track & field athletic surfaces along with the asphalt and concrete underlayments. A new rock base and drainage system will be installed with a permeable asphalt base surface. New permeable track & field competition athletic surfaces will be installed over the permeable asphalt base.</p>				
University Center Building land	PSU	\$15,000,000	\$15,000,000	\$0
<p>PSU is requesting \$15 million authorization for the purchase of land under the university-owned University Center building. The 2015-17 Legislatively Approved Budget reauthorized \$10,220,000 Article XI-F (1) bonds for the purchase originally authorized in the 2013-15 Legislatively Approved Budget. PSU was unable to execute a purchase of the land since the authorization and therefore requests reauthorization along with an additional \$5,000,000 in bonding authority.</p>				
12th and Market Residence Hall	PSU	\$53,500,000	\$53,500,000	\$0
<p>PSU proposes construction of a new 6 story housing building with 201 units and 11,000 sq. ft. for dining services.</p>				
Student Recreation Center	OIT	\$5,000,000	\$5,000,000	\$0
<p>The concept is to re-use the existing Athletics Building lower level for a new Recreation Center. The project would include updating existing locker rooms and showers, a multi-use studio, expanding the existing fitness area and restoration of the tennis courts.</p>				

Project Financial Summary												
Priority Rank	Institution	Project	State-Paid Debt				State Paid Cumulative Total	Campus Paid Debt & Resources			Total	Cumulative Total (All Prioritized Projects)
			XI-G	XI-Q	Lottery Bonds	State-Paid Total		XI-F	Gifts/Other	Campus Total		
1	All	Capital Improvement & Repair	\$ -	\$ 65,000,000	\$ -	\$ 65,000,000	\$ 65,000,000	\$ -	\$ -	\$ -	\$ 65,000,000	\$ 65,000,000
2	PSU	4th & Montgomery for Graduate School of Education	\$ 36,000,000	\$ 9,000,000	\$ -	\$ 45,000,000	\$ 110,000,000	\$ 6,000,000	\$ 52,000,000	\$ 58,000,000	\$ 103,000,000	\$ 168,000,000
3	OSU	Gilkey Hall Renovation	\$ 2,000,000	\$ 1,000,000	\$ -	\$ 3,000,000	\$ 113,000,000	\$ -	\$ 2,000,000	\$ 2,000,000	\$ 5,000,000	\$ 173,000,000
4	OSU	Oregon Quality Foods & Beverage Center	\$ 9,000,000	\$ -	\$ -	\$ 9,000,000	\$ 122,000,000	\$ -	\$ 9,000,000	\$ 9,000,000	\$ 18,000,000	\$ 191,000,000
5	EOU	Information Technology Equipment Facility	\$ -	\$ 1,200,000	\$ -	\$ 1,200,000	\$ 123,200,000	\$ -	\$ -	\$ -	\$ 1,200,000	\$ 192,200,000
6	OSU	Cordley Hall Renovation Phase I	\$ -	\$ 15,000,000	\$ -	\$ 15,000,000	\$ 138,200,000	\$ -	\$ -	\$ -	\$ 15,000,000	\$ 207,200,000
7	OIT	Center For Excellence In Engineering And Technology/Renovation Of Cornett Hall	\$ 2,000,000	\$ 38,000,000	\$ -	\$ 40,000,000	\$ 178,200,000	\$ -	\$ 2,000,000	\$ 2,000,000	\$ 42,000,000	\$ 249,200,000
8	UO	Classroom and Faculty Office Building	\$ 30,000,000	\$ 25,000,000	\$ -	\$ 55,000,000	\$ 233,200,000	\$ -	\$ 30,000,000	\$ 30,000,000	\$ 85,000,000	\$ 334,200,000
9	SOU	Central Hall Modernization	\$ -	\$ 6,000,000	\$ -	\$ 6,000,000	\$ 239,200,000	\$ -	\$ -	\$ -	\$ 6,000,000	\$ 340,200,000
10	WOU	Oregon Military Academy – Phase 2 Renovation	\$ 500,000	\$ 7,200,000	\$ -	\$ 7,700,000	\$ 246,900,000	\$ -	\$ 500,000	\$ 500,000	\$ 8,200,000	\$ 348,400,000
11	UO	Knight Campus for Accelerating Scientific Impact	\$ 100,000,000	\$ -	\$ -	\$ 100,000,000	\$ 346,900,000	\$ -	\$ 100,000,000	\$ 100,000,000	\$ 200,000,000	\$ 548,400,000
12	WOU	Information Technology Center – Phase 3 Building Renovation	\$ 500,000	\$ 5,000,000	\$ -	\$ 5,500,000	\$ 352,400,000	\$ -	\$ 500,000	\$ 500,000	\$ 6,000,000	\$ 554,400,000
13	EOU	Loso Hall Renovation, Phase One	\$ -	\$ 5,500,000	\$ -	\$ 5,500,000	\$ 357,900,000	\$ -	\$ -	\$ -	\$ 5,500,000	\$ 559,900,000
14	OSU	Fairbanks Hall Renovation	\$ -	\$ 11,000,000	\$ -	\$ 11,000,000	\$ 368,900,000	\$ -	\$ -	\$ -	\$ 11,000,000	\$ 570,900,000
15	EOU	Athletics, Physical Activity & Health Field House	\$ 2,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 374,900,000	\$ -	\$ 2,000,000	\$ 2,000,000	\$ 8,000,000	\$ 578,900,000
16	OSUC	Cascades Expansion- a. Site Reclamation	\$ -	\$ 9,000,000	\$ -	\$ 9,000,000	\$ 443,900,000	\$ -	\$ -	\$ -	\$ 9,000,000	\$ 662,900,000
17	OSUC	Cascades Expansion- b. Campus Infrastructure	\$ -	\$ 11,000,000	\$ -	\$ 11,000,000	\$ 443,900,000	\$ -	\$ -	\$ -	\$ 11,000,000	\$ 662,900,000
18	OSUC	Cascades Expansion- c. Academic Building 2	\$ 10,000,000	\$ 29,000,000	\$ -	\$ 39,000,000	\$ 443,900,000	\$ -	\$ 10,000,000	\$ 10,000,000	\$ 49,000,000	\$ 662,900,000
19	OSUC	Cascades Expansion- d. Student Success Center	\$ 5,000,000	\$ 5,000,000	\$ -	\$ 10,000,000	\$ 443,900,000	\$ -	\$ 5,000,000	\$ 5,000,000	\$ 15,000,000	\$ 662,900,000
19	OSUC	Cascades Graduate & Research Center Renovation	\$ -	\$ 490,000	\$ -	\$ 490,000	\$ 444,390,000	\$ -	\$ -	\$ -	\$ 490,000	\$ 663,390,000
Total (All Projects)			\$ 197,000,000	\$ 243,390,000	\$ 4,000,000	\$ 444,390,000	\$ 444,390,000	\$ 6,000,000	\$ 213,000,000	\$ 219,000,000	\$ 663,390,000	\$ 663,390,000
N/A	EOU	Track and Field Facilities Restoration Project	\$ -	\$ -	\$ -	\$ -	N/A	\$ 750,000	\$ -	\$ 750,000	\$ 750,000	N/A
N/A	PSU	University Center Building Land Purchase	\$ -	\$ -	\$ -	\$ -	N/A	\$ 15,000,000	\$ -	\$ 15,000,000	\$ 15,000,000	N/A
N/A	PSU	12th and Market Resident Hall	\$ -	\$ -	\$ -	\$ -	N/A	\$ 53,500,000	\$ -	\$ 53,500,000	\$ 53,500,000	N/A
N/A	OIT	Student Recreation Center	\$ -	\$ -	\$ -	\$ -	N/A	\$ 5,000,000	\$ -	\$ 5,000,000	\$ 5,000,000	N/A
Total (All Projects)			\$ -	\$ -	\$ -	\$ -	N/A	\$ 74,250,000	\$ -	\$ 74,250,000	\$ 74,250,000	N/A

October 20, 2016

Higher Education Coordinating Commission
775 Court Street NE
Salem, OR 97301

Chair Bryant, Executive Director Cannon, and Members of the Commission,

The University of Oregon is launching the Knight Campus for Accelerating Scientific Impact (Knight Campus), a \$1 billion initiative made possible through an unprecedented cornerstone gift of \$500 million. The gift will be invested in facilities and equipment, endowing faculty and hiring world-class researchers, vastly increasing UO's sponsored research funding, and training undergraduate and graduate students for the innovation economy and workforce.

The Knight Campus is an ambitious vision that comes directly from the faculty and is grounded in one of the UO's strengths—interdisciplinary scientific research. The Campus will create an ecosystem of translational research to fast-track the process of turning ideas and discoveries into innovations and applications that improve the human condition. The possibilities are limitless.

UO is requesting \$100 million in Article XI-G bonds in the 2017-19 biennium to jumpstart the profound impact of the Knight Campus. In accordance with Governor Brown's letter dated June 7, 2016, the university is formally submitting this request to the Commission for its consideration and evaluation.

As it relates to the scoring and ranking of capital projects, UO's top priority remains the 'Tier One' capital construction project list approved by the HECC in August 2016. This list includes projects for all seven institutions that are critical to their academic and public missions. UO's Classroom and Faculty Office Building is not mutually exclusive from this new request related to the Knight Campus. The classroom building is necessary for us to to increase access, raise graduation rates, enhance student experience, and aid in faculty recruitment and retention.

For the hundreds of undergraduate and graduate students who will work and learn at the Knight Campus, this initiative presents unique opportunities for research and career preparedness, including fostering an ethos of promoting women and minority students in the sciences.

The impact of the Knight Campus will reverberate far beyond UO and Eugene. In addition to fostering collaboration across disciplines on our own campus, the Knight Campus will expand the basis of collaboration for researchers at Oregon Health & Science University, Oregon State University, Portland State University, among others.

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It will also provide an unparalleled engine of economic development for the State of Oregon and the Southern Willamette Valley. During peak construction, the Knight Campus will directly contribute \$99.7 million in annual economic activity to Oregon's economy, which will support more than 1,300 jobs. When fully operational, the Knight Campus will drive nearly \$80 million in annual economic activity statewide and support more than 750 jobs. These estimates of economic impact *do not* include the value of start-up and spin-off companies which are expected to be generated.

We recognize this request comes late in the budget development process and the complications the timing may pose for the Commission. We urge you, however, not to miss capitalizing upon this moment. The broad benefit to both higher education and economic development are of such a magnitude that we could not wait for future budget cycles to begin the work.

Partnership with the state would ensure that the UO can build world-class research and teaching facilities, freeing up more of the gift to endow faculty positions, equip them with the most advanced, shared tools and instrumentation, and contribute to the local and regional economy in a way like never before.

This opportunity, in conjunction with the already approved capital project list, warrants both the Commission and the Governor supporting investments for university capital construction above historic funding levels. We look forward to the Commission's evaluation of this proposal and the opportunity to discuss the project in further detail.

Sincerely,



Michael H. Schill
President, University of Oregon

**Capital Construction Project Budget Request:
Knight Campus for Accelerating Scientific Impact, University of Oregon**
October 20, 2016

1. *Short working title for the project.*

Phil and Penny Knight Campus for Accelerating Scientific Impact (Knight Campus)

2. *A narrative description and justification for the project.*

The University of Oregon is launching a \$1 billion initiative to build the Phil and Penny Knight Campus for Accelerating Scientific Impact. This initiative is made possible through an unprecedented cornerstone gift of \$500 million to the University. The gift will be invested in facilities and equipment, as outlined below, as well as in faculty and research staff, new graduate degree programs, training and internship opportunities for both undergraduate and graduate students, and a seed fund that will generate millions of dollars annually to help UO researchers compete for federal funding, start new companies, and provide grants for translational research (i.e., research that supports commercialization efforts).

The University is requesting \$100 million in Article XI-G bonds in the 2017-19 biennium which, along with the University's match of \$100 million, will be used to:

- Construct two 75,000 square-foot buildings that will comprise the heart of the Knight Campus just north of Franklin Boulevard;
- Equip the Knight Campus with state-of-the-art, shared scientific instruments that can be used by researchers and Oregon companies; and
- Construct a sky bridge that will connect the Knight Campus to the main campus, enabling students, faculty, and staff to safely cross Franklin Boulevard. Both the new facility and the sky bridge will enhance Franklin as a gateway to Eugene and the UO and assist with the city's efforts to improve traffic flow and increase the navigability of the area.

3. *A detailed description of the nature of the project and what will be constructed, including appropriate metrics (acres, square feet, number of stories, classrooms, labs, etc.).*

In phase one of the development of the Knight Campus, \$200 million will be invested in the development of two major science buildings, the procurement and installation of cutting edge scientific equipment, and the creation of a sky bridge connecting the new buildings to the main campus.

Each building will be approximately 75,000 gross-square-feet and four stories high. Each will house shared core scientific facilities and more than a dozen labs replete with space for administrative and research support, faculty and graduate student offices, as well as collaboration and conference spaces. In phase two, we expect to build a third science building north of Franklin.

The shared core facilities are comprised of cutting-edge scientific equipment (e.g., for imaging, sequencing, and high throughput processing) that can be accessed by both researchers and local Oregon companies.

Improvements made to Franklin Boulevard will include the creation of a sky bridge that connects the main campus to the Knight Campus and the university’s north campus area, providing a safer means for pedestrians to cross busy, six-lane Franklin Boulevard. Additional transportation improvements are anticipated, in coordination with the Oregon Department of Transportation and the City of Eugene. Efforts will also be made to enhance the attractiveness of this gateway into Eugene and the UO campus.

4. *A description of any clear and urgent life, health and safety problems that will be addressed by the project and an indication of the degree to which the problems are resolved.*

In addition to improving pedestrian safety, this project allows the University to address water quality issues affecting the Mill Race, which runs north of the building site, as well as remediate any potential soil contamination from previous land owners. The sky bridge, specifically, provides a means for the University to address critical utilities reliability and capacity issues.

The prospective improvements to Franklin Boulevard provide the university with an opportunity to partner with the City of Eugene, which has recently secured a grant to redesign Franklin Boulevard in favor of improving traffic flow and navigability.

5. *An estimate of the total project cost regardless of funding request. Include design and planning, hard and soft construction costs, land and real property acquisition, infrastructure development, furnishings and fixtures, contingencies, etc.*

\$200 million, half of which will be provided via XI-G bonds and the other half through donor match to the University. This includes design and planning, all construction costs, real property acquisition, infrastructure development, equipment, furnishings and fixtures, and contingencies. A cornerstone gift to the initiative will also provide an additional \$400 million of funds for activities and programming.

6. *A detailed funding request.*

a. Complete the following table:

	General Fund /Lottery Funds	Article XI-G Bonds	Article XI- F (1) Bonds	Lottery Bonds	SELP Loans	Seismic Grants	Article XI-Q Bonds	Total
Total								
State-paid debt		\$100 million						\$100 million
Campus-paid debt								

- b. For Article XI-G bonds, identify the amount and source of the constitutionally-required 50% match.*

The G bonds will be fully matched by donor gifts.

c. *For additional required project funding (beyond requested state funds and Article XI-G match), identify the amount and source of the funding. [This amount, combined amounts in items 6a and 6b should equal the total project cost in item 5.]*

n/a

d. *Identify the revenue sources that will be used to pay campus-paid debt.*

n/a

7. *The expected project start and completion dates.*

October 2016 through December 2020

8. *The state and/or institutional goals that the project is intended to address (mark all that apply). Specify the goals and describe how the project's impact on the goals will be measured and when the impacts can be observed.*

40/40/20 goal (identify which parts of the goal will be addressed...)

This project supports the HECC's third strategy, "Pathways," by "promoting degree pathways and related initiatives that increase opportunities for postsecondary students to build on career-oriented education and workplace experience; and creating better connections between higher education and training and employer needs."

The Knight Campus will increase opportunities for undergraduate and graduate students as well as high school students interested in careers in science and industry to experience research, including translational research, and have access to state-of-the-art instruments and core facilities. In particular, the Knight Campus will provide long term support and the opportunity for expansion of our graduate internship program, which directly places students with high tech employers across the state. Although initial steps will focus on graduate education, the Knight Campus will lead to new undergraduate programs as well, including degrees in applied science.

Statewide economic development or workforce goal (identify the goal or goals addressed)

This project clearly supports the HECC's sixth strategy, "Economic and Community Impact," which is aimed at "developing a structure to prioritize and promote university-led research with tools such as funding-based incentives" and "making investments that support higher education's unique role in promoting the cultural, economic and civic vitality of Oregon."

The Knight Campus is expected to have a significant economic impact that will benefit the citizenry of the state of Oregon and enhance the reputation of the state's education opportunities on a global scale. According to an economic impact analysis prepared by ECONorthwest, the Knight Campus will create an \$177.8 million economic impact during peak construction and create over 1,300 jobs. When the institute reaches a steady state of operations it is expected to generate a total economic impact of over \$79 million annually, support over 750 jobs, and produce \$44.8 million in labor income. In addition, these projections are based only on direct operations of the Knight Campus itself. We anticipate that a number of spin-out

companies will emerge from these efforts that will benefit the economic environment of the South Willamette Valley and beyond.

A partnership with the state allows the University to maximize the endowed faculty that can be hired. Initial conservative estimates show that federally sponsored research grants will increase by at least 30%, bringing an estimated \$30 million a year into the state that currently does not come to Oregon.

In the short-term, construction of the \$200 million campus will provide a large one-time economic boost to the area.

These baseline estimates are conservative. Looking at other similar investments across the country we know that additional economic benefit will occur as discoveries are made, problems are solved and innovations are developed. Any new companies that start up as a result of the initiative will directly benefit the state's economy.

Institutional goal (identify the goal or goals being addressed)

One of the University's primary strategic initiatives is promoting academic excellence through investments in tenure track faculty, graduate education and research. This project, through the hiring of 30 science faculty and their teams (likely close to 300 people in total), will greatly enhance the University's academic footprint in the sciences, enabling the UO to expand opportunities for hundreds of graduate students, post-docs, and undergraduate students to conduct work in the material and life sciences. These students will have the opportunity to engage with top-tier faculty, access and experience state of the art facilities and equipment, and gain first-hand experience conducting original research.

The Knight Campus will have a direct impact on the University's research capacity. It will allow the UO to attract new graduate students, compete well for federal research funding, and foster opportunities to make distinctive and highly significant discoveries. The shared scientific instrumentation housed by the Knight Campus will improve the University's ability to recruit top faculty and it will also make highly advanced tools available to local Oregon companies. The state funding will provide the UO with the ability to better leverage donor resources for academic and entrepreneurial programs, increasing the initiative's impact on student education and training, and allow the University to create a seed fund, which is anticipated to generate millions of dollars annually to help UO researchers be more competitive for federal funding, more successful in starting up new companies, connect the research of existing faculty with the new campus, and provide translational research grants. The Knight Campus will build on the UO's historic strengths in the sciences while connecting to the future of research and discovery.

In addition to fostering collaboration across disciplines, the Knight Campus will also create opportunities for researchers at OHSU, OSU and PSU. A focus on applied and translational sciences provides natural connection points to the strengths of those institutions. Nationally renowned applied scientists will help the state of Oregon as we collectively look to leverage federal research funding. Additionally, equipment and faculty that specialize in big data will be prime partners for researchers at other institutions as they seek to deploy their discoveries to address problems facing the world. Recent initiatives such as the Advanced Wood Products program, a collaboration between OSU and UO, will become the norm.

9. Describe the impact of the project on improving access and success for underrepresented, first generation, rural, and low income students. Describe how the impact of the project on these student groups will be measured and when the impacts can be observed.

Women, students of color, and first generation students are significantly underrepresented in the sciences at institutions across the nation. At UO, however, women comprise 53.5% of undergraduate students majoring in the natural and physical sciences and 35.6% of students pursuing graduate degrees in science fields; students of color make up 29.7% of our undergraduate science majors and 12.7% of graduate students in the sciences; and 27.1% of our science majors are first generation students.¹

Our science faculty go to great lengths to promote and encourage women and minority students in the sciences, and this ethos would extend to the Knight Campus. Continuing to grow programs such as the graduate internship program and those borne out of this initiative will prove to be one of most effective ways to increase minority participation in the sciences. By providing current students with an applied learning setting, we will expose them to environments that will prepare them for careers in the sciences. This experience will connect students from underrepresented groups to employers as well as prepare them to compete in a workforce dominated by men and lacking in minority representation.

¹ Source: http://ir.uoregon.edu/school_college_profile (Fall 2015)

DATE: 17 October, 2016
TO: President Michael Schill, University of Oregon
FROM: John Tapogna and Joel Ainsworth, ECONorthwest
SUBJECT: UNIVERSITY OF OREGON STATEWIDE ECONOMIC EFFECTS OF THE PHIL AND PENNY KNIGHT CAMPUS FOR ACCELERATING SCIENTIFIC IMPACT

Introduction

The University of Oregon (UO) is developing a plan to expand its campus in Eugene through the construction of the Phil and Penny Knight Campus for Accelerating Scientific Impact (Knight Science Campus). This analysis is based on the assumption that UO would receive an endowment of \$1.1 billion, including a \$100 million match from the State of Oregon to complete the project.

This project would facilitate the hiring of new research staff, who in turn would bring additional support staff and new federal grant funding into the community. In the short run, this project would bring in new spending to the community, which would support local jobs and businesses. Over a longer time horizon, UO's initiative for the Knight Science Campus would serve as a driver for economic development in the community and region through new patent and business activities.

This report quantifies a portion of that potential by estimating the economic effects associated with the university's expansion. Universities use economic studies to measure the contribution of their activities to a local or regional economy. In this analysis, we look at the project's contribution to the State of Oregon.

Based on this analysis, we find that:

- During peak construction, the project will directly contribute:
 - \$99.7 million to Oregon's economy, which would support \$177.8 million in total output and 1,304 jobs.
 - This will support \$10.9 million in state and local tax revenues.
- After the project reaches a "steady state" following construction, operation of the initiative will result in the following impact each year:
 - \$43.3 million in direct local annual expenditures, which would support \$79.4 million in statewide output and 756 jobs.
 - We estimate that these expenditures will support an additional \$6.7 million in annual tax revenue for state and local governments.

The Investment, The University, and the Statewide Economy

The university's initiative is an important development for the state and the Eugene-Springfield metropolitan area. UO plays a large, multidimensional role in the regional economy. It attracts students, hires skilled faculty and staff, purchases goods and services from local vendors, develops real estate, and incubates new business ventures.

With this investment, the university embarks on a focused expansion of these activities. The strategy involves attracting a number of respected faculty in the life and material sciences who will transfer and expand research programs, hire staff, elevate the volume and quality of scholarly publishing, accelerate the pace of scientific discovery, boost patent activity, and launch related businesses.

The university is well positioned to execute on the strategy. Its membership in the Association of American Universities, highly ranked biology doctorate program, established set of research centers and institutes, and attractive West Coast location work in its favor. And, the investment is of sufficient size to support a flow of quality recruits.

If implemented well, the investment should advance scientific discovery, strengthen collaborative ties between the University and other top research centers, and make an important contribution to the area's economic development throughout the next decade.

Regional Economy and the University's Role in the Traded Sector¹

Regional economies are built on a foundation of four forms of capital: human, natural, physical, and social. Human capital is the collection of knowledge and skills held by a region's population. Natural capital is the area's endowment of natural resources and amenities. Physical capital is the infrastructure that facilitates productivity and social capital is a measure of human networks and relationships, civic engagement, and volunteerism.

Sitting on top of the capital are the local sector industries, which provide services, often face-to-face, to people who live in the region. The local sector industries include legal services, banking, utilities, construction, primary and secondary education, restaurants, and entertainment. Together, the capital plus the local sector create a base for the traded sector. The traded sector sells goods and services outside of the region.

UO is a traded sector actor in the Eugene-Springfield regional economy. It provides education to students from across the state, country, and world. And it conducts research on behalf of governments, foundations, businesses, nonprofit agencies, medical institutions, and collaborating universities. Traded sector actors, like the University, are important drivers of regional prosperity. They attract dollars from outside the region, offer highly specialized services, and generally pay higher average wages than local sector actors.

In addition to selling services, UO simultaneously strengthens the area's foundational human, physical, and social capital. The presence of a flagship university increases the likelihood that area residents will earn a college degree. Some of the students who come from elsewhere remain in the region after they earn their degree, which further improves local rates of educational

¹ This section draws from Porter, Michael (2007) *Colleges and Universities and Regional Economic Development: A Strategic Perspective*. Harvard Business School. Cambridge, MA. and Bartik, Timothy J. and George Erickcek (December 2008) *The Local Economic Impact of "Eds & Meds": How Policies to Expand Universities and Hospitals Affect Metropolitan Economies*.

attainment. The university builds and maintains infrastructure. It helps develop the local workforce and serves as an advisor to local governments and businesses.

The university's research identity

UO is one of 62 public and private members of the Association of American Universities (AAU)². AAU was founded in 1900, the University of Oregon joined in 1969, and its most recent invitee—Boston University—was added in 2012. Membership is by invitation only and is based on high quality academic research and scholarship as measured by faculty memberships in the National Academies, the completion of competitively funded research, graduates of doctoral programs, and other factors.

Bolstering the UO's position in the AAU is the strong standing of a number of its doctoral research programs. The National Research Council (NRC) placed eight UO programs in the top quartile nationally³. The UO fared well in the basic sciences, with biology ranked as high as 17th out of 120 programs. And, UO's biology program ranked 18th in citations per publication, which is a measure of the societal impact of scholarly work.

UO has eight members of the prestigious National Academy of Sciences (NAS)⁴. Members are elected to the NAS in recognition of distinguished scientific research. UO's members earned their NAS affiliation through research in biophysics, biochemistry, genetics, chemistry, and cognitive sciences.

Over the years, UO researchers have organized themselves into interdisciplinary research centers and institutes. The oldest, the Oregon Institute of Marine Biology, was established in 1931, and the most recent, the Prevention Science Institute, was started in 2013. The Institute of Molecular Biology (IMB), a pioneering center of interdisciplinary research founded in 1959, brings together biologists, physicists, and chemists. Institute work has led to discoveries on DNA replication, created the first cloned vertebrate, and introduced the zebrafish as a model organism. Four IMB faculty members are also members of the NAS.

Faculty attraction and research productivity

The intent of the investment is to develop a cluster of knowledge creation, strengthen UO's research capacity, advance discoveries in the life and material sciences, and boost local economic activity. The strategy begins with the attraction of a number of top scientists—initially in the life sciences—who would relocate and expand research groups at UO.

Ties between scientific inquiry and local economic activity came into sharper focus with the rapid growth of the U.S. biotechnology industry since the mid 1970s. The location of top scientists was the key determinant of the industry's early growth⁵. Today, it explains the robust

² See <https://www.aau.edu/about/default.aspx?id=16710> accessed August 31, 2016.

³ See <https://uonews.uoregon.edu/archive/news-release/2010/9/university-oregon-rise-survey-doctoral-programs> accessed August 31 2016.

⁴ They are Brian Matthews, Helen Neville, Michael Posner, Geraldine Richmond, Eric Selker, Paul Slovic, Franklin Stahl, and Peter von Hippel.

⁵ Zucker, Lynne G. et. al. (February 1994) *Intellectual Capital and the Birth of U.S. Biotechnology Enterprises*. National Bureau of Economic Research. Cambridge, MA.

biotech activity in the Silicon Valley, Route 128 outside of Boston, and North Carolina’s Research Triangle.

At a different scale, a well-designed faculty attraction strategy would strengthen UO’s academic productivity and support job growth. Top scientists deliver measurable benefits to university departments. A top-tier researcher can increase department-level productivity—as measured by scholarly output—by up to 54 percent, and the effect does not fade out over time⁶. They make departments more productive through their direct research but also attract high quality recruits. In the fields related to those of the top scientist, the productivity of subsequent recruits can increase more than 4-fold⁷. In short, quality researchers attract quality researchers.

Given the positive impacts on subsequent hires, the research suggests that recruitment strategies “may be most effective where a cadre of related incumbents is already present and the organization has a flow of new hiring slots sufficient to take advantage of the improved quality of potential new recruits.”⁸ UO’s strategy aligns with this finding: its initial expansion is focused in an area of recognized strength—the life sciences—and the financial plan foresees the steady hiring through the next decade.

The expansion of UO’s research capacity is an important step for the regional economy. The university is a key traded sector actor in the Southern Willamette Valley. Its expansion directly supports hundreds of middle- and high-wage jobs and reinforces UO’s reputation for academic rigor. But, the vision for this investment is even larger. In addition to growth within the institution, university leaders anticipate—and will actively encourage—research and development spillovers that accelerate private sector job growth.

Measurable Economic Contributions

Economists and policymakers have long sought to quantify and determine the pathways by which education contributes to economic growth. A 2009 study⁹ at Harvard University sought to determine the causal mechanisms by which education investment can make capital and labor more productive. Their research suggests that there is some evidence to support the link between education investment and increased regional growth through research and innovation.

Additionally, they find that well-placed education investment can raise the per capita income of a state. While they caveat that the direct benefit to per capita income is modest, their research concludes that there are broader indirect benefits deriving from the innovation surrounding academic research.

To put these findings into the context of this analysis, a 2008 Brookings report¹⁰ looked at the economic effects of universities to a region’s economy. The report highlights several findings that

⁶ Agrawal, Ajay. (March 2014) *Why Stars Matter*. National Bureau for Economic Research. Cambridge, MA

⁷ Agrawal (2014), page 5

⁸ Agrawal (2014), page 20

⁹ Aghion, P., et al. 2009. “The Causal Impact of Education on Economic Growth: Evidence from the U.S.” Harvard University.

¹⁰ Bartik, T.J. and G. Erickcek. 2008. *The Local Economic Impact of “Eds & Meds”*: How Policies to Expand Universities and Hospitals Affect Metropolitan Economies. Brookings: Washington, D.C

lend themselves to understanding the economic potential of investing in the University of Oregon, including:

- **New income**—Expanding higher education can bring new income into a region. For the University of Oregon, this would include new researchers, support staff, and net new federal grant funding.
- **Increased earnings**—Higher education sector can improve residents’ skills, thereby increasing earnings. Universities also attract new residents through in-migration, which can raise the overall productivity of the population.
- **Business growth**—University research is a catalyst for creating new businesses and expanding existing businesses.

The authors conclude that education institutions can be drivers of economic development in a region. An expansion of these sectors creates economic benefits for workers and business owners in other sectors, as well as state and local taxing jurisdictions. As one of the largest employers in Lane County, the expansion of UO will likely have a broad effect on a variety of economic sectors in the county and across the state.

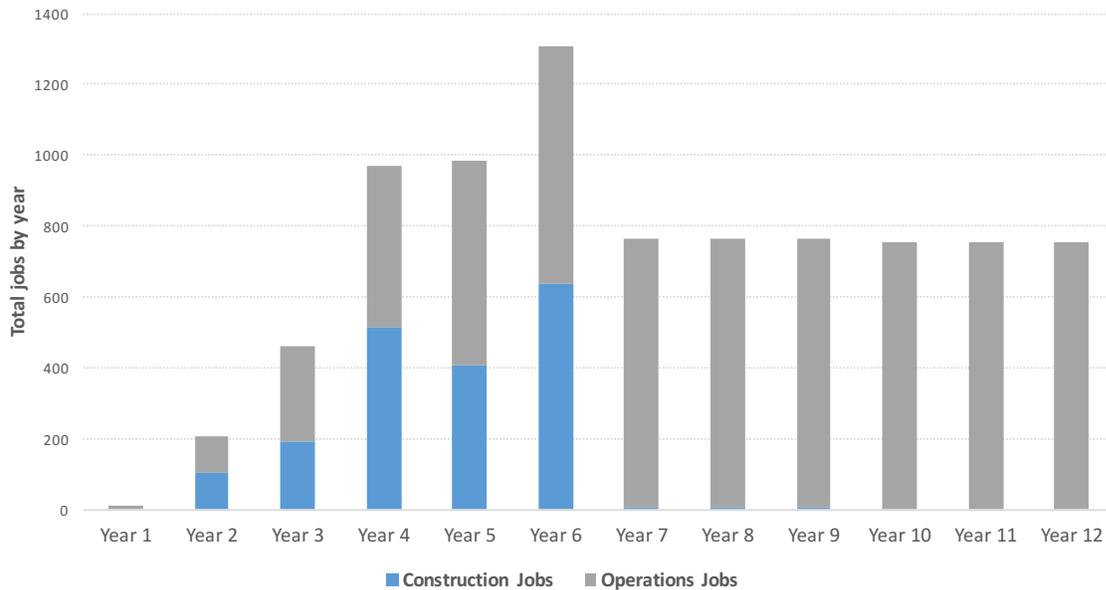
For every million dollars spent by the university, a greater amount of economic activity ripples through the economy, increasing economic output, personal income and jobs throughout the state. This chapter will discuss the data sources used to analyze this economic activity, and will present and discuss the findings of the analysis.

Results of economic contributions analysis

To determine how the investment could lead to economic growth in the region, this analysis estimates the economic contributions of the construction and operations of the project. This includes new direct expenditures from the investment, which includes new construction, and expansion of staff and operation, and new federal grant funding that will flow into the region. The analysis estimates an investment of \$1.1 billion, of which \$100 million is matched from the state.

The project will occur in two phases. The first phase (years 1-9) includes the construction of the new science facilities, along with a ramp up in operations as new faculty and support staff are hired. The second phase (years 10 and beyond) represents a “steady state” in operations after all the anticipated staff have been hired and the construction is complete. Figure 1 illustrates the estimated number of construction and operations jobs over the first twelve years of the project.

Figure 1. Total (direct, indirect, and induced) jobs by year



Source: ECO estimates based on expenditure data provided by UO and IMPLAN software

ECONorthwest used the 2014 version of IMPLAN and built an economic impact model for the State of Oregon. The underlying financial data was provided to ECONorthwest from the UO. ECONorthwest then worked with the university to build the appropriate spending pattern for the university.

UO’s economic contributions were measured in the following areas: staff payroll, goods and services expenditures, capital expenditures, and student expenditures. All spending calculated in this analysis is assumed to be new spending to Oregon’s economy. For each of the categories *gross* were reported for output, value-added, labor income and the number of jobs.

Phase 1. Ramp up phase (years 1 – 9)

The university estimates that \$212.1 million in construction and initialization costs over a 9-year period, with peak construction occurring in year 6. The university will also begin some operations during construction. During the peak phase of construction in year 6, the university will spend \$115 million annually, of which \$99.7 million will be spent and recirculated around the state’s economy.

Table 1. Total annual economic effect during peak construction

Type of Effect	Total University Spending	Local			Total Local Effect
		Direct	Local Indirect	Local Induced	
Output (\$M)	115.0	99.7	33.5	44.4	177.6
Value Added (\$M)		52.3	17.0	25.5	94.8
Labor Income (\$M)		45.9	10.7	14.9	71.5
Employment		754	209	342	1,304

Source: ECO estimates based on expenditure data provided by UO and IMPLAN software

These local expenditures will support \$71.5 million in labor income. In conjunction with that labor income, the expenditures will support 1,304 jobs in Oregon, of which 378 will work directly for the university.

Annual economic effect from operations after stabilization (years 10+)

The project will achieve a “steady state” after 10 years, once all new faculty members are hired and the construction project is complete. After the project has stabilized, UO estimates that they will spend \$43.3 million in Oregon, of which \$33.1 million will result in labor income for the state’s employees. This direct local spending on operations will result in \$79.4 million in economic activity for the state. Table 2 displays the direct, indirect, and induced effects of UO’s operations spending for the State of Oregon.

Table 2. Total annual effect during operations

Type of Effect	Total University	Local			Total Local
	Spending	Direct	Local Indirect	Local Induced	Effect
Output (\$M)	47.1	43.3	7.9	28.1	79.4
Value Added (\$M)		34.7	4.5	16.2	55.4
Labor Income (\$M)		33.1	2.4	9.4	44.9
Employment		501	48	208	756

Source: ECO estimates based on expenditure data provided by UO and IMPLAN software

In addition to the direct in-state spending, UO will spend \$3.8 million to vendors outside of Oregon. While that spending will have broad economic effects outside of the state, it is not included in the economic contribution analysis.

Results of fiscal analysis

ECO estimated the fiscal impacts of the UO facility expansion using tax data from the Oregon Legislative Revenue Office and IMPLAN software. Strictly speaking, fiscal impacts are not economic impacts, but the analyses often go hand in hand. *Economic* effects describe how new expenditures circulate throughout the economy to support demand for the broader community. The *fiscal* effects describe how those expenditures can support tax revenue for local and state government agencies.

UO is exempt from paying taxes on income and property. However, taxes can be calculated for the employees who work for the university, along with the private sector businesses that are affected by the supply chain purchases. The businesses affected by the economic expansion will also pay corporate and excise taxes on their transactions. The results of these total annual fiscal impacts are displayed in Table 3.

Table 3. Total fiscal impacts for selected years

Jurisdiction/Source	Year 1	Year 6	Year 10
State of Oregon			
State personal & corporate income tax	\$56,953	\$4,604,961	\$2,865,017
Other state taxes, fees & licenses	\$57,579	\$934,698	\$630,475
Total State Revenue	\$114,532	\$5,539,660	\$3,495,492
Local Governments in Oregon			
Local property taxes	\$29,930	\$2,632,485	\$1,550,649
Other local taxes, fees & licenses	\$44,954	\$2,732,565	\$1,613,036
Total Local Revenue	\$74,883	\$5,365,050	\$3,163,685
Total Tax Revenue	\$189,415	\$10,904,709	\$6,659,177

Source: ECO estimates based on expenditure data provided by UO and IMPLAN software; Oregon Legislative Revenue Office

The first year represents the fiscal impacts during the first year of operations, prior to the construction phase beginning. The other years correspond to the tables above for the peak construction (year 6), and the “steady state” operations phase (year 10+). Our estimates suggest a rapid expansion of fiscal revenue supported through UO’s addition of the Knight Science Campus – approximately \$6.7 million in state and local tax revenue per year after the project stabilizes in year 6.

Research and development spillovers

Local spillovers can occur in a variety of ways¹¹. Researchers can use their discoveries and findings to start their own businesses. They can license the use of their research to local businesses. And, they can consult local businesses to improve their products and profitability.

The spillovers of Stanford University and the Massachusetts Institute of Technology in Silicon Valley and Boston are widely recognized. But, beyond these major examples, economists have struggled to pinpoint the scale of research spillovers or how they occur. Estimating spillovers is an empirical challenge, and conclusions vary depending on measures of university research and local economic activity¹².

Through a combination of empirical and case studies, observers have concluded that spillovers are less related to the amount of university research and more related to idiosyncratic relationships between the university and the local economy. In its investigation of universities and industry clusters, Carnegie Mellon University and the U.S. Department of Commerce highlighted three factors that foster local spillovers¹³:

- **Breadth of involvement**—A university’s impact on local industry clusters increases if the university, industry, and local governments are interacting on a broad array of scientific, business, legal, workforce development, and other issues.

¹¹ Bartik et. al. (December 2008) page 15

¹² ibid

¹³ Paytas, Jerry et. al. (2004) *Universities and the Development of Industry Clusters*. Carnegie Mellon Center for Economic Development. Pittsburgh, PA.

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- **Strong base for R & D**—The number of local business startups is correlated with university R & D spending. But, large R & D spending is necessary but insufficient for local firm creation.
 - **Regional alignment**—The alignment of the university’s assets, skills, and expertise with regional clusters is key. In short, “the characteristics of the cluster are as important, if not more important than the characteristics of the university.”

The forthcoming investment improves UO’s R & D base and creates opportunities to expand industry clusters. To seize that opportunity, UO must identify expansion areas that are not only aligned with existing departmental capabilities but are also tied to mature industry clusters in the local economy.

The Oregon Regional Accelerator and Innovation Network (RAIN) will help that matching process¹⁴. The network connects research at UO and Oregon State University with entrepreneurs in South Willamette Valley to foster startup activity and job growth. The network won a national award for its leadership and innovation in the area of city-university partnerships. The network’s local branch—RAIN Eugene—graduated 16 startup companies from its accelerator program during its first year¹⁵. So, while it is premature to estimate spillover effects of the investment, UO has the right pieces in place to translate its research activity into broader economic activity.

¹⁴ See <http://oregonrain.org/> accessed September 6, 2016

¹⁵ See <http://raineugene.org/> accessed September 6, 2016

Appendix A. Overview of economic impact analysis

An economic impact analysis measures the effects of spending from an initial source and traces that spending as it flows through the regional economy during a single period of time, normally a year. New spending from a university on operations and capital generates short-run economic activity in the region, which increases demand for local goods and services. This, in turn, stimulates other economic activity along the supply chain, supporting business revenues, proprietor income, and employee compensation.

ECONorthwest divided the impact analysis into two parts. The first covers the construction phase, which will occur in Eugene, but is likely to have a broader impact across the state. The second phase measure the impact of the average year of operations after the ramp up in personnel is complete. This includes both general operating expenses and potential net new grant funding that will flow into the region.

The three terms of interest that we will use to define the impacts of the study are:

- **Direct Impacts** are those associated with the payroll and employment. They also include the direct output of the activities associated with the university, which is estimated using an expenditure approach that sums labor and non-labor operating expenses.
- **Indirect Impacts** are the goods and services purchased for university operations. This spending generates the first round of indirect impacts. Suppliers will also purchase additional goods and services; this spending leads to additional rounds of indirect impacts. Because they represent interactions among businesses, these indirect effects are often referred to as supply-chain impacts.
- **Induced Impacts** are the purchases of goods and services from household incomes. The direct and indirect increases in employment and income enhance the overall purchasing power in the economy, thereby inducing further consumption. Employees at the university, for example, will use their income to purchase groceries, or take their children to the doctor. These induced effects are often referred to as consumption-driven impacts.

Not all of the University's expenditures will remain in the community. Some of the initial expenditures go out of state, some money is saved instead of spent, and some is taxed rather than used for buying goods or services. This cycle of economic leakages continues across the supply chain, which diminish the impacts. So, although initial impacts have a multiplicative effect on a regional economy, they do not expand indefinitely.

Gross versus net analysis

Gross impacts are an upper bound estimate of all of the economic activity that can be traced back to UO. The gross impacts do not necessarily measure the *net* difference in the amount of activity in the economy as a result of UO's construction of the Campus for Accelerating Scientific Impact. Gross impacts do not account for substitution of resources (e.g. general fund revenues) that would have been spent in Oregon if UO did not build the new facility.

Data used for analysis

- The underlying data we used comes from data provided to ECONorthwest from the University of Oregon.
- We used the 2014 IMPLAN data for the State of Oregon to perform the analysis.

Model Assumptions

- For reporting, all dollar values are in 2016\$
- Equipment Purchases: Assumed all equipment was purchased wholesale, using a standard 16.72 % margin.
- Facility Initialization costs: We assume that 50 percent will go toward equipment maintenance/repair, and 50 percent will go toward facility maintenance/repair.
- For non-equipment construction: we assumed 91 percent of goods and services purchases would occur in Oregon.
- We used the State of Oregon multipliers to perform this analysis, as we did not have data on where expenditures would occur in the state.
- We do not include assumptions about additional business spin-offs from new faculty being employed by the university.

Cumulative economic contributions

The table below displays the components of the economic impact analysis by year. To calculate the cumulative economic contributions, ECO also estimated the total output, gross regional product, and labor compensation using a 2 percent and 7 percent discount rate. The jobs column is not aggregated together since a single job is likely to persist over multiple years and summing jobs over multiple years would result in double counting.

Appendix Table 1. Economic contributions by category and year

Year	Economic Output			Gross Regional Product			Labor Compensation			Employment
	2016\$	2%	7%	2016\$	2%	7%	2016\$	2%	7%	
		Discount	Discount		Discount	Discount		Discount	Discount	
	(in millions of \$)									
1	1.4	1.4	1.4	1.1	1.1	1.1	0.9	0.9	0.9	12
2	28.9	28.3	27.0	15.6	15.3	14.6	10.2	10.0	9.6	207
3	60.9	58.5	53.2	32.6	31.3	28.4	22.2	21.3	19.4	459
4	136.2	128.3	111.2	67.6	63.7	55.2	43.4	40.9	35.5	971
5	130.0	120.1	99.2	66.3	61.2	50.6	44.5	41.1	34.0	983
6	177.6	160.9	126.6	85.9	77.8	61.2	56.3	51.0	40.1	1,304
7	80.4	71.4	53.5	49.6	44.0	33.0	38.1	33.8	25.4	762
8	80.4	70.0	50.0	48.6	42.3	30.3	37.4	32.5	23.3	762
9	80.4	68.6	46.8	47.7	40.7	27.7	36.6	31.3	21.3	762
10	79.4	66.4	43.2	46.3	38.8	25.2	35.7	29.9	19.4	756
11	79.4	65.1	40.3	45.4	37.3	23.1	35.0	28.7	17.8	756
12	79.4	63.8	37.7	44.5	35.8	21.2	34.3	27.6	16.3	756
Total	1,014.0	902.7	690.0	551.3	489.4	371.7	394.8	349.2	262.9	N/A

Source: ECO estimates based on expenditure data provided by UO and IMPLAN software

Appendix B. Overview of fiscal impact analysis

ECO used the IMPLAN software, along with tax revenue estimates from the Oregon Legislative Revenue Office (LRO) to calculate the tax revenue impacts associated with the Knight Science Campus. This involved calculating the potential revenue from construction and new demand for goods and services in Oregon after the project becomes operational.

Strictly speaking, fiscal impacts are not economic impacts, but the analyses often go hand in hand. *Economic* impact analyses describe how new expenditure circulate throughout the economy to support, or generate new demand for the broader community. On the other hand, *fiscal* impacts describe how those expenditures can generate new tax revenue for cities, counties, schools, and other government agencies.

Data used for analysis

- Underlying assumptions were provided to ECONorthwest by the University of Oregon.
- The output used to estimate indirect excise and corporate taxes derives from IMPLAN and estimates from ECONorthwest.
- The tax data come from the Oregon Legislative Revenue Office.

Model Assumptions

- To calculate personal income tax revenue in Oregon, ECO multiplied direct, indirect, and induced incomes (excluding benefits and bonuses) by the state average using data from the Oregon Legislative Revenue Office.
- Property taxes for residential and multifamily housing were calculated based on employee revenues for personal residences. ECO excluded any property tax for commercial property due to UO's tax exempt status.
- ECO multiplied indirect business output by state averages to estimate all other state and local tax revenue.

Appendix Table 2. Fiscal impacts by category and year

Year	State of Oregon			Local Governments			Total Tax Revenue		
	2016\$	2% Discount	7% Discount	2016\$	2% Discount	7% Discount	2016\$	2% Discount	7% Discount
(in millions of \$)									
1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
2	1.0	0.9	0.9	0.9	0.9	0.9	1.9	1.8	1.7
3	2.0	2.0	1.8	1.9	1.9	1.7	4.0	3.8	3.5
4	4.1	3.9	3.4	4.1	3.8	3.3	8.2	7.7	6.7
5	4.2	3.9	3.2	4.1	3.8	3.1	8.3	7.7	6.3
6	5.5	5.0	3.9	5.4	4.9	3.8	10.9	9.9	7.8
7	3.5	3.1	2.3	3.2	2.8	2.1	6.7	6.0	4.5
8	3.5	3.1	2.2	3.2	2.8	2.0	6.7	5.8	4.2
9	3.5	3.0	2.0	3.2	2.7	1.9	6.7	5.7	3.9
10	3.5	2.9	1.9	3.2	2.6	1.7	6.7	5.6	3.6
11	3.5	2.9	1.8	3.2	2.6	1.6	6.7	5.5	3.4
12	3.5	2.8	1.7	3.2	2.5	1.5	6.7	5.4	3.2
Total	38.1	33.7	25.3	35.5	31.4	23.7	73.6	65.0	49.0

Source: ECO estimates based on expenditure data provided by UO and IMPLAN software; Oregon Legislative Revenue Office

ECONOMIC IMPACT

of University of Oregon's Applied Science Center

A preliminary analysis by ECONorthwest estimates that investing \$1 billion in new capital and operations over 13 years for the UO Applied Science Center will generate:¹

Investing in a new applied science facility will strengthen the foundation of the University's research while facilitating long-term economic growth in the region.

Annual Impact During Peak Construction Phase



\$175.8 million

total economic output

direct, indirect, and induced goods and services in the regional economy



1,304

jobs

(FTE for one year) supported by direct, indirect, and induced spending



\$69.7 million

labor income

including employee compensation and proprietor income

Annual Impact Operations After Ramp Up



\$79.3 million

total economic output

direct, indirect, and induced value of goods and services in produced



756

jobs

(FTE for one year) supported by direct, indirect, and induced spending



\$44.8 million

labor income

including employee compensation and proprietor income

Fiscal Impacts During Construction and After Ramp Up



\$10.9 million

of state and local tax revenue supported during peak construction



6.7 million

in state and local taxes after ramp up

¹Economic output and labor income are in 2015\$