



The University of Montana: Growing Montana's Economy

PREPARED FOR:

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The University of Montana: Growing Montana's Economy

REPORT HIGHLIGHTS

This report documents the research findings of how the operations and the output of The University of Montana – Missoula result in a larger, more prosperous, and more populous Montana economy. The additional earnings power of its graduates, the contributions of its research, patents and inventions, and the millions of dollars of business it conducts with Montana vendors of products and services extend its ultimate economic footprint to all corners of the state.

Based on an analysis of the interactions between UM and the state economy, we find that:

- 9,700 Montana jobs,
- \$1.0 billion in after-tax income,
- \$200 million in state tax revenues, and
- \$352 million in annual investment spending

are attributable to the presence of the University. Additionally, this report finds that the average compensation per job throughout Montana is \$1,346 higher because of UM. All of these results take the generous tax support and tuition dollars the University receives from Montanans into account.

As Montana continues to face the challenge of growing and nurturing the kind of sustainable economic growth that can provide jobs that pay well for our families and children, the findings of this report underscore the vital role of The University of Montana in supporting and leading those efforts.



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Research Summary

RESEARCH SUMMARY

The University of Montana is a major generator of economic wealth throughout the state of Montana. Its presence in the state economy makes the economic pie significantly bigger. Our analysis indicates that 9,700 jobs, more than \$1.0 billion in after-tax income, and almost \$200 million in state tax revenues are attributable to the presence of UM – Missoula in the Montana economy. The presence of UM increases average compensation per worker for all jobs in Montana by more than \$1,300. These impacts are net of tax revenues, tuition, and other spending by Montanans in support of UM. They come about as the spending of the University, the extra earnings realized by its graduates, the spending of visitors, and the University's wide-ranging research activities combine to produce a state economy that is larger, higher paying, and more productive. Because the earnings premium for college-educated workers continues to grow over time, all of these impacts are expected to be substantially higher in the future. Even with no growth in the University, 20 years from today its operations will produce an economy with more than 13,500 additional jobs, more than \$2.3 billion in after-tax income, and more than \$410 million in additional state tax revenues in Montana. The bottom line is that the University has been, and continues to be, a vital catalyst for growth in the state economy.



Introduction

High-quality universities coexist with healthy, vibrant economies. The connection between learning and economic advancement has never been stronger than in the highly innovative and fast-changing economy of today. Universities play a key role in nurturing and advancing the state of knowledge. Their interaction with the economy produces a net gain that propagates far beyond their campuses.

The contributions of The University of Montana – Missoula (UM) to the state go well beyond the beneficial changes it produces in Montana’s economic and fiscal environment. The preparation of the next generation of leaders, contributions to culture and the quality of life, and the entertainment value of its sporting events are only a few of the many ways in which the University makes the lives of all Montanans more fulfilling.

Yet the economic contributions are substantial, and in some corners of the state, less well-known or appreciated. The objective of this study is to produce a comprehensive research report that draws a tight connection between the operation of the University and the size of the economic pie that all Montanans share.



Introduction

THE RESEARCH QUESTION

The core question in this study is: What would the economy of the state of Montana look like if The University of Montana did not exist? Using tools which track and measure the interaction of the key sectors of the Montana economy, the study examines a hypothetical world that removes the spending and output of UM. The difference between the economy of today and the hypothetical economy with no university is the total economic impact of UM. That impact can be thought of as the sum of three pieces:

Direct impact. This is the impact that the operations of the University itself have on the economy. The items in this list are incredibly varied. UM pays employees and vendors, attracts research dollars from governments and industry, and increases the earning power of its students when they graduate. It also hosts sporting events and sells merchandise. UM attracts out-of-state scholars and students. It receives tax support from the state of

Montana. All of these mechanisms directly impact the economy of the state.

Indirect impacts. These are the economic activities that occur in the state of Montana because of the University, but are not part of the University itself. Companies that locate in Montana because of the presence of the University, visitors and tourists, technology companies with informal links to the University, and even highly educated workers who come to Montana because their spouses are employed at UM are examples of these.

Induced impacts. An economic stimulus such as the University produces changes in the economy that go beyond its direct and indirect impacts. When businesses and employees are economically enriched through the University's activities, they further stimulate the economy through the increases in their spending that result. This "second-round" impact is significant and can be estimated with the use of an economic model that captures the linkages between spending and production for the Montana economy.



Introduction

STATEWIDE ANALYSIS

Few would be surprised to learn that The University of Montana has a large economic impact on Missoula. The city is host to a university where more than 14,000 students from all parts of the state and beyond reside. These students and their families spend money on tuition, rent, food, and countless other goods and services. The University receives the generous support of taxpayers from all parts of the state, as well as significant federal and private funds in support of both education and research. And the wages and salaries of more than 2,800 UM employees who work in Missoula fuel spending that adds significantly to the local/regional economy.

From the perspective of the entire state, however, the resources that come from within the state of Montana to support UM – such as tax support, tuition and other spending of Montana residents – do not represent an addition to the state economy. The analysis must recognize that if The University of Montana did not exist, the Montana-based resources devoted to supporting it would be free to be used on other things.

This study finds that The University of Montana – Missoula has a significant impact on the state economy, even after accounting for the money and resources from Montanans expended on its behalf. Broadly speaking, this comes about for three basic reasons:

- The University of Montana – Missoula attracts significant support from outside the state of Montana through nonresident student spending and its success in acquiring research funds. These dollars represent new money for the state economy that is attributable to the presence of the University;
- Those who receive their education from the University can expect to earn significantly higher incomes as a result. Higher incomes, productivity, and spending of Montana residents who are UM graduates are significant additions to the state's economic pie;
- Because University spending is dominated by payroll, UM education and research has a higher “made in Montana” fraction than most good and services consumers might buy. Thus taking money away from general spending and directing it toward the University results in a net gain to the Montana economy, as more of those dollars are retained within the state.

As we analyze each of the mechanisms through which the University's presence makes the state economy bigger, we are careful to account for the resources devoted to the University's support that originate from within the state of Montana.



Introduction

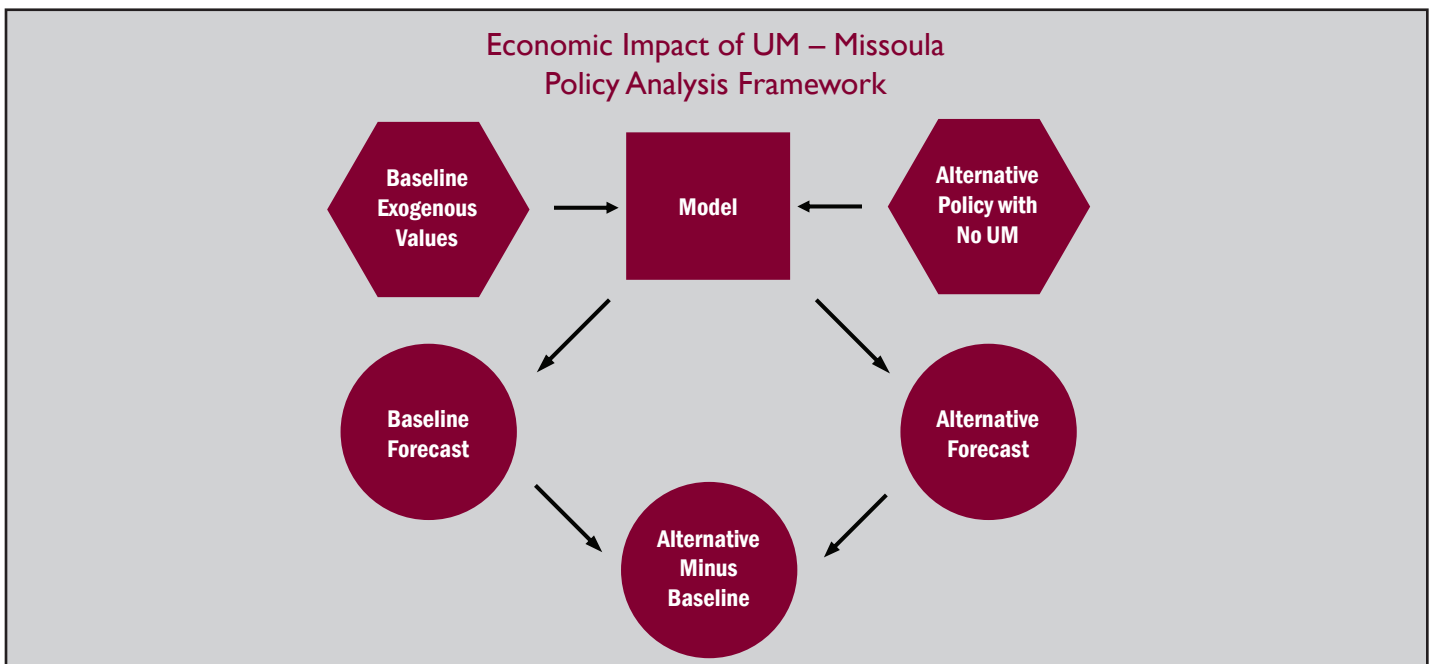
THE REMI MODEL

A critical link in this analysis involves translating the University's direct and indirect impacts into overall state economic activity. This is accomplished by means of an economic model.

The analysis is depicted graphically below. The model is used to make two kinds of economic projections. The first is the baseline, or status quo, a projection of the Montana economy as it stands today. The second projection removes the direct and indirect contributions of UM. These changes bring about further economic impacts – the induced impacts described in the introduction. The model is a critical tool in understanding how those first-round impacts alter investments and decisions that ultimately determine the

size of the resulting economy. The difference between these economic projections is the total impact of the University.

We use a top-tier economic impact model, provided by REMI, Inc. of Amherst, Massachusetts, for this purpose. The REMI model has been in existence since the early 1980s and has been used to evaluate the economic contributions of the University of Michigan, the University of Connecticut, and other higher education institutions. It has been evaluated or used in more than 700 studies and appears in more than a dozen peer-reviewed academic journal articles. The model is capable of examining impacts in fine detail, and has a peerless reputation.





Introduction

ORGANIZATION OF THIS REPORT

There are several distinct mechanisms through which the continued presence of The University of Montana interacts with and enlarges the state economy. Each of these are examined and analyzed as part of this report. They include:

- **University Operations.** The payroll and purchases of the University for academic year 2008-09 were tabulated and categorized. This analysis included a thorough accounting of tax and tuition payments in support of that spending originating from the state of Montana.
- **University Research.** The University's spending and payroll for research activities, net of within state support, were assembled and summarized.
- **Graduate Earnings.** Census data are used to estimate the additional earnings of those with bachelor and graduate-level college degrees in Montana. Applying these estimates to the almost 35,000 UM graduates residing in the state of Montana produces an estimate of the aggregate earnings impact of UM.
- **Visitors.** An estimate of out-of-state visitor spending attributable to UM is constructed by

using student survey responses on visitation frequency for nonresident students, combined with spending profiles from UM's Institute for Tourism and Recreation Research.

- **Student Off-Campus Spending.** The spending profile of nonresident students is estimated and presented using survey responses of UM students.

These are direct impacts of the University. To these should be added the indirect impacts – the presence of businesses, workers, and investments and spending in Montana that are unconnected to the University, yet take place here because of the University. These include startup businesses, businesses that co-locate with the University for a variety of reasons (e.g., labor market recruitment), and the labor supply of educated spouses of University employees.

None of these indirect impacts are included in this report. Although they could be substantial, the rigorous estimation of these was beyond the scope of this project.

The total impact of the University involves tracing and tabulating the induced impacts caused by the direct impacts of UM using an economic model. These findings are presented in the last section of this report.



University Operations

UNIVERSITY OPERATIONS

The University of Montana – Missoula is the largest single employer in western Montana, with 2,823 full-time equivalent employees, \$182 million in payroll and benefits, and purchases of more than \$91 million worth of non-capital goods and services. Sources of funds for that spending include tuition and fees, state appropriations, private and public research support funds, and payments from individuals.

The University also encompasses a wide variety of activities that complement and support its educational and research missions. These include the student health center, bookstore, parking services, athletics, food services, and cultural activities.

University faculty and staff and other expenditures related to instruction, organized research, academic support, student services, institutional support, public service and outreach, and operation and maintenance of facilities are accounted for in what are referred to as unrestricted funds. As shown in the accompanying table, approximately \$4 out every \$5 spent from unrestricted funds go to salaries and benefits of University employees.

The sources of those funds are almost entirely tuition and fees levied on students and appropriations received from the Montana Legislature.

University Operations Financed by Unrestricted Funds

| Category | Expenditures |
|-----------------------------------|--------------|
| Salaries and Wages | \$79,178,318 |
| Hourly Wages | \$1,809,918 |
| Employee Benefits | \$28,114,679 |
| Other Compensation | \$1,026,902 |
| Other Services | \$2,974,935 |
| Supplies | \$5,576,415 |
| Communication | \$2,007,869 |
| Travel | \$1,149,875 |
| Rent | \$1,404,467 |
| Utilities | \$4,739,016 |
| Repair & Maintenance | \$974,418 |
| Other Expenses | -\$2,582,885 |
| Goods Purchased for Resale | \$208 |
| Capital Equipment | \$1,476,493 |
| Debt Service | \$65,962 |
| Waivers & Scholarships | \$7,890,478 |
| Mandatory Transfers | \$114,795 |
| Non-mandatory Transfers | \$2,806,345 |



University Operations

If the University did not exist, this spending would not take place, and the jobs and income supported by that spending would not exist. On the other side of the equation, the tax support and tuition paid by Montanans would be returned to them, to be potentially spent on other goods and services.

The stimulus to the state economy from operations funded by unrestricted funds comes from two primary sources.

The first is the fact that the University attracts students and funding from sources outside the state of Montana. These include both tuition and fees paid by nonresident students, as well as tuition support in the form of scholarships and grants that come from federal or other non-Montana sources. The University also attracts significant private sector support from both inside and outside Montana. Thus the operations of the University bring new money into the state.

The second stimulus comes from the service-oriented nature of the University itself. UM – Missoula has a very high proportion of its output that is locally produced. Directing in-state spending to the University, instead of to most other goods, will provide more stimulus to the state economy even if the dollar amounts are the same. For example, another item a Montanan might spend money on, say, a new car, has a much lower fraction of its value that can be said to come from Montana.



University Research

UNIVERSITY RESEARCH PROGRAMS

University research activities are a vital catalyst for growth in the state economy. Not only do professional research projects attract significant funding from outside of the state, but they also attract top talent – including both researchers and graduate students – to the state from around the world. The \$67 million in annual spending and the 686 high-paying jobs in UM research would be lost to the state if the University did not exist, and so would the fruits of those research efforts – the patents and inventions, the spin off of business into the state economy, and the new methods and materials used in the state’s forests, highways, and hospitals.

University Research Activities

| | |
|--------------------------------------------|---------------------|
| Total Expenditures | \$67,116,317 |
| Research Salaries | \$37,596,553 |
| Number of jobs (annual salaries) | |
| Researchers (\$65,497) | 138 |
| Contract Professionals (\$64,516) | 120 |
| Classified (\$35,602) | 94 |
| Contract Administrators (\$109,209) | 7 |
| Graduate Assistants (\$19,000) | 105 |
| Undergraduate Students (\$11,000) | 113 |
| Temporary Staff (\$21,844) | 109 |
| Total jobs | 686 |
| Intellectual Property | |
| U.S. Patents issues (active) | 28 |
| Active licenses (total) | 23 |
| Active licenses (MT companies) | 14 |



University Research

Products Based on UM Licenses

Products Currently Produced and Sold

- PSI currently manufactures and sells high-affinity/capacity resins for the selective capture of heavy metals from water. Four to five products are currently being sold.
- Sunburst Sensors manufactures and sells autonomous sensors used to measure CO₂ and pH in oceans and other natural waters. Alternative sensor configurations are now available for ship-based measurements. The sensors are sold worldwide to marine and freshwater researchers.
- Lonza, BV: arabinogalactan (AG) used as a food additive, in drug delivery, and modified as an immunostimulant. Two types of AG are currently on the market.
- Roscoe Steel makes a platform system to assist wildlife movement across (under) highways. One product.

Products Under Development

- Bee Alert Technologies and S&K Electronics are developing systems for conditioning and monitoring bees. These products are operational and set for final trials in January 2010 and June/July 2010.
- Rivertop Renewables is developing processes for the manufacture of low-cost glucaric acid (glucarate salts), with application in corrosion inhibitors, concrete admixtures, detergents, gels, and adhesives.

Products in Research Mode

- Sinapis Pharma: a neuroprotective agent with the potential to expand the window for stroke treatment from four to 12 hours. One product.
- Transynaptic Technologies: small molecules to enhance nerve transmission. Three to four products.
- GT Neuropharma: small molecules to image or to inhibit neurotransmitters. Three products.

Examples of UM Intellectual Property-Dependent Spin-Off Companies

- Bee Alert Technologies sells products to condition and monitor bees, is located in Missoula, MT, has three to four employees, and approximately \$400K in R&D expenditures per year.
- PSI produces products for the selective removal of heavy metals from water, has three to four employees in Missoula, and conducts approximately \$600K in R&D annually (in Missoula) including research at UM in the lab of Professor Ed Rosenberg of the Department of Chemistry.
- Sunburst Sensors manufactures and sells autonomous chemical sensors, has five employees (two MS Engineers, one PhD scientist, and two BS lab technicians), and approximately \$250K in annual R&D expenditures and \$250K in sales and service as of December 2009.
- Rivertop Renewables is developing processes for the manufacture of renewable chemicals, has six to 10 employees, and approximately \$200K in annual R&D expenditures.

Other Companies Influenced or Enhanced by UM

- Visual Learning Systems: digital image recognition software; started in UM Department of Computer Science; in Missoula, MT; about 20 employees.
- Endobiologics: vaccines and vaccine delivery; from the Division of Biological Sciences; in Missoula, MT; seven employees.
- Aquila Vision: remote sensing and satellite tracking methodology; from the School of Forestry and Research Administration; in Missoula, MT; six employees.
- GCS Research/Terra Echos: software for geospatial analyses and perimeter/boarder security technology; in Missoula, MT; 20 employees (12 in MT).



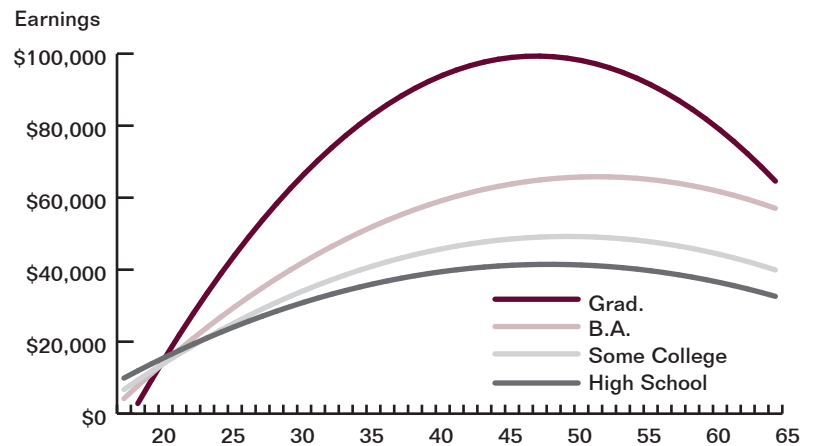
Graduate Earnings

GRADUATE EARNINGS

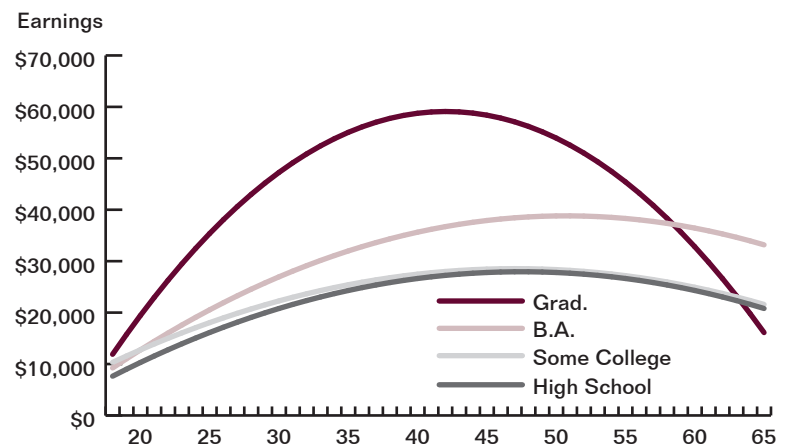
Attending college and receiving a university degree is a pivotal step in many people's lives. The evidence demonstrates that it is an enormously important event for their future economic status as well. Using Montana data from the most recent American Community Survey conducted by the U.S. Bureau of the Census, we are able to estimate age-income profiles for Montana men and women for four basic educational attainment categories: high school education, those with some college, those with a four-year college degree, and those with a graduate degree.

In all instances, earnings of workers rise rapidly early in their working years, peaking in middle age and declining as individuals cut back on hours or retire from the labor force, as shown in the figures. Yet the height of these earnings profiles clearly shows the impact of education on earnings through all stages of working lives.

Age / Earning Profiles by Educational Attainment, Men



Age / Earning Profiles by Educational Attainment, Women



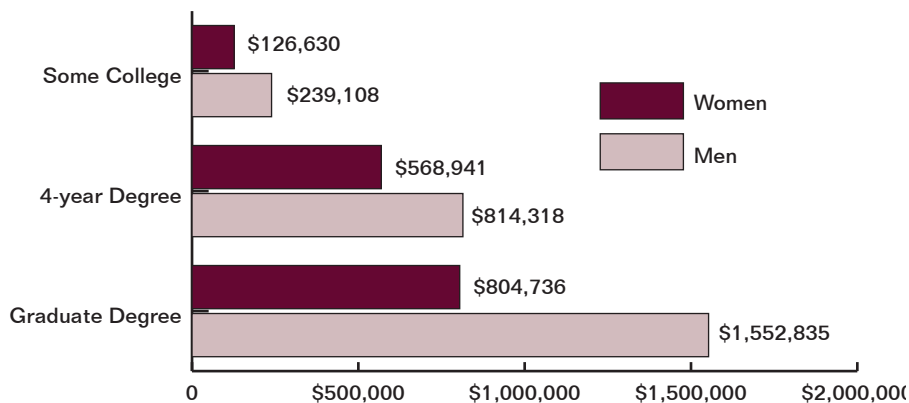


Graduate Earnings

Since 1975, the average growth in inflation-adjusted wages for high school-educated Montana workers has been 0.6 percent per year. Over this same period, average wage growth for college-educated workers was 1.1 percent per year. Taking these differing growth rates into account and recognizing that higher earnings that occur in the future must be discounted to be comparable to dollars earned today, we have computed the lifetime earnings premium that a 25-year-old man or woman can expect to enjoy as a result of educational achievements beyond a high school degree.

As shown in the figure, the payback to individuals for investments in educational achievement is substantial. A 25-year-old Montana man with a four-year college degree will enjoy, on average, earnings over his working life that are worth \$814,318 more in present dollars than

Lifetime Earnings Differential by Educational Status, Earnings Relative to High School-Educated Workers





Graduate Earnings

those he would realize with only a high school degree. The comparable figure for a 25-year-old woman with a four-year degree is \$568,941.

But these additional earnings are not only a reward for the student – they are a gain for the state economy as well. An educated worker is a more productive worker, and increased productivity raises the output and the competitiveness of the entire state economy. Higher output levels and higher compensation reverberates throughout the economy with increased spending, demand, and state tax revenues.

Thus the main product of UM – Missoula – our graduates and educated young people – represents a significant, sustained, positive direct impact to the Montana economy. The roughly 35,000 Montana residents who are graduates of the University represent increased compensation levels of \$441 million each year. The additional spending power of that additional income is an important element of the overall impact of the University on the state economy.



Visitors

VISITORS

Spending by nonresidents visiting or passing through Montana constitutes an important component of the state economy. The University of Montana – Missoula generates significant visitor traffic, including visits by friends and families of its students and faculty and by those attending academic, cultural, and athletic events hosted at or because of the University.

From the statewide perspective, it is only the spending by out-of-state visitors that can be said to add to the Montana economy. A conservative estimate of this spending can be constructed by considering only one type of visitor – friends and families of out-of-state students. Based on the Bureau of Business and Economic Research student expenditure survey, the 3,496 nonresident students at UM generated about 9,600 visits by friends and relatives from out of state, with visitors staying in Montana an average of about 3.5 days.

Based on daily expenditure estimates of nonresident visitors seeing family and friends, we estimate that these trips generate spending of about \$5.2 million within the state of Montana. As shown in the table, travel, accommodations, and food services account for the majority of expenditures.

Were it not for the presence of the University, these visits – as well as the spending and the jobs that spending supports – would not exist.

Visitor Spending by Major Category, FY 2009

| Category | Expenditures (Dollars) |
|--------------------------------------|------------------------|
| Retail trade | \$393,000 |
| Transportation | \$1,505,000 |
| Rental and leasing | \$61,000 |
| Admin. and support services | \$101,000 |
| Performing arts and spectator sports | \$10,000 |
| Amusement, gambling and recreation | \$503,000 |
| Accommodation | \$1,419,000 |
| Food services and drinking places | \$1,139,000 |
| Repair and maintenance | \$77,000 |
| Total | \$5,208,000 |



Student Off-Campus Spending

NONRESIDENT STUDENT EXPENDITURES

Student spending plays a significant role in The University of Montana's impact on the economy. UM draws in nonresident students to the state that, in the absence of the University, would locate and spend their money elsewhere. Enrollment in the fall of 2008 included 3,496 students paying nonresident tuition.

To generate a profile of nonresident student expenditures, the results of a student expenditure survey conducted by the Bureau of Business and Economic Research were updated to 2008 using price information from the Bureau of Labor Statistic's Consumer Price Index. The results indicate that average non-housing expenditures are \$892 per month. Our finding is that the direct impact of nonresident student spending on Montana's economy in 2008 was \$28.0 million.

Highlights:

- In 2008, nonresident students accounted for approximately 25 percent of total headcount enrollment.
- Retail sales account for the largest portion of student spending, aside from housing, weighing in at \$20.8 million annually.
- Aside from tuition, nonresident students' expenditures are \$49 million each academic year that they live in Montana.

Expenditures by Nonresident Students 2008-09 Academic Year

| Expenditure Category | Dollars |
|--------------------------------------------------------------------|--------------|
| Retail trade establishments | \$20,834,672 |
| Apparel and department stores | \$3,769,947 |
| Bookstores, including the UM bookstore | \$2,569,023 |
| Vehicle purchases (car, truck, recreational, or motorcycle) | \$111,611 |
| Gasoline and vehicle service | \$6,585,493 |
| Eating and drinking establishments (other than dining services) | \$1,986,788 |
| Food and liquor stores | \$3,926,948 |
| Furniture and appliance stores | \$186,336 |
| Other retail stores | \$1,698,525 |
| Services | \$2,045,671 |
| Medical, dental, and vision | \$241,558 |
| Auto, home, renter's health, or other insurance | \$180,865 |
| Beauty shops, barbers, laundries, etc. | \$355,000 |
| Theatres, golf courses, and other recreation services | \$1,016,945 |
| Hotels and lodging places in Missoula County | \$243,985 |
| Educational services, except UM or COT | \$7,318 |
| Utilities | \$1,209,206 |
| Water, gas, and electric | \$221,135 |
| Telephone | \$559,115 |
| Garbage collection | \$39,608 |
| Cable television | \$389,349 |
| Housing | \$20,935,421 |
| Apartment or house rent | \$1,614,618 |
| UM room and board | \$19,320,803 |
| Charitable Donations | \$92,958 |
| Transportation (bus, taxi, airline) | \$3,185,644 |
| Other Missoula County expenditures | \$693,900 |
| TOTAL | \$48,997,472 |
| Total spending, less UM room and board | \$28,062,051 |



Economic Impact

STATEWIDE ECONOMIC IMPACT

The operations of the University of Montana – Missoula combine to produce a significant economic footprint within the state of Montana. It is important to note that the production of knowledge, the earnings and productivity of its graduates, and the tax revenues returned to the state treasury produce benefits attributable to the University in every corner of the state. The results reported here represent the net benefits of UM to the state as a whole – recognizing that the tax support and the tuition and other spending from residents received by the University reduces the ability of state residents to spend on other goods and services.

The impacts reported here represent the total contribution of the University to the state economy. The tables reported here detail the differences between an economy with, and an economy without, The University of Montana. The analysis uses the spending and enrollment levels as of fiscal year 2009 (July 2008-June 2009) as a baseline.

Even if the University were to remain at its current size, its economic impacts grow over time, due to the fact that the earnings premium of college graduates has been increasing over time in Montana. Thus we report the impacts of the University for year 2009, as well as those that will occur in year 2029. The latter more fully capture the cumulated additional earning power of UM graduates.

Impact Summary

| Impact | 2009 Impacts | 2029 Impacts |
|-----------------------------------------|--------------|--------------|
| Total Employment (jobs) | 9,699 | 13,521 |
| Private Sector | 6,700 | 10,267 |
| Personal Income (\$ millions) | \$1,249 | \$2,697 |
| Disposable Personal Income | \$1,051 | \$2,342 |
| Population | 10,873 | 15,496 |
| State tax revenues (\$ millions) | \$199 | \$411 |

Private Sector Employment Impacts

| Industry | (Number of jobs) | |
|---------------------------------------------------------|------------------|--------------|
| | 2009 Impacts | 2029 Impacts |
| Forestry, Fishing, Related Activities, and Other | -3 | 2 |
| Mining | -2 | -2 |
| Utilities | 21 | 24 |
| Construction | 687 | 897 |
| Manufacturing | 20 | 55 |
| Wholesale Trade | 117 | 121 |
| Retail Trade | 1,330 | 1,869 |
| Transportation and Warehousing | 34 | 66 |
| Information | 70 | 95 |
| Finance and Insurance | 169 | 199 |
| Real Estate and Rental and Leasing | 272 | 462 |
| Professional and Technical Services | 429 | 650 |
| Management of Companies and Enterprises | 7 | 5 |
| Administrative and Waste Services | 357 | 437 |
| Educational Services | 40 | 85 |
| Health Care and Social Assistance | 1,329 | 2,567 |
| Arts, Entertainment, and Recreation | 278 | 450 |
| Accommodation and Food Services | 596 | 674 |
| Other Services, except Public Administration | 951 | 1,611 |



Economic Impact

The immediate impact of UM – Missoula is a state economy that is larger by about 9,700 jobs, including 6,700 additional jobs in the private sector. Those jobs contribute more than \$1 billion in after-tax income to Montana households and result in nearly 11,000 more people living in the state.

The accompanying tables detail a Montana economy that is larger, richer, and more productive due to the operations of UM – Missoula. Among the highlights of the immediate impacts are:

- Employment gains in nearly every major industry, with significant job increases in construction, retail trade, and health care;
- More than \$1 billion of additional wages and salaries paid to Montana workers, with more than \$1.3 billion in total compensation;
- An increase of \$1,346 in the average annual compensation of all Montana workers;
- More than \$1.3 billion of additional consumer spending in Montana (including spending by nonresidents);
- Almost \$200 million of additional state tax collections.

Personal Income Impacts

| Income Impact (\$millions) | 2009 Impacts | 2029 Impacts |
|------------------------------------------------------------------------------------------|--------------|--------------|
| Total Earnings | \$1,328 | \$2,718 |
| Total Wage and Salary Disbursements | \$1,024 | \$2,071 |
| Supplements to Wages and Salaries | \$212 | \$426 |
| Employer contributions for employee pension and insurance funds | \$142 | \$287 |
| Employer contributions for government social insurance | \$70 | \$139 |
| Proprietors' income, with inventory valuation and capital consumption adjustments | \$93 | \$221 |
| Less: Contributions for government social insurance | \$165 | \$330 |
| Employee and self-employed contributions for government social insurance | \$95 | \$191 |
| Employer contributions for government social insurance | \$70 | \$139 |
| Plus: Adjustment for residence* | -\$14 | -\$29 |
| Equals: Net earnings | \$1,149 | \$2,359 |
| Plus: Rental, Personal interest, and Personal dividend income | \$65 | \$180 |
| Plus: Personal current transfer receipts | \$35 | \$158 |
| Equals: Personal Income | \$1,249 | \$2,697 |
| Less: Personal current taxes | \$199 | \$354 |
| Equals: Disposable personal income | \$1,051 | \$2,342 |

* Total earnings data are derived from records of employers who are located in Montana. Since some Montana workers are employed by out-of-state firms, and some Montana firms employ workers from other states, the adjustment for residence nets out these two impacts to produce an estimate of Montana residents' income.



Economic Impact

Over a longer period of time, the faster growth in UM graduate salaries magnifies these results significantly. In the year 2029, total job gains due to the University grow to more than 13,500, representing more than \$2.3 billion in after-tax income and more than \$400 million in additional state taxes.

Compensation Impacts

| Impact | 2009 Impacts | 2029 Impacts |
|----------------------------------|--------------|--------------|
| Millions of \$: | | |
| Wage and Salary Disbursements | \$975 | \$1,972 |
| Compensation | \$1,167 | \$2,359 |
| Earnings | \$1,260 | \$2,580 |
| Dollars | | |
| Average Annual Compensation Rate | \$1,346 | \$2,101 |

Gross Domestic Product Impacts

| GDP impacts (\$ millions) | 2009 Impacts | 2029 Impacts |
|------------------------------------------|--------------|--------------|
| Personal Consumption Expenditures | \$1,303 | \$3,096 |
| Gross Private Domestic Fixed Investments | \$352 | \$698 |
| Change in Private Inventories | 0 | 0 |
| Total Exports | \$66 | \$47 |
| Total Imports | \$1,184 | \$2,627 |
| Government Consumption Expenditures | 40 | 63 |



Conclusion

CONCLUSION

Measuring the contribution that a diverse and vibrant institution like The University of Montana makes to the economy of the state is a daunting task. There are so many different connections between the University's activities, students, faculty and staff, and the economy they operate within that it is nearly impossible to measure and analyze them all.

Yet there are some very important connections between the University and the economy that can be formally analyzed – and that analysis conclusively demonstrates that the Montana economy is made larger, more prosperous, and more productive due to the presence of the University. The 9,700 additional jobs, the \$1.0 billion in additional after-tax income, and the more than \$200 million in additional state tax revenue that can be attributed to the presence of The University of Montana – Missoula are over and above the important, generous contributions that Montanan's make in support of the University.

As Montana faces the challenges of finding ways to grow income, job opportunities, and prosperity in the years ahead, it is well served by a University that plays a key role in helping to achieve those same goals.



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