

VII. STANDING COMMITTEES**A. Academic and Student Affairs Committee**

In Joint Session with

B. Finance, Audit and Facilities Committee**Economic Impact Report****INFORMATION ONLY**

The Office of External Affairs, in collaboration with UW Center for Commercialization, has commissioned an economic impact study which reports the economic and societal impacts the UW has in the state of Washington, the Puget Sound region and beyond. Tripp Umbach, a nationally recognized firm specializing in economic impact studies for large research institutions and universities, was selected for the project. Nichole Parker, Principal, and Paul Umbach, Senior Principal, will present the report findings.

Attachments

The Economic and Societal Impact of the University of Washington (FY 08-09)
(slides to be projected)

The Economic and Societal Impact of the University of Washington (FY 08-09)
(printed report)

The Economic and Societal Impact of The University of Washington (FY 08-09)

July 2010

About Tripp Umbach



- Tripp Umbach has experience throughout North America in completing economic impact studies for major research universities, hospitals, corporations and research partnerships.

Selected examples: Pennsylvania State University, Ohio State University, University of Minnesota, University of Michigan, University of Pittsburgh Medical Center, Mayo Clinic & Foundation, Cleveland Clinic, TGen and ISM.

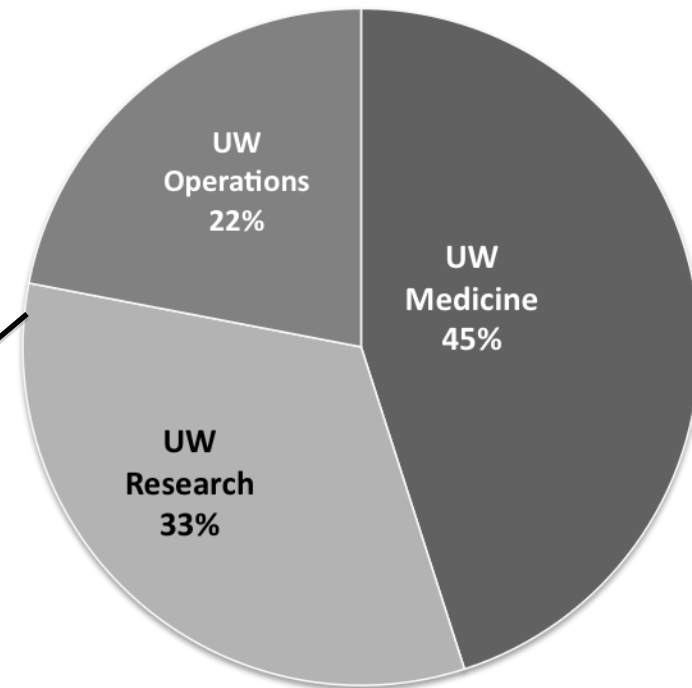
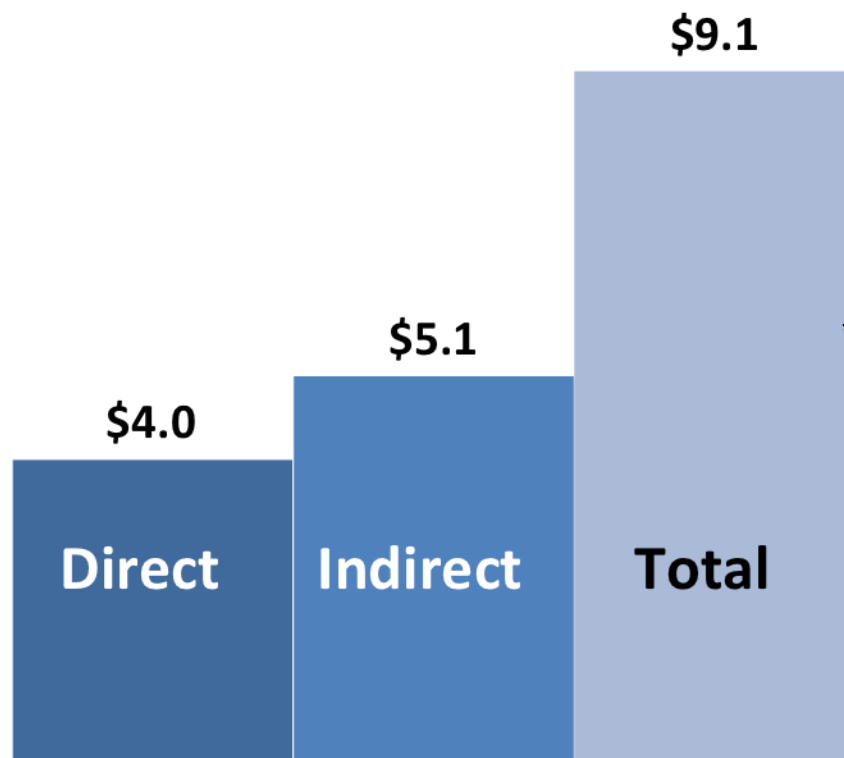
- Tripp Umbach has made numerous presentations on the topic of economic impact of universities and hospitals at state and national conferences.
- Since 1995, Tripp Umbach has completed national studies of the economic impact of all 130 medical schools and 400 teaching hospitals for the Association of American Medical Colleges (AAMC).

UW Economic Impact Study Goals

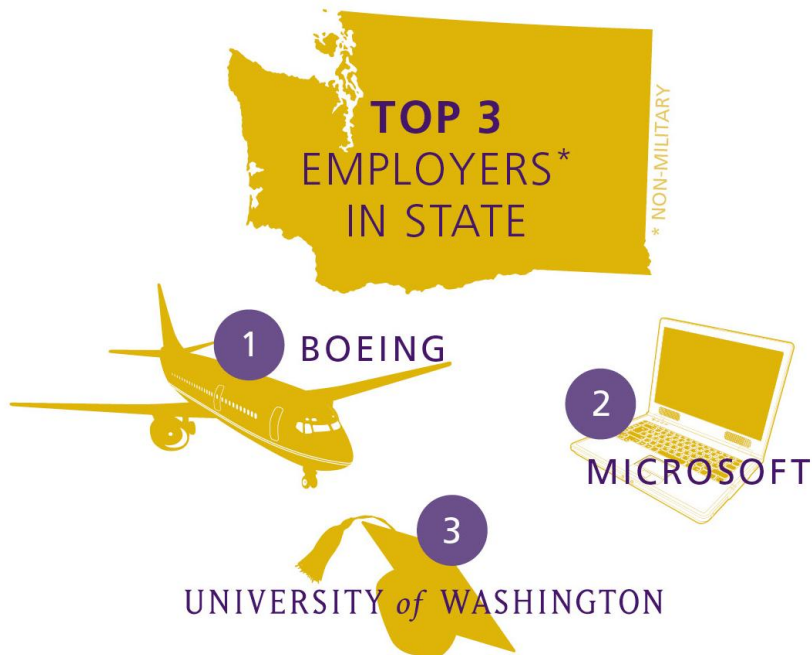
- To clarify the economic and employment impacts on Seattle, the greater Puget Sound and state of Washington.
- To better articulate the benefits of a global research institution and its partnership with the community, citizens and the state.

UW's Overall Economic Impact is \$9.1 Billion Per Year

Economic Impact of the UW (in billions)

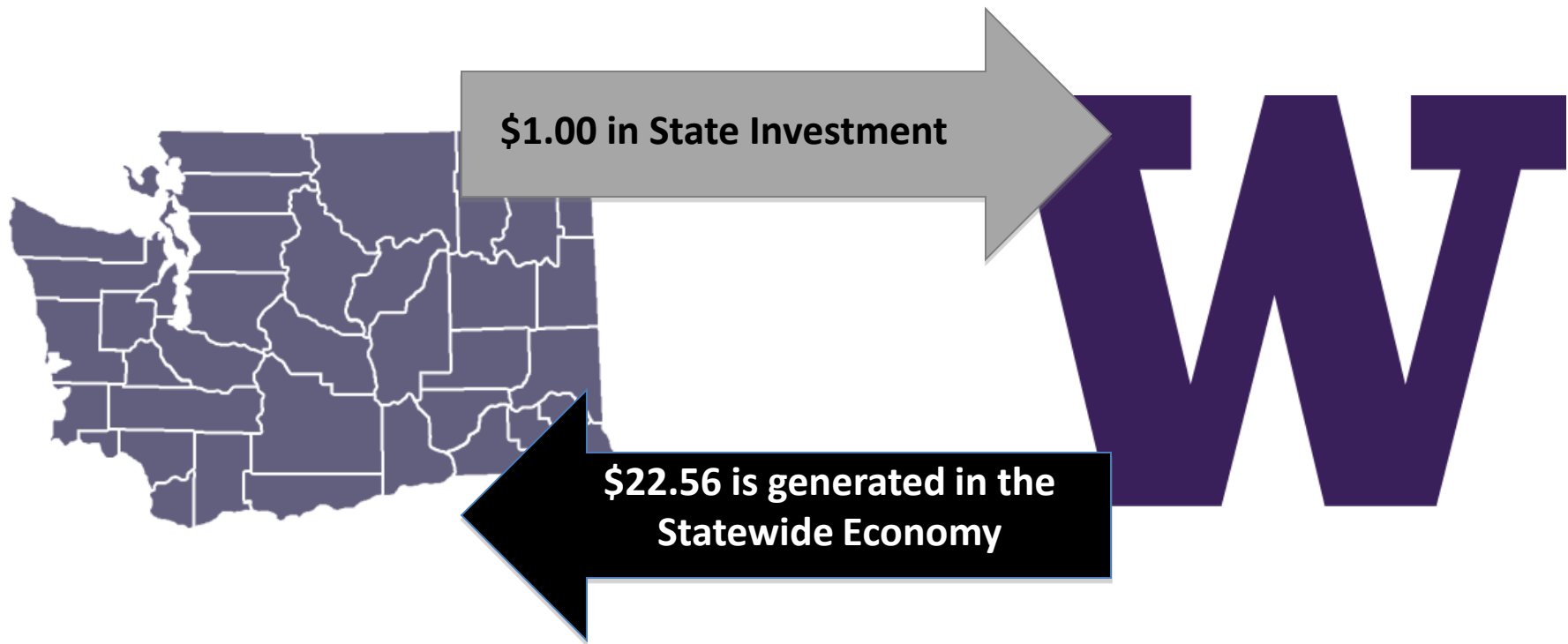


UW is a major generator of jobs



- 69,803 FTEs are supported by the UW
 - 27,921 direct FTE's
 - 41,882 indirect FTE's
- 3rd largest employer in state
 - Boeing (74,160 jobs)
 - Microsoft (38,405 jobs)
 - UW (29,243 jobs)
- 6.1% of the total labor force in Seattle

What is the UW's Return on Investment to the state of Washington?

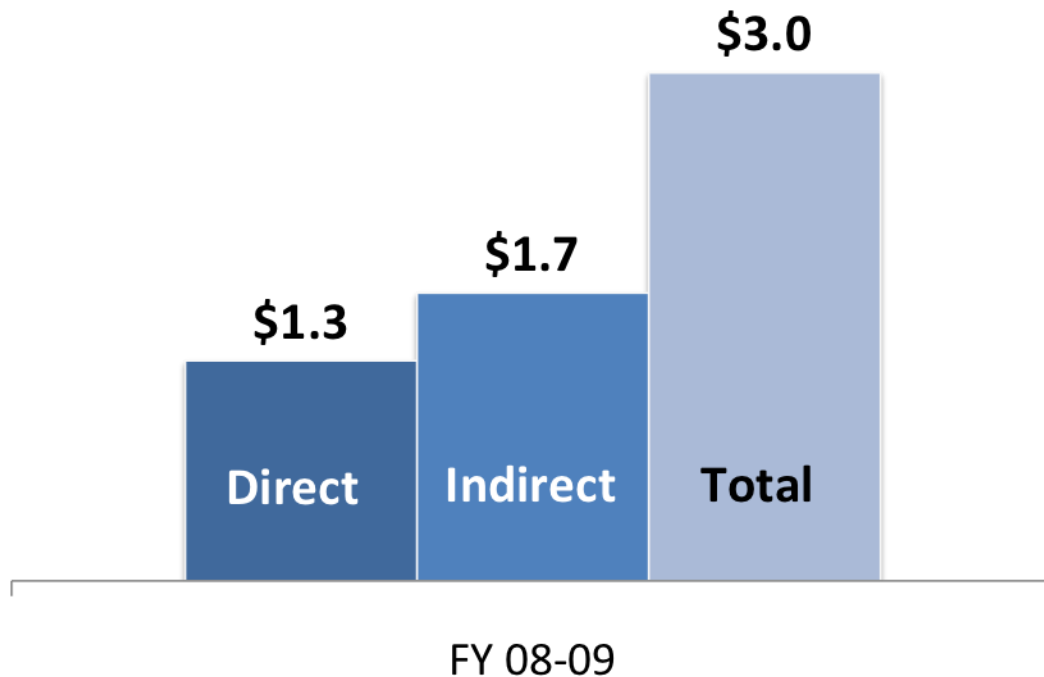


UW Strengthens State and Local Tax Revenue Collections

- \$1.00 in UW state funding, turns to \$1.48 in tax revenue to state government.
- UW generates \$618.1 Million per year in state and local tax revenue (\$84.5 Million direct).

UW Research is an economic engine for Washington State

Economic Impact of UW Research
(in billions)



- UW receives **more federal funding** than any other public university
- **22,626 jobs** are support by UW Research
- **250 companies** have been launched

The UW is strong community partner

The UW educates children, citizens, future employees, leaders and innovators

The UW makes Seattle, Puget Sound and the state of Washington a better place to live providing **\$395 Million** in community benefits including:

- **\$267 Million in free care** provided by UW Medicine
- **\$54.8 Million donated** to local charitable organizations by UW Faculty and Staff
- Over **346,000 hours of service** to area communities by UW students

Why is this important?

- \$9.1 Billion in economic impact to the state
- 70,000 jobs for Washington citizens
- Over \$22.00 returned to the state for every \$1.00 invested
- \$1.00 in state funding generates \$1.48 in tax revenue
- \$1.15 Billion in UW Research funding generates \$3.0 Billion in impact and supports over 22,626 jobs

Questions + Answers

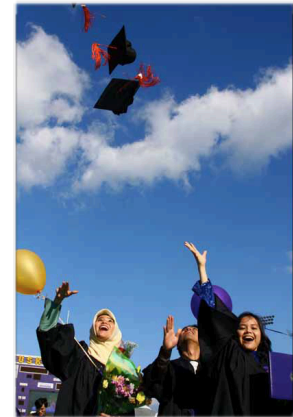


The Economic and Societal Impact of the University of Washington

Final Draft Executive Report (FY 08-09)
July 7, 2010



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UW Economic and Societal Impact

Key Findings

University of Washington Annual Impact on the Washington State Economy

\$9.1 billion in total economic impact generated by the UW in the state of Washington.

\$618.1 million in tax revenue to state and local governments, including sales, property, and business tax payments. For every **\$1.00** in state funding allocated to the UW, **\$1.48** in tax revenue is returned to the state.

\$1.00 invested by the State in the UW generates **\$22.56** in the total state economy.

12,000 students graduate annually from the UW, and **74% of alumni** stay in the state of Washington.

UW staff, faculty and students generate more than **\$394.5 million annually** in charitable donations, volunteer services, and provision of free care.

The UW Creates Jobs

The UW is the 3rd largest employer in the state of Washington.

69,803 UW-supported jobs are generated in Washington State.

One-third of these jobs are supported by \$1.15 billion in UW sponsored research.

INTRODUCTION

The University of Washington is a multi-campus university in Seattle, Tacoma and Bothell, as well as a world-class academic medical center. The UW has 17 colleges and schools and offers 1,800 undergraduate courses each quarter. The UW confers more than 12,000 bachelors, masters, doctoral and professional degrees annually. Though its primary missions are education, research, and community service, an institution as vast as the UW also is central to the fiscal health and well-being of the state of Washington. The University of Washington's daily operations provide ongoing financial benefits to the state's economy. The University significantly impacts the statewide economy through expenditures, government revenues, and the employment and personal income of residents.¹

The results presented in the University of Washington economic impact study are generated on an annual basis. The economic impact in future years can either be higher or lower based on the number of students, capital expansion, increases in external research and the level of state appropriations. Finally, it is important to note that the economic and employment impacts reported in this report represent the “fresh dollar” impact of UW. **Stated simply, if UW were not located in the state, \$9.1 billion in impact and more than 69,803 jobs would not be generated.**

UW Economic Impact Study Overview

Study Period: Fiscal Year 2008 - 2009 (FY 08-09)

This Study includes: UW Seattle, UW Bothell and UW Tacoma

Study Geography: Washington State, Puget Sound Region, including Seattle, Bothell and Tacoma

Methodology: American Council on Education (ACE), “Estimating the Impact of a College or University on the Local Economy.”

¹ According to IMPLAN analysis (2008 data), the overall size of state and local government supported education sector (industry code 438) in Washington State is \$13.1 billion in industry output, 218,219 jobs and \$11.6 billion in employee compensation.

PROJECT OVERVIEW

In December 2009, Tripp Umbach was retained by the University of Washington to measure the economic, employment and government revenue impacts of operations and research of all of its campuses and affiliates. The goals of the University of Washington economic impact study included the following:

- 🔊 To calculate the business volume impacts of the UW's operations on the state of Washington, Puget Sound Region including Seattle, Bothell and Tacoma.²
- 🔊 To calculate the total employment impact (direct and indirect) of the UW's operations.
- 🔊 To quantify the government revenue impact of the UW's operations and the return on investment for public funding.
- 🔊 To determine the economic impact of out of state research funding including research commercialization, patents and licensing, business spinoffs and the impact of the Center for Commercialization (C4C).

METHODOLOGY EMPLOYED IN THE UW ECONOMIC IMPACT STUDY

This economic impact analysis measures the effect of both direct and indirect business volume and government revenue impacts for the three UW campuses, Seattle, Bothell and Tacoma.³ The methodology employed in the calculation of these impacts is derived from the standard set of impact research tools developed by the American Council on Education (ACE) for the measurement of college and university economic impact.⁴ The ACE-based methodology is well established, having been used in hundreds of impact studies throughout the United States. The ACE methodology employs linear cash-flow modeling to track the flow of institution-originated funds through a delineated spatial area.⁵ For the University of Washington impact analysis, computerized spreadsheet models were developed

² The Puget Sound Region includes: King County, Snohomish County, Pierce County and Kitsap County.

³ UW Seattle includes a separate analysis of UW Medicine.

⁴ Caffrey, John and Isaacs, Herbert, "Estimating the Impact of a College or University on the Local Economy," American Council on Education, 1971.

⁵ The ACE methodology is highly adaptable to different geographic scales. It is suitable for measuring impact on neighborhoods, municipalities, counties, states, regions or nations.

for the University as a whole and for each of the campuses with a separate analysis of UW Medicine which is located on the Seattle Campus.⁶

Economic impact begins when an organization spends money. Economic impact studies measure the direct economic impact of an organization's spending plus additional indirect spending in the economy as a result of direct spending. Economic impact has nothing to do with dollars collected by institutions.

Total economic impact measures the dollars that are generated within Washington State due to the presence of the University of Washington. This includes not only spending on goods and services with a variety of vendors within the state, and the spending of its staff and visitors, but also the business volume generated by businesses within Washington that benefit from UW's spending. It is important to remember that not all dollars spent by a university remain in its home state. Dollars that "leak" out of the state in the form of purchases from out-of-state vendors are not included in the university's economic impact on the state. The multipliers utilized in this study are standard multipliers for public research universities in the United States with the state multiplier being 2.3 for the statewide business volume impact and 2.5 for the employment impact.⁷

In completing this report, Tripp Umbach used data supplied by the UW and from Tripp Umbach's national databases developed over the years by conducting economic impact studies commissioned by a variety of prominent universities and medical schools throughout the country as a baseline. Key economic impact findings presented within the summary include the total current (FY 08-09) economic, employment, and state and local government revenue impact of the University of Washington's operations.

⁶ The components of UW Medicine are Harborview Medical Center, University of Washington Medical Center, Northwest Hospital & Medical Center, and a network of seven UW Medicine Neighborhood Clinics that provide primary care, the UW School of Medicine, UW Physicians -- the physician practice plan and Airlift Northwest. In addition to the primary entities, UW Medicine shares in the ownership and governance of Children's University Medical Group and Seattle Cancer Care Alliance, and is closely affiliated with the Fred Hutchinson Cancer Research Center, Seattle Children's Hospital and the Veterans Administration (all affiliates).

⁷ Typically, multipliers for the operations of an organization are in the 2.0 to 4.0 range. The multipliers utilized in this study are derived from the in-depth research about the complex business activities of public research universities from the ACE-based methodology.

HOW UW SPENDING SUPPORTS THE STATE ECONOMY

The UW is an economic powerhouse in the state, directly or indirectly affecting every resident of Washington. It generates \$9.1 billion annually in overall economic impact. Statewide expenditures by the University totaled **\$4.0 billion** in FY 08-09. The University of Washington affects business volume in Washington State and the local region in two ways:

- 1) Direct expenditures for goods and services by the University, its employees, students, and visitors. This spending supports local businesses, which in turn employ local individuals to sell the goods and provide the services that University constituencies need.
- 2) Induced or indirect spending within Washington State. The businesses and individuals that receive direct expenditures re-spend this money within the state, thus creating the need for even more jobs.

As a result of expenditures on goods and services by the University, the overall economic impact of all the UW's operations on the state of Washington in 2009 was **\$9.1 billion** (\$4.0 billion direct impact and \$5.1 billion indirect). Included within this impact, UW Medicine has an overall economic impact of \$4.1 billion (\$1.8 direct and \$2.3 indirect). Therefore, **\$1.00 in every \$40.00 in the Washington State economy is supported by the University of Washington.**⁸

Economic Impact of the UW (in billions)

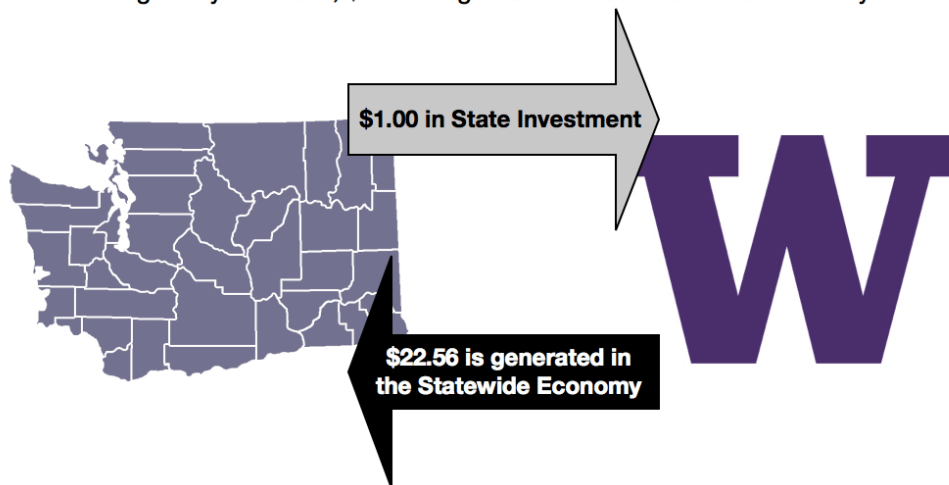


⁸ Total Washington State business volume is \$366,550,955,018.

In FY 08-09, the University of Washington received \$401.7 million in appropriations from the state of Washington. **For every \$1.00 invested by the State in the University of Washington, \$22.56 is generated in the state's economy.**

Return on Investment to the State of Washington

- In FY 2009, the University of Washington received \$401.7 million in financial support from the state of Washington. For every **\$1.00** invested in the University of Washington by the State, **\$22.56** is generated in the statewide economy.



STRENGTHENING STATE AND LOCAL GOVERNMENT THROUGH TAX REVENUES

State and local government revenues attributable to the presence of the University of Washington totaled \$618.1 million in FY 08-09 (\$84.5 million direct and \$533.6 million indirect). For every **\$1 in state funding allocated to the UW, \$1.48 in tax revenue is returned to the state.**⁹ Furthermore, state and local governments throughout Washington all received tax revenues that were University-related.

State and Local Government Revenue Impact of the UW by Campus				
	State Government Revenue Impact (Direct)	Local Government Revenue Impact (Direct)	Indirect Government Revenue Impact	Total Government Revenue Impact (Direct and Indirect)
UW Seattle	\$58,532,067	\$25,388,971	\$508,543,043	\$592,464,081
<i>UW Medicine</i>	<i>\$32,631,853</i>	<i>\$10,598,060</i>	<i>\$240,926,837</i>	<i>\$284,156,750</i>
UW Bothell	\$224,886	\$112,443	\$11,270,536	\$11,607,865
UW Tacoma	\$152,842	\$76,422	\$13,843,709	\$14,072,973
Total	\$58,909,795	\$25,577,836	\$533,657,288	\$618,144,919

Through its local spending as well as direct and indirect support of jobs, the presence of the University stabilizes and strengthens the local and statewide tax base. **The University of Washington is an integral part of the of state's economy -- generating revenue, jobs and spending.**

⁹ The return on investment to the state is based upon the total state government revenue (direct and indirect) generated by UW which equals \$592,567,083.

THE UW GENERATES JOBS

Both directly and indirectly, the University of Washington supported **69,803 FTEs** in Washington State (41,221 FTEs are UW MEDICINE-related). **One out of 50 jobs in the state is attributable to the UW.**

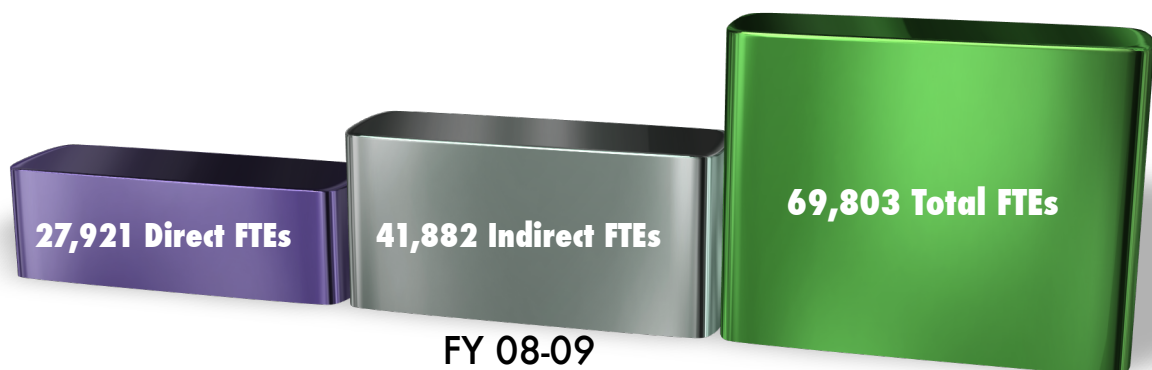
The University directly employed 27,921 full-time faculty and staff during FY 08-09 (16,488 FTEs are UW Medicine-related). These jobs include not only direct employment by the University but also indirect jobs created for supply and equipment vendors, contractors and laborers for the construction and renovation of university facilities, and jobs created in the community at hotels, restaurants and retail stores in support of the UW's workforce and its visitors.

One out of 50 jobs in the state of Washington is attributable to the UW.

The UW supports 69,803 jobs in Washington State.

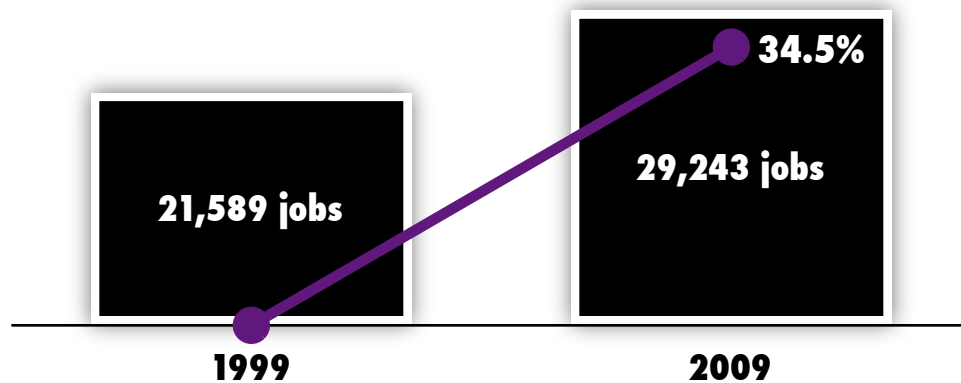
The University of Washington supports thousands of jobs annually statewide in virtually every sector of the Washington economy, such as construction, business and professional services, restaurants and hotels, information technology, security, and temporary employment companies. These indirect jobs (41,882 FTEs) are in support of the nearly 28,000 Washington residents who are employed directly by the University. In addition, the population of the University community—and the workers who support that community—also create a need for additional employees in governmental and service facilities, such as schools and day care facilities.

Employment Impact of the UW (FTEs)



Since 1999, direct employment at UW within the state of Washington has increased by 34.5% (7,654 jobs) which resulted in the creation of an additional 19,135 indirect jobs. Over the same decade, the total number of new jobs created in the state of Washington as a result of operations at the UW is 26,789 jobs (direct and indirect). This increase in jobs is can be attributed to the increase in external research dollars received by the UW.

Employment Growth of the UW (1999-2009)








UW's \$9.0 billion annual economic impact in Washington State generates significant numbers of jobs in the state, region, county and city.

- Following Boeing (74,160) and Microsoft (38,405), the UW is the third largest employer in the Puget Sound region (27,921).**
- Total direct and indirect FTEs from the UW in 2009 represent 3.5% of the total labor force in the Puget Sound region.**
- Total direct and indirect FTEs from UW Seattle Campus 2009 represent 6.1% of the total labor force in King County.**

UW RESEARCH GENERATES A FAR REACHING ECONOMIC IMPACT

As a major academic research center in the United States, the University of Washington annually brings hundreds of millions of dollars to the state in government and industry sponsored research and projects. The University of Washington has received an impressive \$1.15 billion in sponsored research funds, a tribute to the exceptional quality of their diverse and innovative faculty, students, staff, and the power of the UW intellectual community. **Every year, the UW receives more federal research funding than any other American public university, a ranking held since 1974.**

There are over 270 specialized research centers at the UW, including one National Science Foundation Science and Technology Center – the Center on Materials and Devices for Information Technology Research – and over 26 National Institutes of Health research cores and Centers of Excellence, including a major program called the “Institute for Translational Health Sciences,” one of 46 funded national NIH Clinical and Translational Sciences Award (CTSA). Leading centers include:

-  Alzheimer’s Disease Research Center
-  Autism Center
-  Center for Advanced Study and Research on Intellectual Property (CASRIP)
-  Center for AIDS Research
-  Center for Cell Dynamics
-  Center for Conservation Biology
-  Center for Digital Arts and Experimental Media
-  Center for Enabling New Technologies Through Catalysis (CENTC)
-  Center for Intracellular Delivery of Biologics
-  Center for Nanotechnology
-  Center for Women’s Health and Gender Research
-  Center on Human Development and Disability
-  Diabetes and Obesity Center of Excellence
-  Genomic Health Care and the Medically Underserved
-  Global Health Resource Center
-  Institute for Genetic Medicine
-  Institute for Health Metrics and Evaluation (IHME)
-  Institute for Stem Cell and Regenerative Medicine

Research scientists at UW Medicine explore every aspect of health and disease, from the molecular mechanisms of gene action to population studies of global illnesses. UW Medicine research scientists’ work has contributed to a greater understanding of the causes of disease and to better treatments and prevention of many disorders. Graduates of the UW School of Medicine – physicians, scientists, allied

health personnel, or scholars in medical history and ethics – go on to serve in a wide variety of capacities.

UW faculty members have been responsible for many basic science and technological advances in medicine. UW Medicine researchers are international leaders in genome sciences.

When the National Institutes of Health created the first three National Centers of Excellence in Genomic Sciences, the UW received two of the three awards – one in the School of Medicine and one in the College of Engineering.

UW Medicine faculty members are leaders in proteomics – research related to the biomolecular structure of proteins.

Understanding protein complexes may lead to treatment and prevention of devastating diseases. UW School of Medicine research provides a significant economic benefit to the community. **UW Medicine, together with all of its affiliates, generated more than \$900 million in research funds last year including**

\$713 million in funding from the NIH.¹⁰ A number of established and startup biotechnology companies, including Zymogenetics and ICOS, have their roots in UW School of Medicine research. One distinguishing characteristic of the UW medical school is interdisciplinary collaboration. Scientists, educators, and clinicians are dedicated to helping each other reach the common goals of improving people’s health and alleviating suffering from disease. UW Medicine has focused its South Lake Union research site on promoting large, interdisciplinary research.

As one of the most successful public research universities, both in total funding and in faculty talent, UW is a global leader in research and technological breakthroughs that transform the community,

RESEARCH AWARDS BY SCHOOLS AND COLLEGES FISCAL YEAR 2009

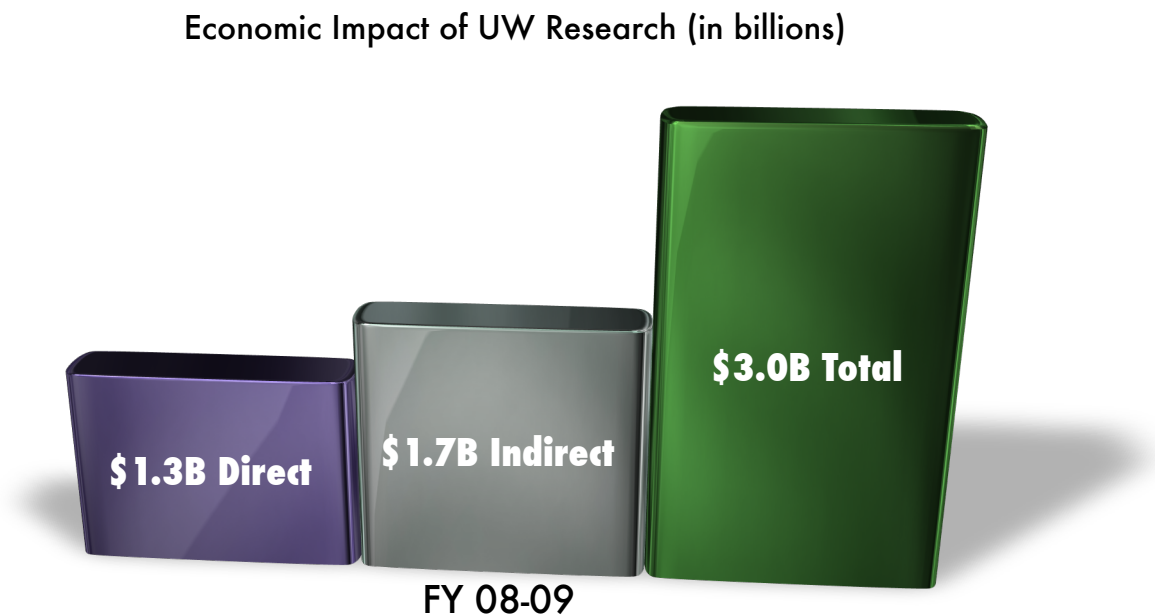
Arts & Sciences	\$107,392,122
Built Environments	\$1,981,265
Dentistry	\$11,471,603
Education	\$11,634,152
Engineering	\$84,684,658
Environment	\$17,413,803
Evans School of Public Affairs	\$3,771,717
Forest Resources	\$8,923,633
Foster School of Business	\$924,182
Graduate School	\$7,975,832
Health Science Spec. Programs	\$43,557,617
Information School	\$5,641,313
Law	\$3,060,946
Medicine	\$566,174,850
Nursing	\$13,967,311
Ocean & Fishery Sciences	\$86,165,468
Office of Research	\$1,547,225
Other Special Programs	\$47,983,305
Pharmacy	\$9,524,597
Public Health	\$87,911,317
Social Work	\$22,293,328
Undergraduate Education	\$272,265
UW Bothell and UW Tacoma	\$5,740,979

Source: UW Annual Report of Awards and Expenditures, FY 2009

¹⁰ Source: UW Medicine

region and the world. UW's research vision is to create an outstanding climate of support for University of Washington researchers, broadly enabling stellar research advances.

The UW's \$1.15 billion dollars in sponsored research translates into a significant economic impact. As a result of its strong research programs, **the economic impact of the UW Research engine is \$3.0 billion (\$1.3 billion direct impact and \$1.7 billion indirect impact).**



The University's research operations make tangible and quantifiable economic contributions. Along with creating jobs for research staff and support personnel, the UW scientists are contributing to new product development and technology commercialization. Knowledge and technology transfers have helped to start commercial ventures that promote entrepreneurship, economic development, and job creation.

In FY 08-09, the University of Washington received \$405.3 million in National Institutes of Health (NIH) funding. If you include all UW Medicine Affiliates, the total amount of NIH funding for that year grows to \$713 million.¹¹ The University is the second largest recipient of all

¹¹ Source: NIH Research Portfolio Online Reporting Tools (RePORT). http://report.nih.gov/award/trends/FindOrg_Detail.cfm?OrgID=9087701. This data included only the awards made directly to the University of Washington (\$405.3 million) and \$713 in NIH funding was received by UW Medicine Affiliates.

U.S. university recipients of federal science and engineering research and development obligations, according to the National Science Foundation's latest published information (FY 2006 figures).

The UW is an acknowledged international leader in the global health field. The UW Department of Global Health has over 200 faculty working in 50 countries around the world. According to an economic impact study completed by UW in 2005, Washington State's global health sector creates and supports over 43,000 jobs in Washington State and generates over \$1.7 billion in salaries, wages and benefits annually.¹² Governor Gregoire has stated that "Washington is home to one of the most vibrant, visionary global health communities in the world."

UW RESEARCH CREATES HIGH-QUALITY JOBS

In FY 08-09, the \$1.15 billion that the University received for sponsored research and other sponsored programs, supported 22,626 FTEs. These jobs include not only direct employment by the University of research professionals (9,050 direct FTEs) but also indirect jobs created for supply and equipment vendors, contractors and laborers for the construction and renovation of laboratory facilities, administrators and managers who support the research infrastructure and jobs created in the community by the disposable income of the scientific workforce.

Employment Impact of UW Research (in FTEs)



¹² Source: UW Department of Global Health; Economic Impact Assessment of Global Health on Washington State's Economy, 2005.

If the University can maintain its strong faculty base, it will continue to attract, and consequently spend, increasingly higher levels of research dollars, and the number of jobs supported will continue to grow. With continued high levels of research funding and consequent expenditures, the University will remain a source of support for thousands of local jobs based on its research funding alone.

REALIZING RESEARCH'S POTENTIAL

The University of Washington's Center for Commercialization (C4C) is one of the top five university technology transfer offices in the nation. UW C4C is committed to developing and commercializing innovations that emerge from the UW's diverse research endeavors. Such commercialization activities not only create a more "academically entrepreneurial" culture on campus, they also contribute much to the state's economy and its prospects for increased technology-driven prosperity.

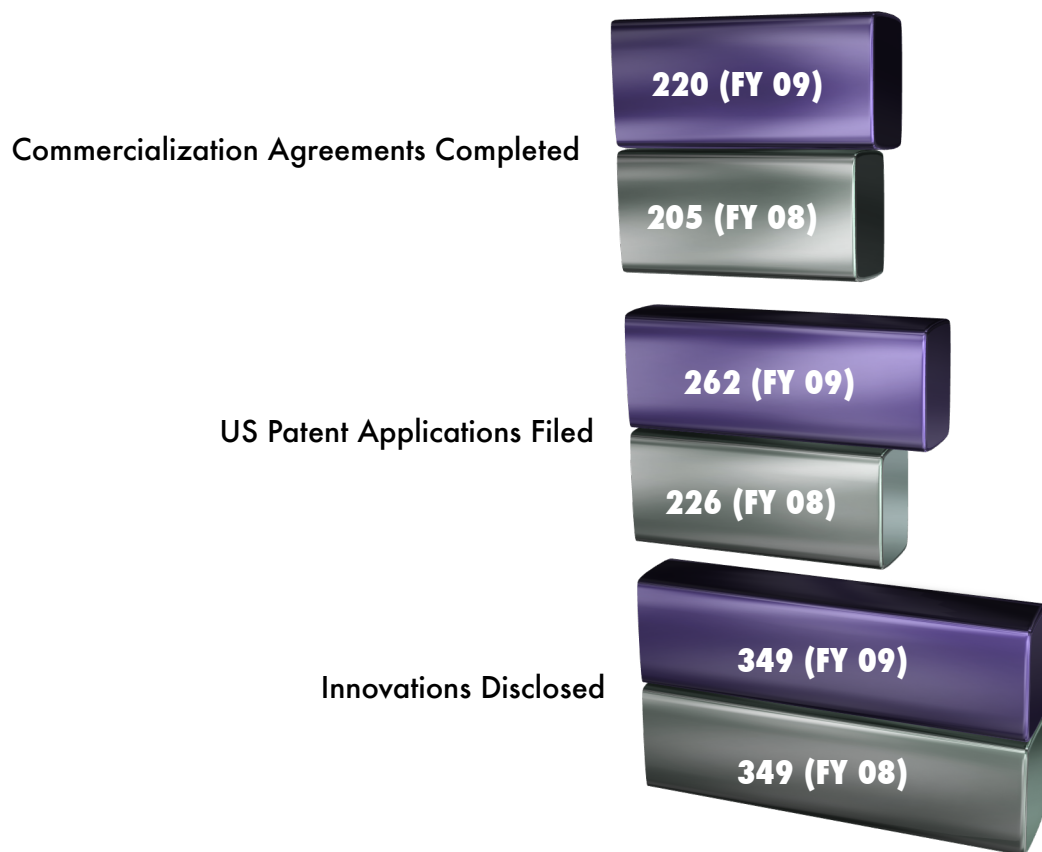
The UW C4C manages a total patent portfolio of over 2,200 issued and pending patents filed in the US and around the world. **Over 250 companies have been started by UW students and faculty or with UW technology.** Licensing revenue (royalties, fees, equity proceeds) of over \$50M was generated from UW technology in FY 08-09. Over \$20 million from this revenue was distributed to the University's Royalty Research Fund, which advances new directions in research. Almost \$9 million was distributed to various University departments to support research in these units and UW innovators earned \$12 million from the successful commercialization from their discoveries.

Two of the most important indicators of economic impact for UW C4C are the number of commercialization agreements executed and the number of startup companies formed. In FY 08-09, UW executed 220 commercialization agreements – fifteen more than the previous year. This metric is important because the number of companies using or selling products or services based on UW technology indicates the relevance of UW research. **The University of Washington has the largest number of licenses of all universities; UW is the most efficient in this regard, executing the most commercialization agreements per research dollar.**

In FY 08-09, ten new startup companies formed based on UW technology in fields including mechanical engineering, biochemistry, proteomics, computer science, bioengineering and radiology. These are fields where Washington is a national leader and which have high growth potential. University of Washington technologies and startup companies have historically played an integral role in Washington's status as a leader in technology-based industries. Medical imaging using ultrasound

developed in the 1970s was largely based on UW technology. The first company to sell a highly successful toothbrush using sound waves to clean teeth formed around UW technology. During the last 5 years, several UW startup companies were founded around the use of ultrasound for new therapeutic purposes, such as treating uterine fibroids. UW innovations have also been the basis for many software and Internet companies. More recently, the first Internet startup harnessing UW predictive algorithms to help consumers purchase airline tickets was acquired by Microsoft's Bing Travel.

UW Commercialization Activities (FY 07-08 and FY 08-09)



The UW does not just contribute to business enterprises through its research, it also actively promotes business enterprise formation, commercialization and expansion via University business incubators and small business advisory services. UW C4C has an Entrepreneurs-in-Residence (EIR) program where seasoned business executives look for start-up opportunities around UW technologies, and provide industry perspectives and guidance to UW researchers. UW C4C staff have assisted

researchers and Washington companies in winning numerous Small Business Innovation Research (SBIR) grants, totaling over \$1 million in 2009 alone. UW C4C has also been actively involved in forming a business incubator for the medical device industry. Research, and investments in research result in impacts outside of operations, specifically spin-off businesses, patents and licenses.

The impact of research is often not shown in the economy until years after its initiation. Based upon current research funding of \$1.15 billion, the economic impact of spin-off businesses and commercialization of research in existing companies is estimated to be between **\$3.66 billion (conservative) and \$6.6 billion (aggressive)** on the State's economy by 2020.¹³

University-based research has proved to have a substantial and measurable affect on business formation and economic development. Research performed by Adam Jaffe at Harvard found that "...a state that improves its university research system will increase local innovation both by attracting industrial R&D and augmenting its productivity."

Source: Jaffe, Adam B., "Real Effects of Academic Research," American Economic Review, March 1991, pp. 957-970.

¹³ Analysis is based upon Tripp Umbach's customized economic impact models quantifying the economic impact of research commercialization developed initially in 2001 for the Mayo Clinic and the University of Minnesota.

SUPPORTING STUDENTS AND ALUMNI

The 2008-09 academic year fall enrollment at UW was 45,903 students which includes undergraduate, graduate and professional students. The total number of international students (from 103 different countries) enrolled at UW as of December 2009 was 3,233. In total, UW students spent \$532.2 million for goods, services, and rental payments in the state of Washington during FY 08-09.

On average, 74% of UW graduates live and work in Washington State. Of the University's more than 317,522 living alumni, nearly 213,171 reside in Washington. In 2007, the average earnings of full-time, year-round workers more than 24 years old with a high school diploma were \$39,000—compared to \$68,000 for workers with a bachelor's degree. More specifically, it is estimated that UW alumni living in Washington earned \$14.5 billion in 2007 compared to the approximately \$8.3 billion, they would have earned without their UW degrees. The additional \$6.2 billion in earnings represent not only personal material benefits to individuals but also higher tax payments to federal, state, and local governments to help pay for essential services.

THE UW PROVIDES SUPPORT TO THE COMMUNITY

The University of Washington has been named to the 2009 President's Higher Education Community Service Honor Roll, the highest federal recognition a college or university can receive for its commitment to volunteering, service-learning and civic engagement. The UW is the only public, 4-year institution in Washington state to receive this recognition this year.

Collectively, UW students engaged in more than 346,000 hours of service from July 2008 through June 2009, the timeframe encompassed by this recognition. During those hours, students deepened their coursework and contributed to hundreds of community organizations through service learning; served as volunteer tutors in low-income preschools and public K-12 schools; led literacy, art, and environmental projects in rural and tribal schools across Washington over spring break; helped first-generation and low-income high school students apply for college; recruited underrepresented students to the UW; and supported admitted underrepresented students in their transition into the UW. UW programs involved in service activities include the Carlson Leadership and Public Service Center, the Dream Project, Jumpstart and the Pipeline Project, which are housed within

Undergraduate Academic Affairs, and Office of Minority Affairs and Diversity Student Ambassador and Mentor programs.¹⁴

The UW's total impact on the state of Washington goes beyond the annual economic impact presented above. Tripp Umbach estimates that **the University of Washington staff, faculty, physicians and students who received their education and training at the University of Washington generate more than \$394.5 million annually in charitable donations, volunteer services, and provision of free care.** These benefits (in addition to the \$9.1 billion annual impact) include the following:

- 🔊 In 2009, UW Medicine provided more than \$267.0 million in care to Washington State residents for which it did not receive full compensation (charity care or bad debt).
- 🔊 In 2009, UW staff and faculty donated \$54.8 million in 2009 to local charitable organizations.
- 🔊 UW staff and faculty provide a generous amount of hours in volunteer services. The economic value of such services is estimated at more than \$42.5 million.¹⁵
- 🔊 UW students (undergraduate, graduate and professional) provide benefits in the form of contributions to local charities, it is estimated that students donated nearly \$3.6 million to the local charities and that their volunteer activities are valued at nearly \$26.6 million, these dollars are also in addition to the economic impact outlined above.

UW PROFESSIONAL AND CONTINUING EDUCATION IMPACT

With hundreds of programs designed for adult learners, UW Professional and Continuing Education (UW PCE) provides a multitude of opportunities for residents of the state of Washington to advance their careers, begin new ones or pursue creative endeavors. UW PCE offers degrees, certificate programs, courses, conferences and executive-level seminars to many audiences in Seattle and

¹⁴ Source: <http://www.washington.edu/uaa/textpattern47/tp/features/133/HonorRollAwardForService>

¹⁵ Source: Tripp Umbach has conducted survey research where students (primary), staff and faculty (secondary) provide estimates on spending patterns, including information on the number of volunteer hours and charitable donations in which they provide. Tripp Umbach used a conservative assumption of \$20.10 per hour to calculate the value of volunteer services. This amount was originally calculated independently by the Points of Light Foundation.

throughout the state. Providing programs in easy-to-access evening, weekend and online formats, UW PCE serves professionals in all industry sectors, people who want to enter emerging careers, non-English speakers, and adults over 50, and other constituencies. **In FY 08-09, 5,976 courses were offered to a total of 45,681 participants.** Students include people like Judy Challoner who at age 52, after seventeen years at home with young children, completed the UW Certificate in Project Management and in 2007 quickly reentered the workforce as a project manager for a small biotech firm.

Continuing Education has an annual economic impact on the state of Washington of \$83.4 million dollars (\$36.2 million direct and \$47.1 million indirect). The total employment impact of this program is 1,154 FTEs (461 direct FTEs and 693 indirect FTEs).

PREPARING STUDENTS TO SUCCEED IN A GLOBAL ECONOMY

Approximately one in three jobs in Washington are tied to foreign exports, and the pay for these jobs is approximately 46% more than the overall state average.¹⁶ Washington exports set a new record in 2008 by growing to \$66.8 billion, a \$13.8 billion increase since 2006.¹⁷ In addition, Washington is the only state in the U.S. to maintain a positive trade balance with the People's Republic of China.

As the interdependence of economies throughout the world increases, the marketplace is rapidly shifting from local to global thereby necessitating a change in approach to business and education. The cross-border movement of goods, services, technology and capital necessitates that students have the opportunity to learn and understand the cultures and practices of other countries. The UW is at the forefront in preparing its students to compete in the global market.

Approximately 25% of all UW undergrads gain some type of study abroad experience. UW is ranked seventh in the nation in the total numbers of study abroad participants, is ranked second in the total number of study abroad students who go on medium-term study abroad programs (typically one quarter) and is ranked fourth in the total number of study abroad students who go on long-term programs (typically an academic year).¹⁸

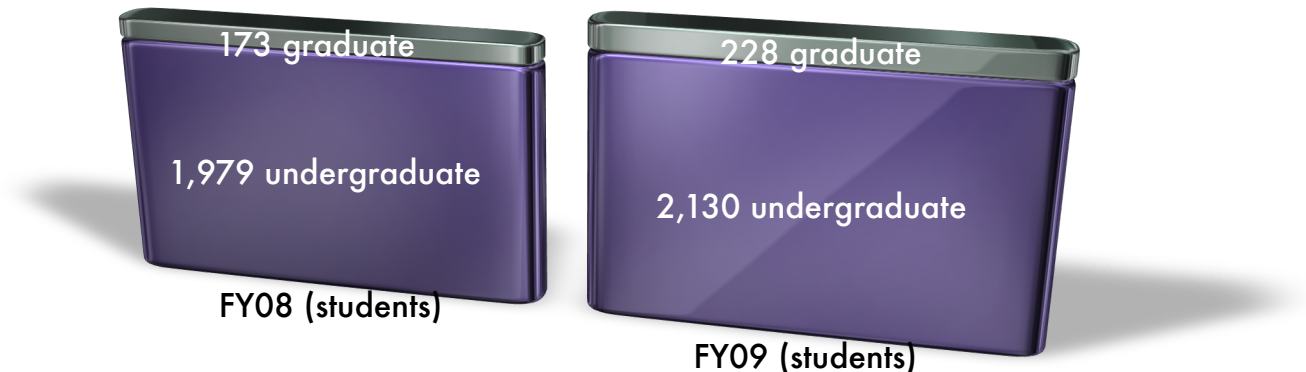
¹⁶ Source: Washington Public Ports Association.

¹⁷ Source: Washington Council on International Trade.

¹⁸ Source: Open Doors 2009 Report on International Education Exchange, issued by the Institute of International Education.

Studying abroad is often the defining moment in a student's educational experience, forever transforming his or her life. This activity promotes cultural awareness and diversity, encourages dialogue, opens minds, broadens perspectives and develops intellectual curiosity and skills so that students can better function in a global community. The number of students at UW who studied abroad in FY 08-09 was 2,358, an increase of 9% of the previous year. **Additionally, the UW has led the nation in the total number of alumni serving as Peace Corps volunteers for three straight years,** with 104 Husky alums serving in 2009.¹⁹ The UW teaches 58 foreign languages on a regular basis with 42 languages offered in the fall of 2009.

UW Students Studying Abroad



In addition to promoting international study-abroad, volunteerism and foreign language learning, the UW hosts a large international student population. In 2008, the UW hosted 2,970 International Students from 103 different countries, a 45% increase over the past ten years.²⁰ Total number of international students enrolled at UW as of December 2009: 3,233, or 7.7% of all UW students.²¹ The number of international students who stay in the US, with a large percentage remaining in Washington State after graduation from the UW is approximately 11.25% (421 students from a total of 3,731).²²

¹⁹ Source: U.S. Peace Corps Website.

²⁰ Source: UW International Student Services. Autumn 2009 Census Day figures for all registered international students, 3,310 total International students represent 7.7% of all UW graduate and undergraduate students.

²¹ Source: Autumn 2009 Census Day figures for all registered international students.

²² Note: This figure is the total number of F-1 students on Optional Practical Training after 9/30/09.

The UW prepares global citizens and continues to grow a knowledge-based workforce to help support the state of Washington. The UW is helping to grow the state as an innovation leader by increasing the number of undergraduate and graduate students in STEM areas of study -- or high demand programs.²³ Almost 35% of full-time UW students are taking science, technology, engineering and mathematics course work.

THE UW IS A MAGNET FOR TOURISTS

The University attracted thousands of visitors from outside the state of Washington in FY 08-09 who brought “new” money through their spending. Visitors came to the campus as prospective students, to see family or friends, to seek medical care as patients or to visit a patient, for business or educational purposes, to attend athletic events, and to see theater performances and other cultural events. Visitor spending in direct expenditures within Washington State associated with all groups was \$601.1 million in FY 08-09.²⁴

²³ STEM refers to Science, Technology, Engineering and Mathematics.

²⁴ Source: Data collected from UW regarding visitors to conferences and meetings from out-of-state, sporting events, visitors to students, visitors to staff and faculty from out-of-state and out-of-state patients and patient visitors.

Appendices

APPENDIX A: DEFINITION OF TERMS

Study Year	Fiscal Year 2008-2009 (FY 08-09)
Total Economic Impact	The total economic impact of an institution includes both the direct impact and the indirect impact generated in the economy as a result of the institution. Direct impact includes items such as institutional spending, employee spending, and spending by visitors to the institution. Indirect impact, also known as the multiplier effect, includes the re-spending of dollars within the local economy.
Total Business Volume	Total sales receipts generated within a given geographic area (state of Washington, Puget Sound, Seattle, Bothell, and Tacoma). Business volume includes wholesale, retail and service sector spending as well as value added in the manufacturing process.
Multiplier Effect	The multiplier effect is the additional economic impact created as a result of the institution's direct economic impact. Local companies that provide goods and services to an institution increase their purchasing by creating a multiplier.
Direct Tax Payments	Direct tax payments made by an institution to a unit of government.
Indirect Tax Payments	Government revenue that is collected by governmental units in addition to those paid direct by an institution, including taxes paid directly by employees of the institution, visitors to the institution, and vendors who sell products to the institution.
Direct Employment	Total Employees based on Full-Time Equivalents (FTEs)
Indirect Employment	Indirect employment is the additional jobs created as a result of the institution's economic impact. Local companies that provide goods and services to an institution increase their number of employees as purchasing increases thus creating an employment multiplier.

APPENDIX B: ECONOMIC IMPACT FINDINGS BY GEOGRAPHY

The table below details the economic impact of UW's operations on Washington State.

Economic Impact of UW (Overall Operations) on Washington State			
	Direct	Indirect	Total
UW Seattle	\$3,754,329,004	\$4,880,627,706	\$8,634,956,710
<i>UW Medicine</i>	<i>\$1,778,647,109</i>	<i>\$2,312,241,242</i>	<i>\$4,090,888,351</i>
UW Bothell	\$83,204,952	\$108,166,437	\$191,371,389
UW Tacoma	\$102,201,451	\$132,861,886	\$235,063,337
Total	\$3,939,735,407	\$5,121,656,029	\$9,061,391,436
Employment Impact of UW (Overall Operations) on Washington State, FTEs			
	Direct	Indirect	Total
UW Seattle	27,292	40,938	68,230
<i>UW Medicine</i>	<i>16,488</i>	<i>24,732</i>	<i>41,220</i>
UW Bothell	288	432	720
UW Tacoma	341	512	853
Total	27,921	41,882	69,803
Government Revenue Impact of UW (Overall Operations) on Washington State			
	Direct	Indirect	Total
UW Seattle	\$58,532,067	\$508,543,043	\$567,075,110
<i>UW Medicine</i>	<i>\$32,631,853</i>	<i>\$240,926,837</i>	<i>\$273,558,690</i>
UW Bothell	\$224,886	\$11,270,536	\$11,495,422
UW Tacoma	\$152,842	\$13,843,709	\$13,996,551
Total	\$58,909,795	\$533,657,288	\$592,567,083

The table below details the economic impact of UW's operations on the Puget Sound.

Economic Impact of UW (Overall Operations) on Puget Sound			
	Direct	Indirect	Total
UW Seattle	\$3,336,698,964	\$3,003,029,067	\$6,339,728,031
<i>UW Medicine</i>	<i>\$1,593,904,904</i>	<i>\$1,434,514,413</i>	<i>\$3,028,419,317</i>
UW Bothell	\$74,309,382	\$66,878,444	\$141,187,826
UW Tacoma	\$90,695,388	\$81,625,849	\$172,321,237
Total	\$3,501,703,734	\$3,151,533,360	\$6,653,237,094
Employment Impact of UW (Overall Operations) on Puget Sound, in FTEs			
	Direct	Indirect	Total
UW Seattle	24,563	29,476	54,039
<i>UW Medicine</i>	<i>14,839</i>	<i>17,807</i>	<i>32,646</i>
UW Bothell	259	311	570
UW Tacoma	307	368	675
Total	25,129	30,155	55,284
Government Revenue Impact of UW (Overall Operations) on Puget Sound			
	Direct*	Indirect	Total
UW Seattle	\$0	\$351,815,270	\$351,815,270
<i>UW Medicine</i>	<i>\$0</i>	<i>\$168,058,338</i>	<i>\$168,058,338</i>
UW Bothell	\$0	\$7,835,042	\$7,835,042
UW Tacoma	\$0	\$9,562,751	\$9,562,751
Total	\$0	\$369,213,063	\$369,213,063

The table below details the economic impact of UW's Seattle operations on Seattle, WA.

Economic Impact of UW (Overall Operations) on Seattle			
	Direct	Indirect	Total
UW Seattle	\$2,624,860,113	\$1,837,402,079	\$4,462,262,192
<i>UW Medicine</i>	<i>\$1,232,480,451</i>	<i>\$862,736,316</i>	<i>\$2,095,216,767</i>
Total	\$2,624,860,113	\$1,837,402,079	\$4,462,262,192
Employment Impact of UW (Overall Operations) on Seattle in FTEs			
	Direct	Indirect	Total
UW Seattle	18,024	16,222	34,246
<i>UW Medicine</i>	<i>11,542</i>	<i>10,388</i>	<i>21,930</i>
Total	18,024	16,222	34,246
Government Revenue Impact of UW (Overall Operations) on Seattle			
	Direct	Indirect	Total
UW Seattle	\$25,388,971	\$78,784,824	\$104,173,795
<i>UW Medicine</i>	<i>\$10,598,060</i>	<i>\$36,992,735</i>	<i>\$47,590,795</i>
Total	\$25,388,971	\$78,784,824	\$104,173,795

The table below details the economic impact of UW's Bothell operations on Bothell, WA.

Economic Impact of UW Bothell on Bothell, WA			
	Direct	Indirect	Total
UW Bothell	\$60,984,437	\$42,689,106	\$103,673,543
Employment Impact of UW Bothell on Bothell, WA (in FTEs)			
	Direct	Indirect	Total
UW Bothell	173	156	329
Government Revenue Impact of UW Bothell on Bothell, WA			
	Direct	Indirect	Total
UW Bothell	\$112,443	\$19,843,524	\$19,955,967

The table below details the economic impact of UW's operations on Tacoma, WA.

Economic Impact of UW Tacoma on Tacoma, WA			
	Direct	Indirect	Total
UW Tacoma	\$73,490,546	\$51,443,382	\$124,933,928
Employment Impact of UW Tacoma on Tacoma, WA (in FTEs)			
	Direct	Indirect	Total
UW Tacoma	205	184	389
Government Revenue Impact of UW Tacoma on Tacoma, WA			
	Direct	Indirect	Total
UW Tacoma	\$76,422	\$23,912,848	\$23,989,270

APPENDIX C: METHODOLOGY

Impact on State Business Volume and Government Revenue

The university is a major employer in the state and, as such, a major generator of personal income for state residents. Businesses operating within Washington in the wholesale, retail, service and manufacturing sectors benefit from the direct expenditures of the institutions and their faculty, staff, students and visitors on goods and services. In addition, many of these "direct" expenditures are re-circulated in the economy as recipients of the first-round of income re-spend a portion of this income with other businesses and individuals within the state. This re-spending is termed the "multiplier" or "indirect" effect.

This economic impact analysis measures the effect of both direct and indirect business volume and government revenue impacts for the three campuses. The methodology employed in the calculation of these impacts is derived from the standard set of impact research tools developed by the American Council on Education (ACE) for the measurement of college and university economic impact.²⁵ The ACE-based methodology is well established, having been used in hundreds of impact studies throughout the United States. Tripp Umbach has previously used the same methodology in Pennsylvania in a multi-campus university study of the impacts of medical schools.²⁶

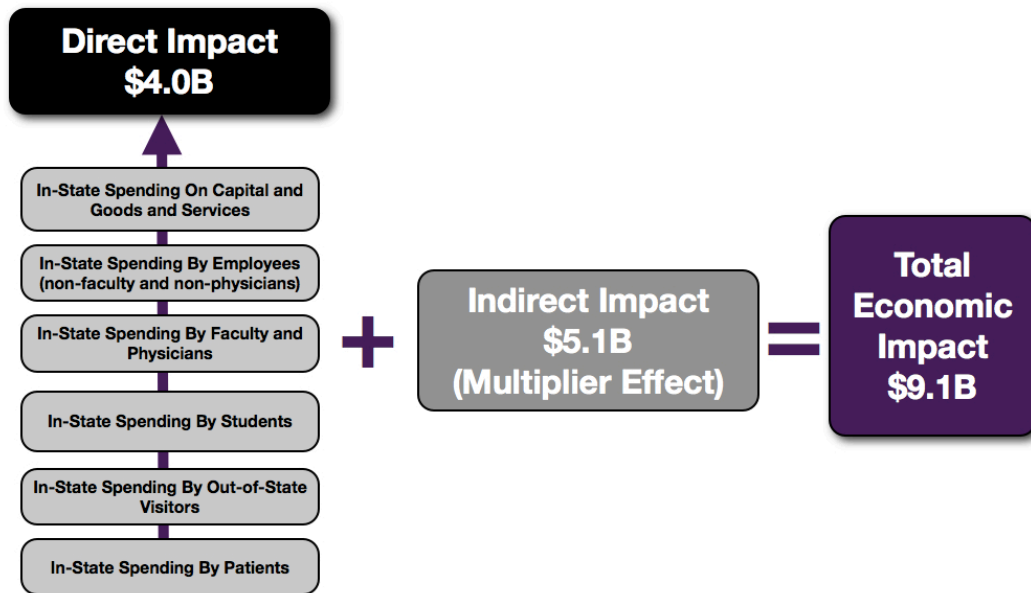
The ACE methodology employs linear cash-flow modeling to track the flow of institution-originated funds through a delineated spatial area.²⁷ For the UW impact analysis, computerized spreadsheet models were developed for the University as a whole and for each of the locations of the University, with the models measuring impact on the state economy and government revenues. The figure below shows the general components of the impact models used for the University of Washington study.

²⁵ Caffrey, John and Isaacs, Herbert, "Estimating the Impact of a College or University on the Local Economy," American Council on Education, 1971.

²⁶ Tripp Umbach & Associates, Inc., "The Economic Impact of Medical Centers of Excellence on the State Of Pennsylvania." Harrisburg, Pennsylvania The Economic Development Partnership Taskforce on Medical Centers of Excellence, 1995. Pennsylvania academic medical centers sponsoring the study included the Allegheny Health Education and Research Foundation (AHERF: incorporating Hahnemann University and the Medical College of Pennsylvania), Penn State Hershey Medical Center, the University of Pennsylvania Health System, University of Pittsburgh Medical Center, Thomas Jefferson University and Temple University.

²⁷ The ACE methodology is highly adaptable to different geographic scales. It is suitable for measuring impact on neighborhoods, municipalities, counties, states, regions or nations.

Economic Impact Components



By using this economic impact model, the Tripp Umbach research team has been able to provide UW with a detailed quantification of the total direct and indirect impact of the University on the economy of Washington and on each of locations where UW has operations. The impact models provide measures of business volume and state government revenues allocable to the university, together with breakouts of the individual categories of spending that comprise the total impact (e.g. institutional capital spending, student spending, faculty spending, etc.).

Employment Impact

The research reported here measures the direct employment impact of the University. In addition, the research quantifies the indirect employment generated at instate businesses by expenditures emanating from the university. An employment multiplier of 2.5 was generated by Tripp Umbach for the University of Washington project. The multiplier for UW is comparatively higher due to the large amount of out-of state visitors and research grants and the impact of out-of-state students and their visitors.

Data Sources

As noted above, this research project closely follows the ACE methodology for the performance of impact analysis for a higher education institution. The methodology requires that a university supply detailed information related to expenditure levels and geographic location of expenditures, together with staffing and other related economic information. The main sources of data used in the University of Washington economic impact study are as follows:

Data Supplied by Individual Departments: The majority of information required for the individual departmental sections of the models and the report was provided by each university department directly. Tripp Umbach developed a customized data collection form which was distributed to each respective department for completion and analysis.

Data Collected by Surveys Administered to Students and Alumni: Data on students and alumni were collected through quantitative surveys administered via email. These surveys gathered information on campus visits, volunteer activities, charitable contributions and other key data required for the impact modeling.

Secondary-Sourced Data: Census data from the economic census, together with Bureau of Labor Statistics information were required for completion of the models. Tripp Umbach gathered budgetary information for each of the UW campuses and UW Medicine to facilitate the modeling of government revenue impacts allocable to the University. To complete the economic impact models, Tripp Umbach used student, faculty, and staff spending data from primary data and assumptions from other studies completed for similar universities and other recent projects throughout the country.

APPENDIX D: PEER UNIVERSITY AND INDUSTRY COMPARISONS

Peer Comparisons

University of Washington's operational impact of \$9.1 billion annually compares quite favorably with other universities. **UW generates more economic activity per dollar of state investment than any other peer university.** It is noteworthy however, that each economic impact study is unique and these comparisons are not based upon identical methodologies or data collection practices.

Peer University Comparisons					
Peer University	State Investment FY 07-08	State Investment FY 08-09	Economic Impact*	Statewide Economic Activity Generated per Dollar of State Investment	Efficiency of Dollars
University of Washington	\$390.8 M	\$401.7 M	\$9.1 B (2009, ACE)	\$22.56	\$401.7M in investment leads to \$9.1B in impact
University of North Carolina	\$596.3 M	\$622.1 M	\$10.4 B (2009, REMI)	\$16.72	\$622.1M in investment leads to \$10.4B in impact
University of California, Los Angeles	\$589.8M	\$584.1 M	\$9.3 B (2008, REMI)	\$15.92	\$584.1M in investment leads to \$9.3B in impact
University of Minnesota	\$711.3 M	\$697.4 M	\$9.6 B (2003, IMPLAN)	\$13.76	\$697.4M in investment leads to \$9.6B in impact
*Note: The methodologies utilized to complete the economic impact studies by the peer universities in the table vary by entity. It is also important to note that Tripp Umbach did not perform the analysis for these economic impact studies.					

Washington State Economy Overview

The 2007 total gross state product for Washington was \$311.2 billion, placing it 14th in the nation. The per capita personal income in 2007 was \$41,203, 10th in the nation. Significant business within the state include the design and manufacture of jet aircraft (Boeing), computer software development (Microsoft and Nintendo of America), electronics, biotechnology, aluminum production, lumber and wood products (Weyerhaeuser), retail (Amazon.com, Costco, Starbucks and Nordstrom), mining and tourism. In addition, the state has significant amounts of hydroelectric power generation. Fortune magazine survey of the top 20 Most Admired Companies in the US has four Washington based companies in it Starbucks, Costco, Microsoft and Nordstrom.

Washington's economy is global with approximately one in three jobs being tied to foreign exports, and the pay for these jobs is about 46% more than the overall state average.²⁸ Washington exports set a new record in 2008 by growing to \$66.8 billion, a \$13.8 billion increase since 2006.²⁹ Significant amounts of trade with Asia pass through the ports of the Puget Sound. Export markets are crucial to Washington State's farmers and ranchers. One-third of Washington-grown products are shipped overseas. In 2008, Washington agricultural exports reached \$14.8 billion, an increase of 60% over 2007, and 116% higher than 2006.³⁰ It is noteworthy that Washington is the only state in the U.S. to maintain a positive trade balance with the People's Republic of China.

²⁸ Source: Washington Public Ports Association

²⁹ Source: Washington Council on International Trade

³⁰ Source: Washington State Department of Agriculture

Comparisons to Other Industry Segments in Washington State

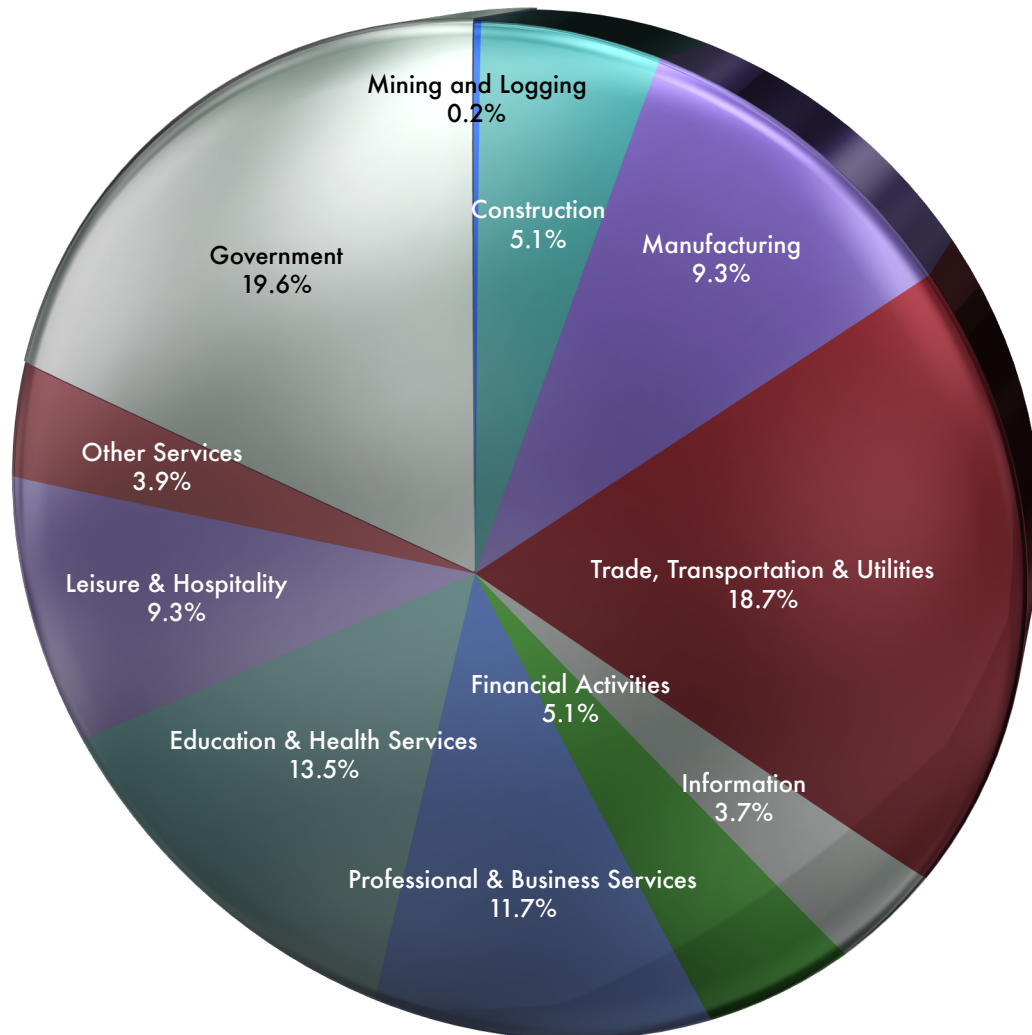
According to analysis completed by the US Bureau of Labor and Statistics published in December 2009, the top three employment clusters in the state of Washington are: 1) government, 2) trade, transportation & utilities and 3) education & health services.³¹ The table below profiles the employment numbers by job type in the state of Washington.

Washington State Economy (December 2009)	
Labor Force Data*	
Civilian Labor Force	3,511.1
Employment	3,186.6
Unemployment	324.5
Unemployment Rate	9.2%
Non-Farm Wage and Salary Employment**	
Total Non-Farm	2775.1
Mining and Logging	5.6
Construction	142.2
Manufacturing	257.8
Trade, Transportation, and Utilities	520
Information	101.3
Financial Activities	140.2
Professional & Business Services	323.7
Education & Health Services	373.5
Leisure & Hospitality	258.9
Other Services	107.8
Government	544.1
*Number of persons, in thousands, seasonally adjusted.	
**Number of jobs, in thousands, seasonally adjusted.	

³¹ Source: Bureau of Labor and Statistics, December 2009.

The graphic below depicts the percentage of jobs by sector in the Washington State economy.

State of Washington Employment by Sector (percentage of jobs)



APPENDIX E: FAQs REGARDING ECONOMIC IMPACT ASSESSMENT

What is economic impact?

Economic impact begins when an organization spends money. Economic impact studies measure the direct economic impact of an organization's spending plus additional indirect spending in the economy as a result of direct spending. Economic impact has nothing to do with dollars collected by institutions, their profitability or even their sustainability, since all operating organizations have a positive economic impact when they spend money and attract spending from outside sources.

Direct economic impact measures the dollars that are generated within Washington State due to the presence of the University of Washington. This includes not only spending on goods and services with a variety of vendors within the state, and the spending of its staff and visitors, but also the business volume generated by businesses within Washington that benefit from UW's spending. It is important to remember that not all dollars spent by a university remain in its home state. Dollars that "leak" out of the state in the form of purchases from out-of-state vendors are not included in the university's economic impact on the state.

The total economic impact includes the "multiplier" of spending from companies that do business with UW. Support businesses may include lodging establishments, restaurants, construction firms, vendors, temporary agencies, etc. Spending multipliers attempt to estimate the ripple effect in the state economy where the spending occurs. For example: Spending by a UW campus with local vendors provides these vendors with additional dollars that they re-spend in the local economy, causing a "multiplier effect."

What multipliers were used in this study?

Tripp Umbach uses economic impact (also referred to as business volume impact) multipliers recommended by the American Council on Education. The indirect impacts represent the re-spending which takes place in the study areas. The multipliers utilized this study are based upon research conducted by Caffrey and Isaacs in 1971, and are appropriate for major research universities.

Economic Impact Multipliers: State business volume multiplier = 2.3 and County business volume multiplier = 1.6

What methodology was used in this study?

The methodology employed in the calculation of the impact of the University of Washington was derived from the standard set of impact research tools developed by the American Council on Education (ACE) for the measurement of college and university economic impact. The ACE-based methodology is well-established, having been used in hundreds of impact studies throughout the United States. The ACE methodology employs linear cash-flow modeling to track the flow of institution-originated funds through a delineated spatial area.

What is employment impact?

Employment impact measures the direct employment (staff, faculty, administration) plus additional employment created in the economy as a result of the economic impact of the University of Washington.

Indirect employment impact refers to other employees throughout the region that exist because of the UW's economic impact. In other words, jobs related to the population – city services (police, fire), employees at local hotels and restaurants, clerks at local retail establishments, residents employed by vendors used by the UW.

The approximate ratio of direct to indirect state employment for the University of Washington is 1 to 2.5. This is a much stronger ratio than other industries, which is typically 1 indirect job for every 1 direct job.

How is the tourism impact of an institution measured?

Universities are by nature major tourism destinations. Students, faculty and staff visit universities on a regular basis for conferences and meetings. Parents and friends visit students frequently and the general public travels to universities for sporting events, concerts and cultural events. The economic impact models created by Tripp Umbach for the University of Washington calculate the net impact of spending within the state of Washington from visitors from outside of the state. The tourism impact of a major university represents hundreds of millions of dollars annually in the flow of “fresh” dollars, dollars attracted from out-of-state, into the state's economy. The models do not include spending by visitors within Washington who travel to any of UW's campuses or to UW Medicine.

What is the difference between direct and indirect taxes?

Direct tax dollars include sales taxes and net corporate income taxes paid directly by the institution to the state, while indirect taxes include taxes paid to the state by vendors that do business with the University of Washington.

Is this a one-time impact or does the impact repeat each year?

The results presented in the University of Washington economic impact study are generated on an annual basis. The economic impact in future years can either be higher or lower based on number of students, capital expansion, increases in external research and state appropriations.

What types of economic impacts are typically presented in a comprehensive economic impact report?

There are three standard measures that institutions use when measuring and communicating their economic impact:

1. Direct spending — How many direct dollars spent annually by the university, its employees and its visitors that remain in the state of Washington.
2. Indirect spending — How many direct dollars are spent annually by businesses that receive money from UW within the state of Washington.
3. Induced impacts — How many direct dollars are spent annually as a result of the products and services provided by an organization. One example is the capitalization of research innovation. Induced economic impact occurs when new products are developed based on research conducted at UW.

What are Tripp Umbach's qualifications to perform an Economic Impact Study for the University of Washington?

Tripp Umbach is the national leader in providing economic impact analysis to leading health care organizations, universities and academic medical centers. We have completed more than 150 economic impact studies over the past 20 years for clients such as The Pennsylvania State University, The Ohio State University, Mayo Clinic Rochester, Cleveland Clinic, University of Florida Shands HealthCare, the University of North Carolina Hospitals, the University of Pennsylvania Medical Center, the University of Pittsburgh Medical Center, and the Ohio State University Medical Center.

Tripp Umbach recently finished the fourth national study of all 125 medical schools and 400 teaching hospital affiliates for the Association of American Medical Colleges. Tripp Umbach has completed statewide studies for multiple institutions in Ohio, New York, Pennsylvania, Virginia, South Carolina, Wisconsin and Minnesota. Finally, our firm has completed economic impact studies at the metropolitan level in Boston, Pittsburgh, Philadelphia, and Chicago.

APPENDIX F: UW MEDICINE ECONOMIC IMPACT FINDINGS



Introduction

Nationwide, academic medical centers are major economic drivers in the U.S. economy. With a total economic impact of more than \$500 billion in 2008, America's academic health care industry was responsible for 3.6% of the total U.S. economy.

Founded in 1946, the UW School of Medicine is recognized for excellence in training primary-care physicians and for advancing medical knowledge through scientific research. The UW School of Medicine is nationally-recognized for a commitment to community service through volunteer activities of students, staff, faculty and alumni. The School is a regional medical school serving the states of Washington, Wyoming, Alaska, Montana and Idaho - the WWAMI program.

UW School of Medicine has been ranked the No. 1 primary care medical school in the country for 17 consecutive years and is second only to Harvard in the amount of NIH funded research conducted by its faculty. In addition, UW Medicine teaching programs are ranked among the best in the country in the 2010 rankings by U.S. News & World Report.

- 🏆 Family medicine (No. 1, for the 18th year in a row)
- 🏆 Rural medicine (No. 1, for the 18th year in a row)
- 🏆 AIDS (No. 4)
- 🏆 Bioengineering (No. 5, joint program with College of Engineering)
- 🏆 Internal medicine (No. 6)
- 🏆 Geriatrics (No. 6)
- 🏆 Pediatrics (No. 8)
- 🏆 Women's health (No. 9)

Full-time physician faculty members of UW School of Medicine staff, UW Medical Center and Harborview Medical Center, UW Medicine Neighborhood Clinics and the Seattle Cancer Care Alliance. Physician faculty members also provided the vast majority of care at the Puget Sound Veterans Affairs Healthcare System and Seattle Children's Hospital. In addition, UW physician faculty provide expert consultation to practicing physicians throughout the region.

Research scientists at UW Medicine explore every aspect of health and disease, from the molecular mechanisms of gene action to population studies of global illnesses. UW Medicine research scientists' work has contributed to a greater understanding of the causes of disease and to better treatments and prevention of many disorders. Graduates of the UW School of Medicine – physicians, scientists, allied health personnel, or scholars in medical history and ethics – go on to serve in a wide variety of capacities.

UW faculty members have been responsible for many basic science and technological advances in medicine. UW Medicine researchers are international leaders in genome sciences. When the National Institutes of Health created the first three National Centers of Excellence in Genomic Sciences, the UW received two of the three awards – one in the School of Medicine and one in the College of Engineering.

UW Medicine faculty members are leaders in proteomics – research related to the biomolecular structure of proteins. Understanding protein complexes may lead to treatment and prevention of devastating diseases. UW School of Medicine research provides a significant economic benefit to the community. **UW Medicine, together with all of its affiliates, generated more than \$900 million in research funds last year including \$713 million in funding from the NIH.³²** A number of established and startup biotechnology companies, including Zymogenetics and ICOS, have their roots in UW School of Medicine research.

One distinguishing characteristic of the UW medical school is interdisciplinary collaboration. Scientists, educators, and clinicians are dedicated to helping each other reach the common goals of improving people's health and alleviating suffering from disease. UW Medicine has focused its South Lake Union research site on promoting large, interdisciplinary research.

³² Source: UW Medicine. This data included only the awards made directly to the University of Washington (\$405.3 million) and \$713 in NIH funding was received by UW Medicine Affiliates.

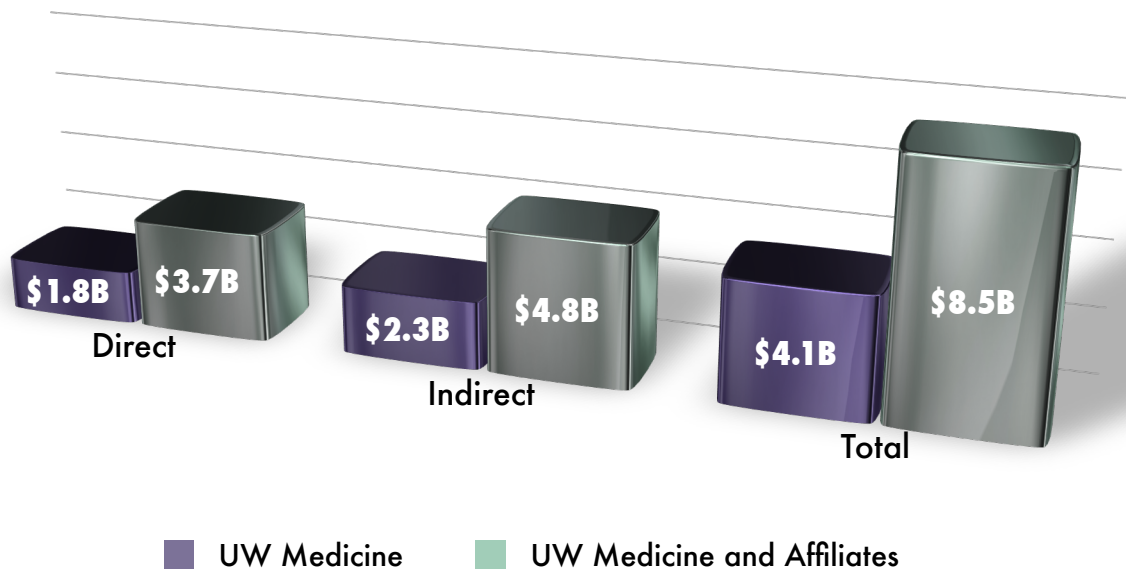
UW Medicine owns or operates Harborview Medical Center, University of Washington Medical Center, a network of seven UW Medicine Neighborhood Clinics that provide primary care, the UW School of Medicine, the physician practice UW Physicians and Airlift Northwest. In January of 2010, Northwest Hospital & Medical Center became the seventh entity of UW Medicine.³³ UW Medicine also has a one-third ownership interest in the Seattle Cancer Care Alliance and a one-half ownership interest in the Children's University Medical Group, the faculty practice plan serving Seattle Children's Hospital. Major affiliates include the Fred Hutchinson Cancer Research Center, Seattle Children's Hospital and the Puget Sound VA Health System.

Statewide Economic Impact

In 2009, UW Medicine had an economic impact on the state of Washington of \$4.1 billion. When all the major affiliates are included, the economic impact reaches \$8.5 billion. The economic impact was calculated at three separate geographic levels: Washington State, Puget Sound Region and Seattle. The statewide findings are presented in report with the other geographies presented in tables at the end of this appendix. These numbers exclude the impact of Northwest Hospital & Medical Center since the affiliation was not implemented until January of 2010. However, the impact of Northwest Hospital was calculated separately.

³³ The economic impact of Northwest Hospital in FY 08-09 was \$739.0 million (\$321.3 direct), 3,683 FTEs (1,473 direct) and a government revenue impact of \$49.7 million (\$6.2 million in direct payments to state and local government).

Economic Impact UW Medicine, 2009



The \$8.5 billion economic impact of UW Medicine (all affiliates) includes \$3.7 billion in direct business volume impact and a further \$4.8 billion in indirect economic impacts accruing to the economy through the multiplier.³⁴

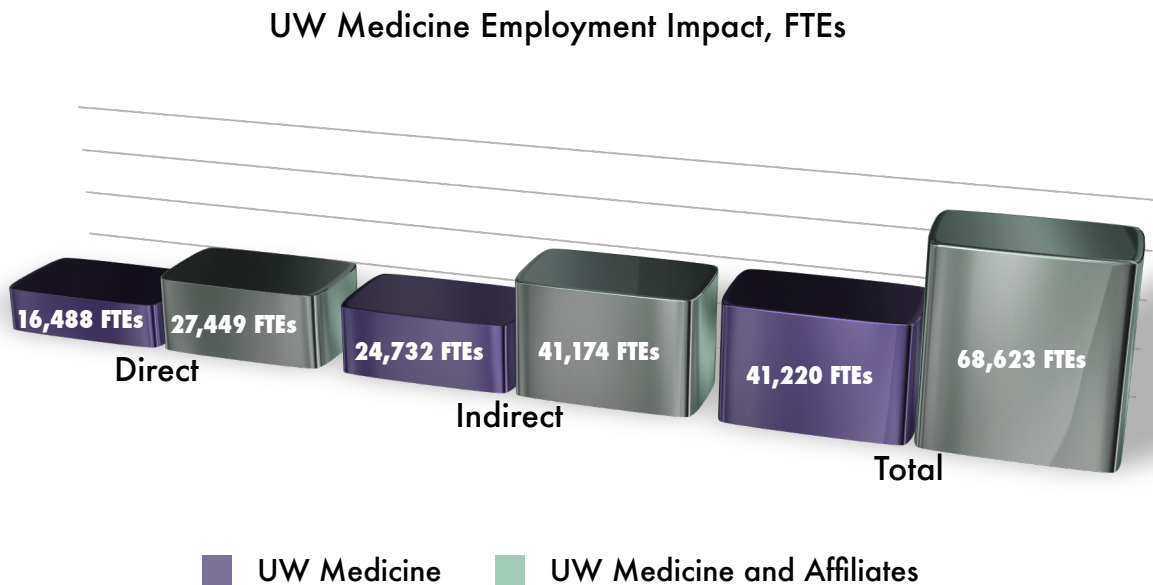
Statewide Employment Impact

Collectively in 2009, UW Medicine and its affiliates directly employed 27,449 people in Washington. However, the total impact on statewide and regional employment is far greater. Direct employment is only the beginning of a powerful story of how the operations of UW Medicine drive additional employment at hotels, restaurants, construction firms, laundry and cleaning services, and professional service companies. Total direct and indirect employment generated by UW Medicine and all affiliates was 68,623 FTEs. The employment impact of UW Medicine in 2009 was 41,220 FTEs.

The business volume generated by the academic medical centers creates jobs in a broad range of sectors throughout the Washington State economy. These jobs are proportionate to the service needs of the academic medical centers themselves and their related populations (staff, physicians, students,

³⁴ Tripp Umbach uses a state business volume multiplier of 2.3, which is recommended by the American Council on Education (ACE). This multiplier is used to calculate the indirect impact, or the re-spending which takes place in the State due to the initial round of academic medical center spending within the State.

etc.). In addition, state and local tax revenues generated by UW Medicine and their related business volume create government employment opportunities.



Government Revenue Impact

It is a common misperception that medical schools and hospitals do not generate government revenue. While UW Medicine and its teaching affiliates include governmental and not-for-profit entities, UW Medicine's in-state spending and the income derived from out-of-state sources have a significant impact on state tax revenue. With \$284.4 million in annual state and local tax revenue generated by UW Medicine (\$43.2 million direct), academic medicine is critical to state and local governments. UW Medicine and affiliates generated \$555.6 million in state and local tax revenue (\$56.9 million direct).

State and Local Government Revenue Impact of UW Medicine				
	State Government Revenue Impact (Direct)	Local Government Revenue Impact (Direct)	Indirect Government Revenue Impact	Total Government Revenue Impact (Direct and Indirect)
UW Medicine	\$32,631,853	\$10,598,060	\$240,926,837	\$284,156,750
UW Medicine and Affiliates	\$42,581,257	\$14,360,193	\$498,708,061	\$555,649,511

Value of Training and Retaining Physicians

The economic impact of each new practicing physician is estimated by Tripp Umbach at \$1.5 million annually. With a growing shortage of physicians nationally, the addition of approximately one-hundred physicians each year is a true competitive advantage for the Washington State economy. Tripp Umbach estimates the impact of medical school graduates, who remain within the State to practice medicine, represents an additional impact of nearly \$33.0 million annually.³⁵

Value of Uncompensated Care

While the economic impact of institutional expenditures and job creation in Washington are substantial, so too are the contributions that academic medicine makes to the care of the uninsured and underinsured. Uncompensated care is a major financial burden on teaching hospitals and integrated academic health organizations. Although academic medical centers comprise less than 6% of the nation's acute care hospitals, estimates show that they provide 45% of uncompensated care in the United States.³⁶ Given the challenging economic times, an increasing number of individuals are either uninsured and underinsured. This is a major concern to institutions that are already operating on razor thin margins, and whose missions are to treat everyone, regardless of ability to pay.

The healthcare industry as a whole has not been dramatically affected by the recession as of yet, however, many academic medical centers have felt major effects. State budget cuts in hospital support, such as Medicaid, as well as cuts in educational programs, have meant a decrease in services, salary cuts and/or reductions in workforce. In addition, the decline in private philanthropy has added to the need for caution and cutbacks. These cutbacks are unfortunately occurring at a time when the need for uncompensated care funding has been at an all time high, taxing many of these institutions further.

UW Medicine provided \$267.0 million in uncompensated and or charitable care in 2009, representing about one-third of the total amount of charity care provided in Washington State. This does not take into consideration the cost of health fairs, or free care clinics run by many medical school students, or

³⁵ This number is derived from the assumption that approximately 45 students (matching class size 167) stay instate after graduation for residency training, and that 48% of them stay in the state to practice medicine. This analysis is based upon data supplied to Tripp Umbach by UW Medicine.

³⁶ Interview with Robert Dickler, Senior Vice President of Health Care Affairs of the Association of American Medical Colleges (AAMC), 2001. <http://www.physiciansnews.com/cover/201wp.html>

the time that students provide as volunteers in the local communities. The healthcare outcomes and cost savings as a result of these efforts are not easy to quantify. According to the Association of Academic Health Centers (AAHC), academic health centers, on average, provide almost \$44 million in uncompensated patient care each year, and one in seven provides more than \$100 million, acting as a primary public safety net.³⁷

The table below details the economic impact of UW Medicine's operations on Washington State.

Economic Impact of UW Medicine on Washington State			
	Direct	Indirect	Total
UW Medicine	\$1,778,647,109	\$2,312,241,242	\$4,090,888,351
UW Medicine and Affiliates	\$3,681,722,055	\$4,786,238,671	\$8,467,960,726
Employment Impact of UW Medicine on Washington, in FTEs			
	Direct	Indirect	Total
UW Medicine	16,488	24,732	41,220
UW Medicine and Affiliates	27,449	41,174	68,623
Government Revenue Impact of UW Medicine on Washington			
	Direct	Indirect	Total
UW Medicine	\$32,631,853	\$240,926,837	\$273,558,690
UW Medicine and Affiliates	\$42,581,257	\$498,708,061	\$541,289,318

³⁷ http://www.aahcdc.org/policy/reddot/FG_AHC_Creating_the_Knowledge_Economy_04-09.pdf

The table below details the economic impact of UW Medicine's operations on the Puget Sound.

Economic Impact of UW Medicine on Puget Sound			
	Direct	Indirect	Total
UW Medicine	\$1,609,771,983	\$1,448,794,785	\$3,058,566,768
UW Medicine and Affiliates	\$3,178,836,895	\$2,860,953,205	\$6,039,790,100
Employment Impact of UW Medicine on Puget Sound, in FTEs			
	Direct	Indirect	Total
UW Medicine	14,839	17,807	32,646
UW Medicine and Affiliates	24,704	29,645	54,349
Government Revenue Impact of UW Medicine on Puget Sound			
	Direct	Indirect	Total
UW Medicine	\$0	\$168,058,338	\$168,058,338
UW Medicine and Affiliates	\$0	\$335,170,590	\$335,170,590

The table below details the economic impact of UW Medicine's operations on Seattle.

Economic Impact of UW Medicine on Seattle			
	Direct	Indirect	Total
UW Medicine	\$1,232,480,451	\$862,736,316	\$2,095,216,767
UW Medicine and Affiliates	\$2,320,263,724	\$1,624,184,607	\$3,944,448,331
Employment Impact of UW Medicine on Seattle, in FTEs			
	Direct	Indirect	Total
UW Medicine	11,542	10,388	21,930
UW Medicine and Affiliates	19,214	17,293	36,507
Government Revenue Impact of UW Medicine on Seattle			
	Direct	Indirect	Total
UW Medicine	\$10,598,060	\$36,992,735	\$47,590,795
UW Medicine and Affiliates	\$14,360,193	\$69,642,405	\$84,002,598