



OREGON TECH

ECONOMIC IMPACT ANALYSIS

JANUARY 2016

PREPARED BY:

ECONorthwest

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EXECUTIVE SUMMARY

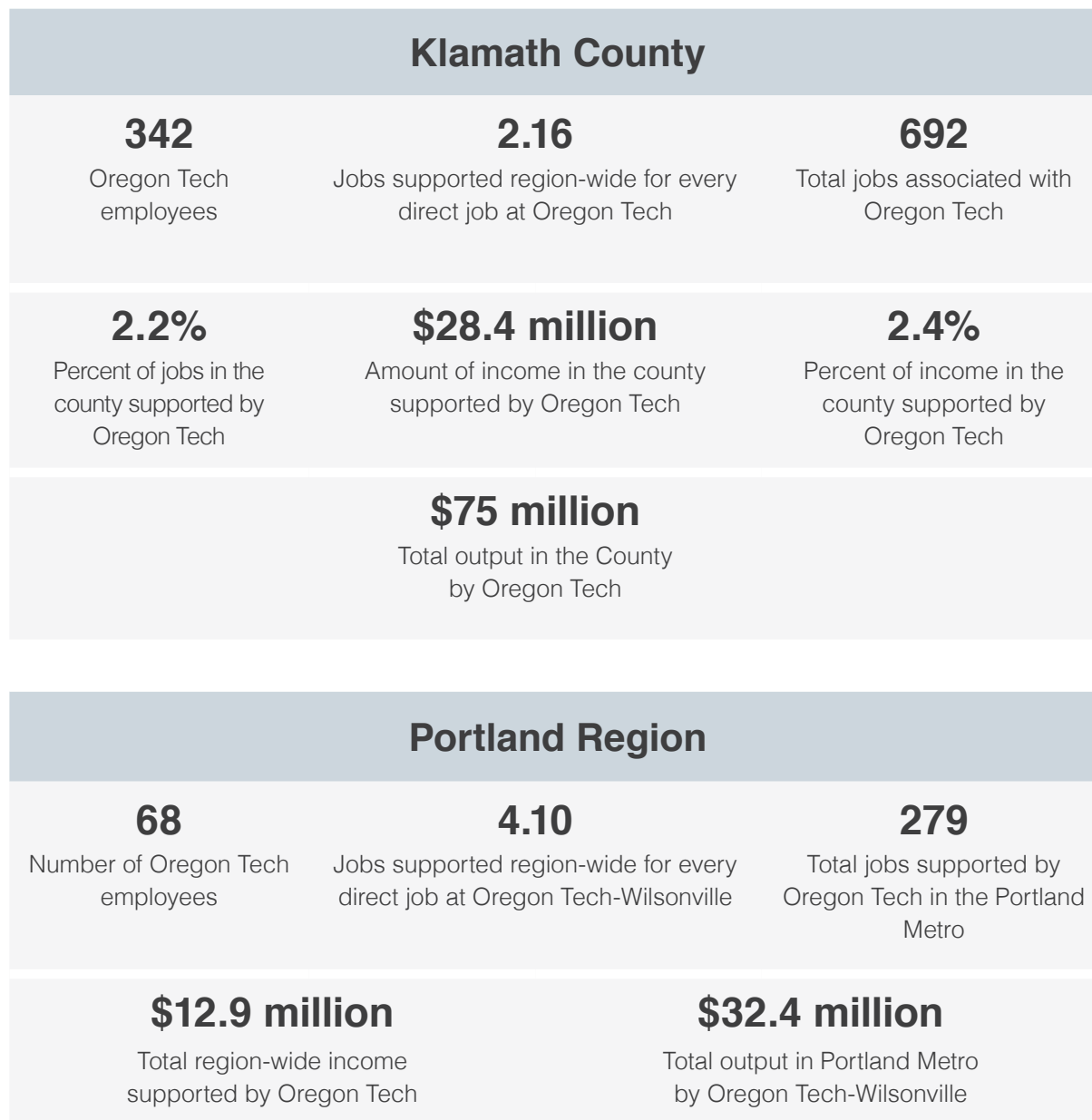
INTRODUCTION

The Oregon Institute of Technology (“Oregon Tech”) commissioned ECONorthwest to estimate the economic contributions of their capital expenditures and operations in Oregon for the year ending June 30, 2015 (“FY15”). In this analysis, all of the economic outputs reported are “gross” impacts instead of “net” impacts. The estimates ECONorthwest provides in this report represent an upper bound for economic activity that is attributable to Oregon Tech in FY15. While the results are meaningful, they do not necessarily reflect the creation of *new* jobs or income in the regional economy.

Educational Importance

- Average price of attending Oregon Tech compared to the earnings 10 years after enrollment is lowest in the state: **28 cents for every dollar of annual earnings.**
- **75 percent** of 2014 graduates completed degrees in health or engineering technology fields.
- A Brookings study placed Oregon Tech in the **top ten schools in the nation** for “value-added degrees.”

FIGURE I. BY THE NUMBERS – LOCAL AND REGIONAL IMPACTS



Note: Portland Region denotes Multnomah, Washington, and Clackamas Counties.

INTRODUCTION

Oregon Institute of Technology (Oregon Tech), with campuses in Klamath Falls and Wilsonville, serves as the Northwest's only public technical institute. Oregon Tech originally started as a vocational rehabilitation school for World War II veterans, under the name Oregon Vocational School, in 1947. Oregon Tech first offered associates degree programs in 1953 under the Oregon Technical Institute name, and began offering four-year degrees in 1970 as Oregon Institute of Technology. Oregon Tech's first master's degree was offered in 1995. In July 2015, Oregon Tech became an independent public body, governed by a Board of Trustees.

In addition to its many awards and accolades for school performance, Oregon Tech is known for employing technology directly on campus. Its Klamath Falls campus is the only university campus in the world that is heated entirely by geothermal and solar sources.

True to its origins, Oregon Tech is also known for its support of military veterans. Oregon Tech was ranked as a top Veteran/Military Friendly College by US Veterans Magazine, Military Times, and Military Advanced Education (MAE) in 2015.

The university's success may also come from its focus on high-skill and high-growth areas of engineering and technical health specialties. More than 75 percent of the university's 2014 graduates completed degrees in health or engineering technology-related fields.¹

Oregon Tech Awards and Accolades

- Top Western Colleges for Efficiency
- #1: Top Public West Regional Colleges—*U.S. News* ranking
- #3: Best Colleges for Veterans in Western Regional Colleges—*U.S. News* ranking
- #5: Best West Regional Colleges—*U.S. News* ranking
- #18: Annual Return on Investment—*Payscale*
- #527: Top Colleges in the Nation—*Forbes*

OREGON TECH'S ROLE IN OREGON

Oregon Tech is the only technical university in the Pacific Northwest, providing Oregon with roughly 700 prepared, career-ready graduates each year. Oregon Tech's program includes a campus in the rural Klamath Falls region, bringing STEM opportunities to the area, as well as an urban campus in Wilsonville, providing opportunities for direct industry links with the robust tech industry located there.

Oregon Tech provides Oregon with a wealth of high-skill graduates at a reasonable cost to students. Based on the U.S. Department of Education's College Scorecard, Oregon Tech's average annual enrollment costs to graduate salary ratio is the lowest in the state among reported institutions (28 cents per dollar earned), with graduates earning 46 percent above the national average salary 10 years after starting the program.²

Oregon Tech Mission Statement

Oregon Institute of Technology, an Oregon public university, offers innovative and rigorous applied degree programs in the areas of engineering, engineering technologies, health technologies, management, and the arts and sciences. To foster student and graduate success, the university provides an intimate, hands-on learning environment, focusing on application of theory to practice. Oregon Tech offers statewide educational opportunities for the emerging needs of Oregon's citizens and provides information and technical expertise to state, national and international constituents.

Education

Oregon Tech educates thousands of students in academic and technical programs each year. Oregon Tech offers more than 40 degree programs and certificates in their College of Engineering, Technology, and Management, and College of Health, Arts, and Sciences. Within Oregon, Oregon Tech has two main sites in Wilsonville and Klamath Falls, along with satellite extension campuses in Salem and La Grande. They also maintain a satellite location, which provides on-the-job training, certificates, and degrees for students at Boeing. Oregon Tech operates and is expanding its Online Campus to better serve place-bound students.

¹<http://colleges.usnews.rankingsandreviews.com/best-colleges/Oregon-Tech-3211>

²<https://collegescorecard.ed.gov/school/?209506-Oregon-Institute-of-Technology>; Includes only those students who received any amount of federal financial aid to attend program.

TABLE 1. OREGON TECH DEGREE PROGRAMS

Master's Degrees	
Civil Engineering	Marriage and Family Counseling
Engineering	Renewable Energy Engineering
Manufacturing Engineering Technology	
Bachelor's Degrees	
Applied Mathematics	Health Care Management
Applied Psychology	Health Informatics
Biology	Information Technology
Civil Engineering	Management
Clinical Laboratory Science	Manufacturing Engineering Technology
Communication	Mechanical Engineering
Computer Engineering Technology	Mechanical Engineering Technology
Dental Hygiene	Nuclear Medicine Technology
Diagnostic Medical Sonography	Nursing
Echocardiography	Operations Management
Electrical Engineering	Radiologic Science
Electronics Engineering Technology	Renewable Energy Engineering
Embedded Systems Technology	Respiratory Care
Emergency Medical Services	Software Engineering Technology
Environmental Science	Technology and Management
Geomatics	Vascular Technology

FIGURE 2. LOCATION OF OREGON TECH EDUCATIONAL FACILITIES IN OREGON AND WASHINGTON



Figure 2 displays the locations of Oregon Tech campuses in Oregon and Washington. The economic impacts in this analysis focus on operations and capital expenditures, along with student spending at Oregon Tech’s two main campuses in Wilsonville and Klamath Falls. This study does not include any impacts related to alumni employment once they graduate from Oregon Tech and begin working in the regional economy.

Oregon Tech attracts students from around the state, with many students transferring in from Oregon community colleges or other Oregon universities. Oregon Tech also draws in students from California, Washington, and other states and countries.

CAREER READINESS AND TEACHING PHILOSOPHY

Oregon Tech’s emphasis on application of technical skills in its curriculum reveals its ultimate goal of making their graduates career-ready. All students are immersed in hands-on learning—in laboratories, clinics, or field experience—within their first term of major field of study. The university also focuses on a small student-to-faculty ratio and a student-centric learning environment where faculty teach their own labs and directly mentor and advise students.

Oregon Tech’s unique approach to teaching technical skills using hands-on learning has shown measurable outcomes for their graduates. A Brookings Institute study that took a new approach to ranking colleges by focusing on the “value-added” by degree given the characteristics of the student population, placed Oregon Tech in the top ten schools in the nation for their new measure.³ Overall, polytechnic and technology universities showed the strongest “value-added” from their degrees.

Research and Grants

Oregon Tech makes important contributions to research in the areas of renewable energy, manufacturing, and transportation. During FY15, Oregon Tech received almost \$3.9 million in funding for applied science and engineering research, including the development of renewable energy technologies. In total, the school received \$13.7 million during FY15 in government grants and commercial sponsorships.

FIGURE 3. ORIGIN OF OREGON TECH STUDENTS FOR ACADEMIC YEAR 2014 - 2015

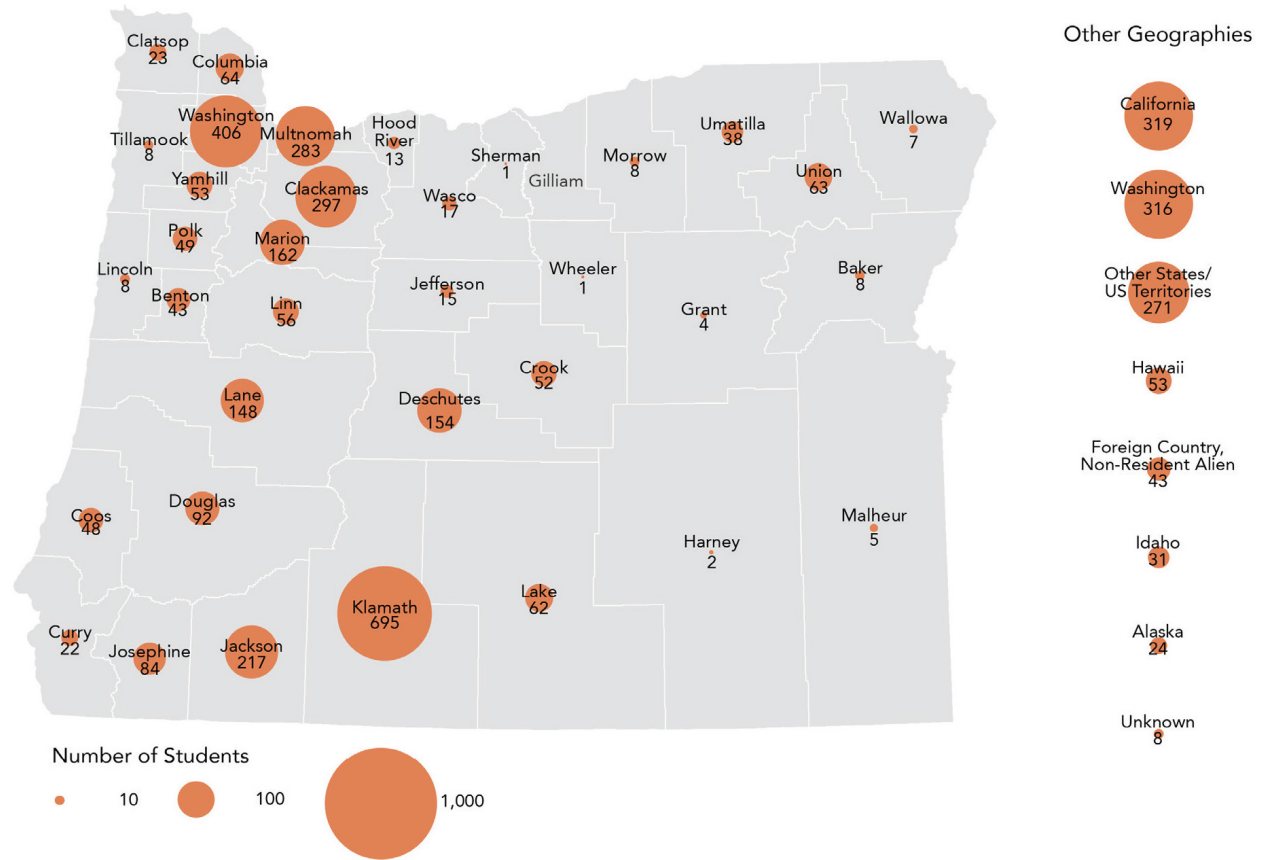


TABLE 2. GRANT FUNDING BY TYPE, FY 2015

	All Restricted Funding	Student Financial Aid	Sponsored Projects
Federal Funds	\$6,395,377	\$5,875,171	\$520,206
State and Local Government Funds	\$2,404,286	\$1,291,274	\$1,113,012
Other Commercial, Non-Profit & Fdn Funding	\$4,911,787	\$2,647,163	\$2,264,625
Totals	\$13,711,450	\$9,813,608	\$3,897,843

³<http://www.brookings.edu/blogs/the-avenue/posts/2015/06/10-value-added-college-rankings-public-schools-kulkarni-rothwell>

OVERVIEW OF ECONOMIC IMPACTS

The most common approach for measuring economic impacts captures the short-run economic contributions associated with a university’s current operations and capital spending, as well as spending by students and visitors to its campuses. This captures the benefits (in terms of dollars and jobs) to the local and regional businesses as students and visitors travel to campus and spend money at hotels, restaurants, apartments, grocery stores, etc.

This report describes the economic impacts associated with Oregon Tech’s student, payroll, and capital expenditures during FY15. We measure the various economic impacts of Oregon Tech across three geographies: Klamath County, Clackamas County, and the Portland Metro area.

The three types of economic impacts are as follows:

1. 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.

2. Indirect Impacts are the goods and services purchased for operations and by students and visitors. 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.



3. 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.

TABLE 3. TOTAL ECONOMIC IMPACTS FOR KLAMATH AND CLACKAMAS COUNTIES, FY15

	Direct	Indirect	Induced	Total
Employment	410	365	190	966
Labor Income	\$35,651,668	\$10,267,141	\$6,239,442	\$52,158,251
Value Added	\$35,651,668	\$24,927,144	\$11,535,091	\$72,113,903
Output	\$42,365,705	\$36,308,983	\$20,269,597	\$98,944,285

DETAILED FINDINGS

This section summarizes the economic impacts supported by operations, capital expenditures, student, and visitor spending. ECONorthwest obtained direct spending estimates for operations from Oregon Tech for FY15. The detailed line-by-line expenditures provided by Oregon Tech allowed for a highly accurate estimate because each item purchased has a measurable effect on the local and state economies.

OPERATIONS AND CAPITAL SPENDING

Oregon Tech operations expenditures consist of the activities associated with the university's primary business activities in the local economy. This includes payroll for employees, or administrative services, and the purchase of goods and services, such as computers, or other educational supplies, both which support educational services.

Capital spending are those expenditures used to expand or renovate assets such as buildings or equipment. In addition to being a labor-intensive industry, higher education is also capital intensive. Advances in new technology require purchasing new equipment and replacing older facilities. Constructing new buildings can help increase the efficiency of service and improve cost-controls.

Collectively, these expenditures have an impact on the local economy. Figure 4 displays the regional supply chain for Oregon Tech's capital and operations expenditures. The majority of indirect economic impacts associated with Oregon Tech's purchases are attributable to businesses in Multnomah and Klamath Counties.

FIGURE 4. OREGON TECH SUPPLY CHAIN IN OREGON

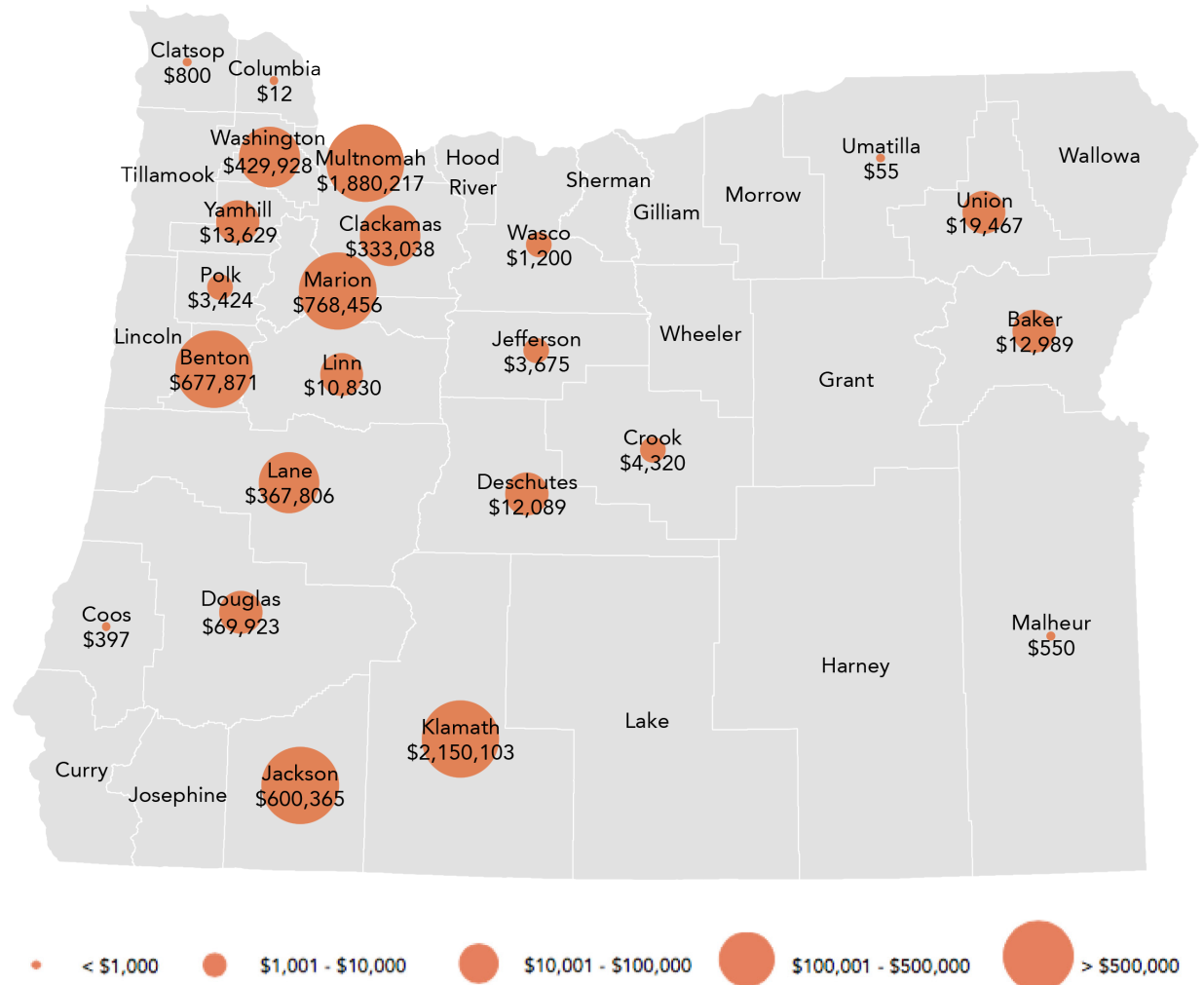


Table 4 reports the economic contribution related to operations and capital spending. The direct employment and income represent those employed at Oregon Tech. The indirect contributions relate to the purchases in Klamath County and the Portland Metro, as shown in the map above. The induced contributions capture the spending by Oregon Tech employees, and those supported by indirect purchases by the university.

TABLE 4. ECONOMIC CONTRIBUTIONS FROM OPERATIONS AND CAPITAL SPENDING ALONE (KLAMATH COUNTY, CLACKAMAS COUNTY, AND PORTLAND METRO), FY15

County	Direct	Indirect	Induced	Total
Klamath County				
Employment	342	25	129	496
Labor Income	\$18,384,330	\$824,068	\$4,107,502	\$23,315,900
Value Added	\$18,384,330	\$1,037,579	\$7,660,568	\$27,082,477
Output	\$35,339,198	\$2,221,371	\$13,544,759	\$51,105,328
Clackamas County				
Employment	68	4	11	83
Labor Income	\$6,631,819	\$214,580	\$421,174	\$7,267,573
Value Added	\$6,631,819	\$239,648	\$748,759	\$7,620,226
Output	\$7,026,507	\$299,142	\$1,276,370	\$8,602,019
Portland Metro				
Employment	68	25	33	126
Labor Income	\$6,631,819	\$1,462,208	\$1,492,533	\$9,586,560
Value Added	\$6,631,819	\$2,013,684	\$2,412,087	\$11,057,590
Output	\$7,026,507	\$3,333,087	\$4,073,966	\$14,433,560



STUDENT AND VISITOR SPENDING

ECONorthwest also measured the economic contribution of student spending and visitors in the study region. Oregon Tech attracts many visitors who travel to Klamath for student-related activities.

ECONorthwest calculated student expenditures by combining enrollment data with student spending estimates. Oregon Tech provided information on conferences, meetings, and athletic events at its Klamath Falls campus. This data was combined with visitor spending estimates from Dean Runyan,⁴ to calculate the impacts associated with visitors to the campus. The estimates for student spending by living arrangement and estimated visitors by event type are reported in Figures 5 and 6 at right.

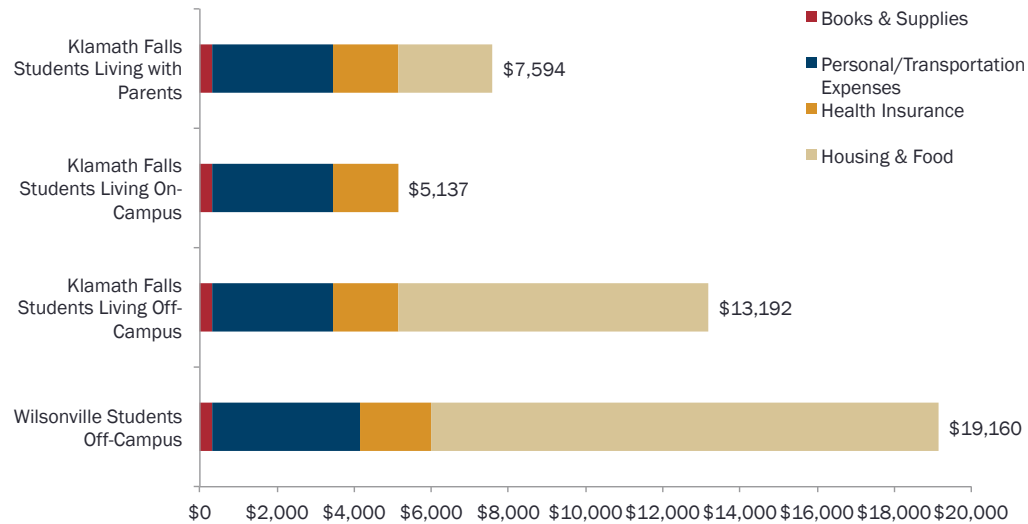
ECONorthwest estimated 20% would stay overnight in Klamath County, 30% would stay overnight in another county in Oregon, and 50% would be day visitors only. ECONorthwest assumed one person joined each prospective student on a campus tour, and the tour groups averaged 10 people.

The estimated initial spending by the students and visitors is captured in the indirect contributions, as well as additional rounds of supply-chain purchases by businesses serving students and visitors.

Top 4 Sectors Benefiting from Off-Campus Student Spending, Klamath County

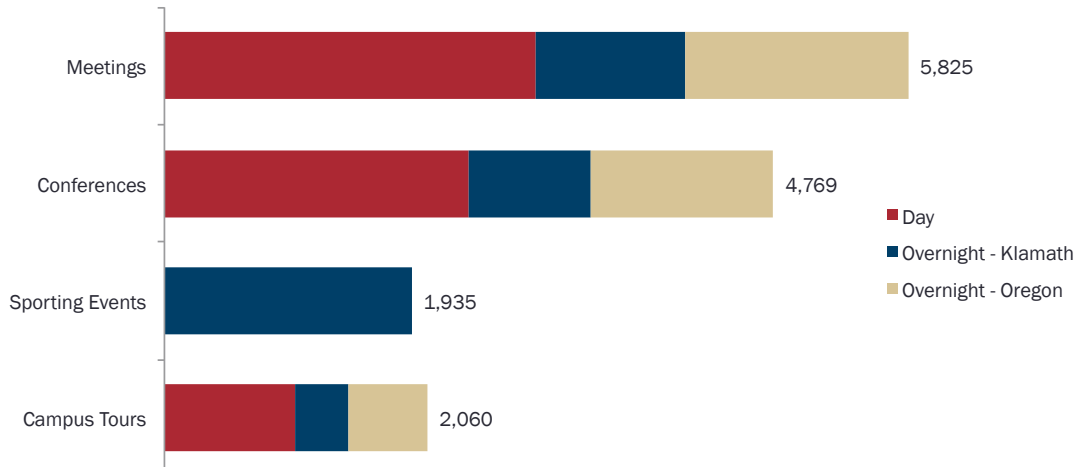
1. Restaurant/food and beverage – 61 jobs
2. Real estate establishments – 54 jobs
3. Grocery and food retailers – 20 jobs
4. Hospitals & Doctor's offices – 18 jobs

FIGURE 5. SUMMARY OF OFF-CAMPUS STUDENT SPENDING PER YEAR, BY STUDENT LIVING ARRANGEMENTS



Note: Wilsonville student spending estimated using 2014 Q3 Cost of Living Index.

FIGURE 6. DAY AND OVERNIGHT VISITORS, BY EVENT, 2014



Note: Includes only out-of-county visitors to the Klamath Falls campus. Does not estimate how many visitors came specifically because of the university, and would not have come to the county if it hadn't been for the university.

⁴Oregon Travel Impacts, 1991-2014. Dean Runyan & Associates. April 2015.

TABLE 5. ECONOMIC CONTRIBUTIONS FROM STUDENT AND VISITOR SPENDING (KLAMATH COUNTY, CLACKAMAS COUNTY, AND PORTLAND METRO), FY15

County	Direct	Indirect	Induced	Total
Klamath County				
Employment	n/a	212	31	244
Labor Income	n/a	\$5,611,396	\$994,432	\$6,605,828
Value Added	n/a	\$14,207,948	\$1,853,542	\$16,061,490
Output	n/a	\$20,796,444	\$3,278,217	\$24,074,660
Clackamas County				
Employment	n/a	124	19	143
Labor Income	n/a	\$3,617,097	\$716,334	\$4,333,431
Value Added	n/a	\$9,441,969	\$1,272,222	\$10,714,191
Output	n/a	\$12,992,026	\$2,170,251	\$15,162,277
Portland Metro				
Employment	n/a	135	27	162
Labor Income	n/a	\$4,779,784	\$1,204,938	\$5,984,722
Value Added	n/a	\$10,527,790	\$1,946,252	\$12,474,042
Output	n/a	\$14,664,164	\$3,288,308	\$17,952,472

Notes: Campus visitors not staying overnight spend \$31 in Klamath County, while overnight visitors spend \$81 per day in the county. There are no direct impacts from visitor spending.



COMBINED ECONOMIC IMPACTS

Table 6 displays the combined economic contributions of Oregon Tech across the three study regions. This region includes Klamath and Clackamas Counties, and Portland Metro. These contributions represent the gross estimates of FY15 operations and capital spending, employment and payroll, along with student and visitor expenditures. Gross impacts represent the upper bound estimate of direct, indirect, and induced impacts, which are distributed across the three regions.

The economic contributions from Oregon Tech have indirect and induced impacts on other industries in the regional economy. Table 7 displays the impact by sector of Oregon Tech spending. The Government sector includes all direct output of Oregon Tech and therefore has the largest impact. However, the service industry has the greatest impact from Oregon Tech spending.

In this analysis, multipliers are calculated by dividing the total economic impacts by the direct spending, payroll, and employment at the university. Implicitly, this assumes Oregon Tech is responsible for leveraging direct spending by students and others, in addition to downstream supply-chain and consumption-driven spending. The multipliers associated with Oregon Tech spending include:

- Oregon Tech’s output multiplier is 2.12. This means that every million dollars in direct spending by Oregon Tech generates another \$1.1 million in local spending elsewhere.

TABLE 6. COMBINED ECONOMIC CONTRIBUTIONS (KLAMATH COUNTY, CLACKAMAS COUNTY, & PORTLAND METRO)

County	Direct	Indirect	Induced	Total
Klamath County				
Employment	342	238	160	740
Labor Income	\$29,019,849	\$6,435,464	\$5,101,934	\$40,557,247
Value Added	\$29,019,849	\$15,245,527	\$9,514,110	\$53,779,486
Output	\$35,339,198	\$23,017,815	\$16,822,976	\$75,179,988
Clackamas County				
Employment	68	128	30	226
Labor Income	\$6,631,819	\$3,831,677	\$1,137,508	\$11,601,004
Value Added	\$6,631,819	\$9,681,617	\$2,020,981	\$18,334,417
Output	\$7,026,507	\$13,291,168	\$3,446,621	\$23,764,296
Portland Metro				
Employment	68	160	60	288
Labor Income	\$6,631,819	\$6,241,992	\$2,697,471	\$15,571,282
Value Added	\$6,631,819	\$12,541,474	\$4,358,339	\$23,531,632
Output	\$7,026,507	\$17,997,251	\$7,362,274	\$32,386,032

TABLE 7. IMPACTS BY MAJOR INDUSTRY SECTOR

Industry	Klamath County	Clackamas County	Portland Metro
Agriculture	\$42,886	\$9,527	\$25,636
Construction	\$1,362,667	\$336,854	\$568,948
Government	\$36,249,378	\$7,144,374	\$7,603,530
Manufacturing	\$147,271	\$52,874	\$452,607
Mining	\$9,669	\$3,846	\$20,028
Service	\$30,150,666	\$13,868,986	\$19,371,147
Trade	\$3,720,678	\$1,218,295	\$1,861,855
Other	\$3,496,761	\$1,129,537	\$2,482,279
Total	\$75,179,976	\$23,764,293	\$32,386,030

Note: Discrepancies in totals for these two tables are dues to rounding.

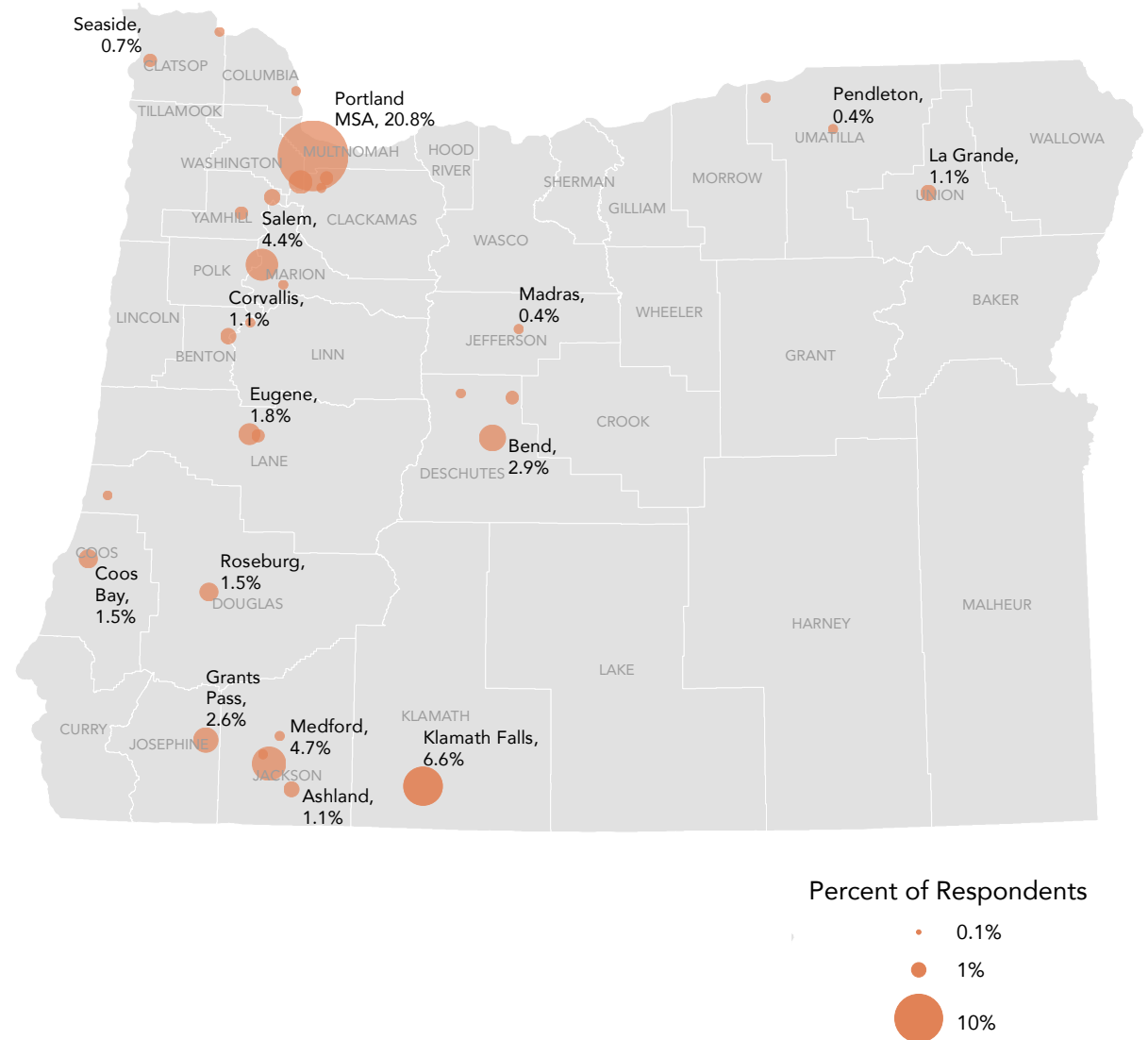
- Oregon Tech's income multiplier is 1.4. This means that every million dollars in direct income paid by Oregon Tech is linked to another \$400,000 in income for workers in other sectors of the local economy.
- Oregon Tech's employment multiplier is 2.16. This means that every direct job at Oregon Tech is linked, on average, to a little more than one additional local job in another sector of the economy.

ALUMNI

ECONorthwest did not include alumni incomes and expenditures in the economic impact model. However, many students that graduate from Oregon Tech continue to live in Oregon and contribute to the regional economy. Based on the fiscal year 2014 alumni survey, approximately 60 percent of respondents continued to live and work in Oregon, many living in the population centers of the state.

Determining average and median salaries by using the alumni survey is difficult due to the small sample size. However, Table 10 shows the range of incomes, by field of study, for survey respondents who graduated between 2011 and 2014. According to the U.S. Department of Education's College Scorecard, the median salary for Oregon Tech graduates is \$50,100, which is 46 percent above the national average. Additionally, Oregon Tech has the lowest student debt to graduate salary ratio of all institutions of higher education in the state.

FIGURE 7. OREGON TECH ALUMNI BY EMPLOYER LOCATION



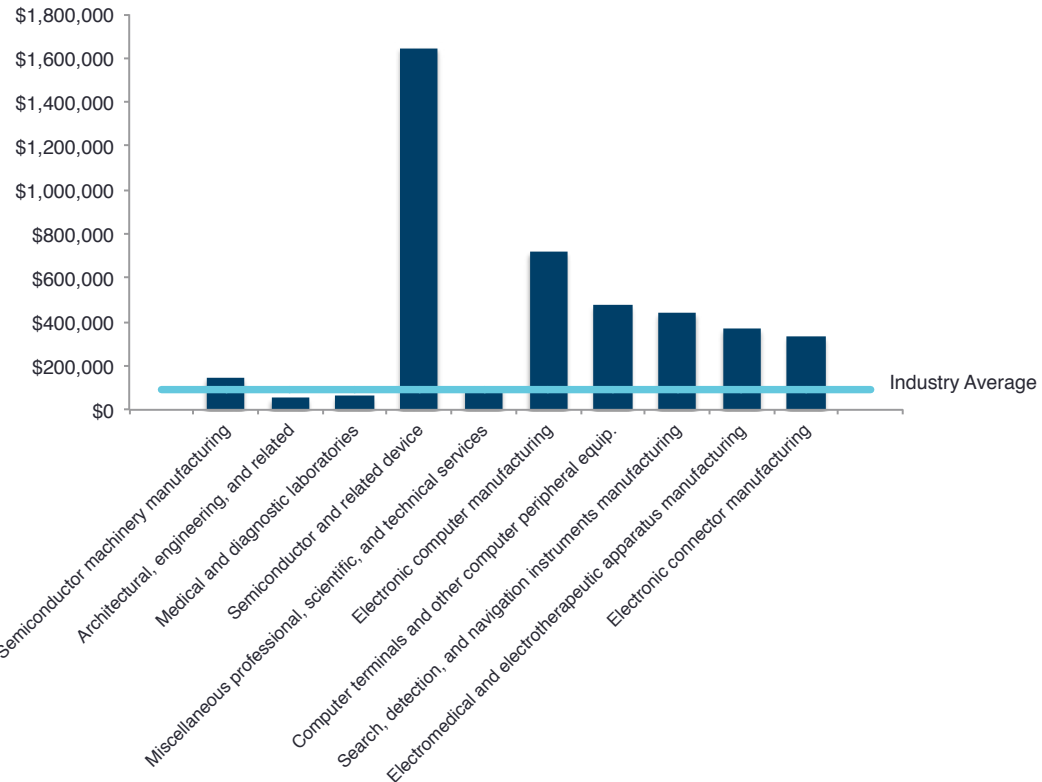
The types of degrees and training that Oregon Tech offers places graduates in high value-adding traded sector industries that are vital to the state economy. Value-added, or Gross State Product (GSP), is the market value of all goods and services produced in a state. GSP is an important indicator of efficiency in a local economy, and strong GSP growth is a tremendous attribute in economic development efforts.

Traded sector employers are those who do business outside the State of Oregon and thus bring new dollars to our regional economy. The educational efforts of Oregon Tech is key in providing able employees to support high value-adding businesses and industries within Oregon. The average value-added per employee across all industries in Oregon is \$89,780. Oregon Tech alumni participate in industries that produce up to \$1.6 million per employee - Semiconductor and related device manufacturing. The top industries employing Oregon Tech alumni are shown in Figure 8.

TABLE 10. OREGON TECH GRADUATE RANGES BY AREA OF STUDY

Aggregate Major Category	Low Salary	High Salary
Engineering	\$45,000	\$70,000
Geomatics	\$34,000	\$49,000
Health Care	\$46,000	\$80,000
IT	\$30,000	\$59,000
Management	\$20,000	\$77,000
Other	\$26,000	\$64,000

FIGURE 8. VALUE-ADDED PER EMPLOYEE BY SELECTED INDUSTRIES (2013)



IMPLAN, 2013

APPENDIX: IMPLAN SOFTWARE

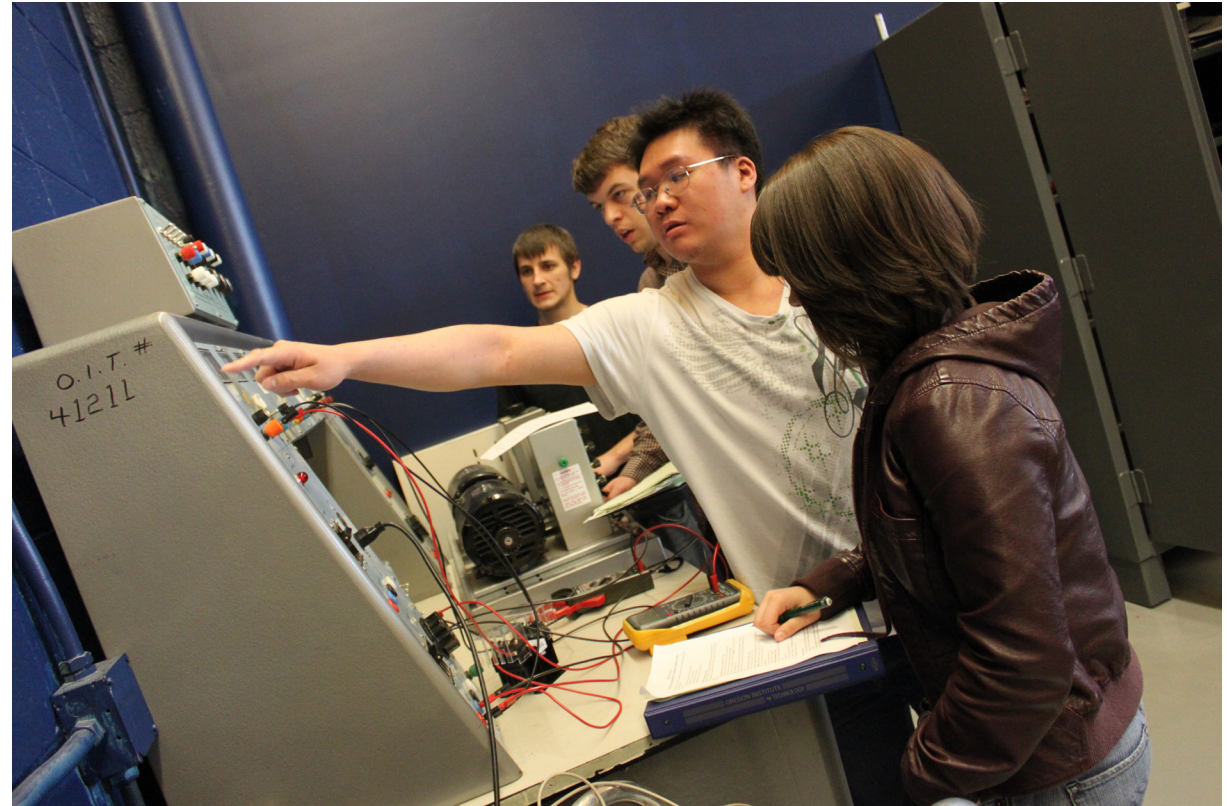
OVERVIEW OF ECONOMIC MODELING

Economists have developed several approaches to measure the contributions or economic impacts of companies on the communities in which they operate. The most common method estimates the economic and fiscal impacts associated with the company's spending on payroll, goods and services, and capital projects. This method is oftentimes referred to as the "expenditure approach."

Input-Output Modeling Framework

The expenditure approach is typically conducted within an input-output modeling framework. Input-output models are mathematical representations of the economy that show how different parts (or sectors) are linked to one another. The strengths of the input-output modeling framework include:

- a double-entry accounting framework that results in a model structure that is well ordered, symmetric, and where, by definition, inputs must be equal to outputs;
- a reasonably comprehensive picture of the economic activities within a region, with mathematical equations that describe the flow of commodities between producing and consuming sectors, the flow of income between businesses and institutions, and the trade in commodities between regions;
- model construction using secondary source data that are gathered and vetted by government agencies; and



- the ability to cost-effectively create input-output or economic impact models for any region.

Input-output models that rely on survey or primary source data are expensive to construct. As a result, special modeling techniques have been developed to estimate the necessary empirical relationships. These techniques use a combination of national technological relationships and state- and county-level measures of economic activity, and have been packaged into IMPLAN.

The IMPLAN Economic Impact Model

IMPLAN has been developed and distributed by the Minnesota IMPLAN Group, Inc., since 1993. The IMPLAN modeling system is widely used and well respected—there are currently more than 1,500 public and private users of the IMPLAN modeling software.

In general terms, the IMPLAN model works by tracing how spending associated with an industry circulates through an economy or study area. That is, changes in one sector or multiple sectors trigger changes in demand and supply throughout the economy. Initial changes in the model propagate through the economy via

supply- and demand-chain linkages, altering the equilibrium quantities of inputs and outputs and associated jobs, income, and value-added. These multiplier effects continue until the initial change in final demand leaks out of the economy in the form of savings, taxes, and imports.

Classifying Economic Impacts

Depending on the activity being analyzed, economic impacts can be classified by phases, types, and measures.

IMPACTS BY EXPENDITURE CATEGORY

This analysis shows the impacts associated with the following four major expenditure categories:

1. *Operating expenditures* include university payroll and purchases of goods and services.
2. *Capital expenditures* consist of building renovations, new construction, and seismic stabilization.
3. *Student spending* consists of all non-university, non-tuition spending.
4. *Visitor spending* includes spending at cultural and athletic events; academic events and graduation; and other events.

IMPACTS BY TYPE

Economic impact analysis employs specific terminology to identify the different types of economic impacts. The four terms of interest are as follows.

1. *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.

2. *Indirect Impacts* are the goods and services purchased for 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.

3. *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- and investment-driven stimulus. Employees at the organization, 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.

IMPACT MEASURES

The IMPLAN model reports the following measures of economic impacts:

1. *Output* represents the value of goods and services produced, and is the broadest measure of economic activity. Output can roughly be thought of as sales. In addition, for businesses to provide output, they must purchase intermediate goods and labor services. (Payments to labor are described below. Personal income is a subset of output and the two should not be added together.)
2. *Employee compensation (wages)* includes workers' wages and salaries, as well as other benefits such as health insurance, retirement payments; and non-cash compensation.

3. *Jobs*, according to IMPLAN's methodology, are measured in terms of full-year-equivalents (FYE). One FYE job equals work over twelve months in a given industry (this is the same definition used by the Bureau of Labor Statistics (BLS)). For example, two jobs that last six months each in 2012 count as one FYE job in 2012. A job can be full-time or part-time, seasonal or permanent; IMPLAN counts jobs based on the duration of employment, not the number of hours per week worked. Job impacts from operations are for one year of normal operations.

