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SUBJECT: THE KNIGHT CANCER INSTITUTE ECONOMIC IMPACTS

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## 1. Background

OHSU requested that ECONorthwest estimate the economic impacts associated with capital construction of two buildings and the proposed expansion of operations at the Knight Cancer Center. This technical memorandum summarizes OHSU's broad role in the regional economy and then turns to the specific economic impact findings of the proposed expansion. These findings are preliminary and were based on construction and operational assumptions as of December 20, 2013.

## 2. The Role of OHSU in the Regional Economy

OHSU plays at two roles in the Oregon regional economy. It's a major local sector provider of healthcare services to regional residents. Simultaneously, OHSU is traded sector actor that provides medical services and research to people outside the region and the country. Patients travel to Portland for more sophisticated procedures and medical expertise than are available in smaller cities and towns. Though tele-medicine programs OHSU extends service provision through partner hospitals. Finally, OHSU researchers attract federal and private dollars to advance medical practice.

OHSU's local sector role will increase with a growing and aging population. But, federal- and state-level reforms seek to slow the rate of growth and improve value. OHSU is collaborating with healthcare professionals, insurers, and other hospitals to implement collaborative, evidence-based treatment practices.

While a slower rate of growth in its local sector role is a goal, the regional economy benefits if OHSU expands its traded sector activity. Attracting more patients from outside the region by boosting relative quality is one way to expand. Another way to enhance OHSU's traded sector role is by strengthening the institution's research capacity and attracting more federal and private investment.

Expanding the healthcare activity—whether local or traded sector – is likely to encourage other employers in a metropolitan area to pay higher wages. Healthcare pays higher-than-average wages regardless of workers' skills and demographic characteristics. Expanding healthcare is likely to raise wages throughout a metropolitan area by putting upward pressure on wages throughout the metropolitan labor market.

### 3. Economic Impacts of Proposed Capital and Operational Expansions

ECONorthwest estimated the gross economic impacts associated with the construction of two buildings and a proposed expansion of research and clinical trial activity associated with the Knight Cancer Institute. The impacts are associated with construction and financial assumptions provided to ECONorthwest on December 20, 2013.

Economists have developed several approaches for measuring the economic impacts of companies—that is, their contributions to the communities in which they operate. The most common method estimates the economic impacts associated with a company’s spending on payroll, non-payroll goods and services, capital investments, charitable contributions, and taxes. This method is often referred to as the “expenditure approach.”

The expenditure approach is typically conducted within an input-output modeling framework. Input-output models provide a comprehensive picture of the economic activities in a given area using mathematical relationships that describe the flow of resources and commodities between local and non-local industries, households, and the final users of goods and services. This input-output analysis is conducted using a software program called IMPLAN.

The Knight Cancer Institute’s economic impacts are measured primarily at the state level, this allows for the capture of any spillover effects from where direct spending and employment occur<sup>1</sup>

The Knight Cancer Institute’s economic impacts can be measured in several ways. This report focuses on three of the most common measures:

- **Output** represents the value of goods and services produced. This is the largest, most encompassing measure of economic activity and includes personal income (discussed below).
- **Personal income** consists of total payroll costs (including bonuses and benefits) paid to workers, as well as self-employment income earned by individuals.
- **Jobs** represent the number of people working full- or part-time jobs.

Economic impact analysis employs specific terminology to identify different types of economic impacts. *Direct* impacts are those associated with payroll and employment at the Knight Cancer Institute. They also include the direct output of the Knight Cancer Institute activities in Oregon, which is estimated using labor and non-labor operating expenses.

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<sup>1</sup> Economic impact models were built using IMPLAN 2011 data.

IMPLAN estimates *indirect* impacts using data on the Knight Cancer Institute’s purchase of goods and services from other Oregon-based businesses. These businesses, in turn, purchase a wide array of intermediate goods and services that they need to operate. Because these purchases represent interactions among businesses, indirect effects are often referred to as “supply-chain” impacts. The resulting direct and indirect increases in employment and income enhance overall economic purchasing power, thereby *inducing* further consumption and investment-driven stimulus. These induced effects are often referred to as “consumption-driven” impacts.

### 3.1 Construction and Equipment Impacts

Table 1 lists the economic impacts from construction and equipment purchases associated with the Knight Cancer Institute. These impacts are the sum of the entire construction period over two years—they should be divided in half in order to measure the annual impacts.

**Table 1. Construction and Equipment Impacts (Total over 2 years), 2011\$**

<b>Statewide</b>	
<b>Output</b>	
Direct	\$474,283,592
Indirect	159,553,711
Induced	258,102,240
<b>Total</b>	<b>\$891,939,543</b>
<b>Labor Income</b>	
Direct	\$247,708,733
Indirect	57,693,265
Induced	87,911,382
<b>Total</b>	<b>\$393,313,380</b>
<b>Job Years</b>	
Direct	3,605
Indirect	1,068
Induced	2,162
<b>Total</b>	<b>6,835</b>

Source: IMPLAN 2011 Data, ECONorthwest, OHSU

The total economic impacts for the State of Oregon are estimated to be about \$446 million a year for each year of construction. There are 3,418 jobs supported by the construction of the new facilities for the Knight Cancer Institute for each year of construction in the State of Oregon. The jobs multiplier for construction and equipment purchases is 1.9 in the State of Oregon — indicating that for every 10 jobs directly added, an additional 9 jobs are added through indirect and induced impacts for each year of construction.

### 3.2 Operations Impacts

Table 2 lists the economic impacts for one year of stabilized operations for the Knight Cancer Institute. The financial projections provided by OHSU indicated a staffing up period, during which the economic impacts are not measured. Economic impacts from operations are only calculated for the period once hiring has been stabilized.

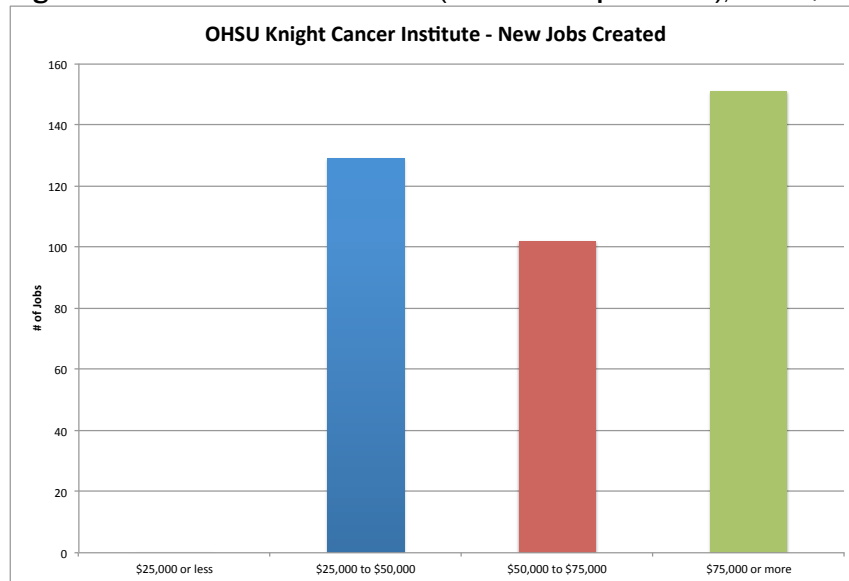
**Table 2. Operating Impacts (Annual for Stabilized Operations), 2011\$**

Statewide	
<b>Output</b>	
Direct	\$75,815,446
Indirect	17,839,766
Induced	40,307,034
<b>Total</b>	<b>\$133,962,246</b>
<b>Labor Income</b>	
Direct	\$42,718,460
Indirect	6,039,533
Induced	13,355,595
<b>Total</b>	<b>\$62,113,587</b>
<b>Jobs</b>	
Direct	384
Indirect	129
Induced	347
<b>Total</b>	<b>860</b>

Source: IMPLAN 2011 Data, ECONorthwest, OHSU

The total economic impacts for once year of operations for the Knight Cancer Institute are approximately \$134 million for the State of Oregon. For one year of stabilized operations, there are approximately 860 jobs supported statewide by the Knight Cancer Institute. The jobs multiplier associated with operations in the State of Oregon is 2.24—indicating that for every direct job there are an additional 1.24 jobs supported through indirect and induced impacts.

**Figure 1. Additional Jobs Created (Stabilized Operations), 2013\$**



Source: ECONorthwest, OHSU

Figure 1 illustrates the breakdown of base salaries for staff that are projected to be hired by the Knight Cancer Institute. Approximately 384 FTE staff are expected to be hired once operations have stabilized. Of the 384 total staff, 129 will make between \$25,000 and \$50,000, 102 will earn between \$50,000 and \$75,000, and the remaining 151 will make more than \$75,000. The distribution of salaries is important due to the emergence of the “hollowing out” effect in

wage distribution. The recent trend in job growth has been at high and low income levels, in essence hollowing out the middle-income range. The projected job growth at OHSU will add approximately 60% of the jobs in the middle-income range, helping to reduce the imbalance of wage distribution.

## 4. Fiscal Impacts

Table 3 displays the fiscal impacts generated from the construction and operation of the Knight Cancer Institute. Property and income taxes were calculated using the average percent of personal income, based on the relevant geographic area where the income is earned. Income taxes represent state income taxes only and do not factor any federal taxation. The construction impacts are over the two-year construction period, so they need to be divided in half in order to represent annual impacts. The operations impacts are representative of one year of stabilized operations.

**Table 3. Fiscal Impacts from Construction and Operations, 2011\$**

		<b>Statewide</b>
<b>Construction</b>		
	Property Tax	13,987,285
	Income Tax	21,356,145
	<b>Total</b>	<b>35,343,430</b>
<b>Operations</b>		
	Property Tax	2,225,183
	Income Tax	3,391,971
	<b>Total</b>	<b>5,617,154</b>

Source: IMPLAN 2011 Data, ECONorthwest, OHSU, Oregon Department of Revenue, Census Bureau

The fiscal impacts for one year of construction are \$17.7 million statewide—\$7 million from property taxes and \$10.7 million from income taxes. For each year of operations, the estimated property and income tax generated in the State of Oregon is \$5.6 million— \$2.2 Million from property taxes and \$3.4 million from income taxes.