

# The Economic Impact of the University of Delaware

Contributions to Greater Newark, New Castle  
County, the State of Delaware, the 4-State Region\*  
and the United States

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\* The 4-State Region is comprised of Delaware, Maryland, Pennsylvania and New Jersey

**The Economic Impact of the University of Delaware<sup>†</sup>**  
**Executive Summary**

Economic impact analysis is conceptually straightforward: (1) Some aspect of an economy changes; we call the initial change “the primary stimulus.” (2) It is the primary stimulus for consequential changes called “multiplier effects.” (3) When all the multiplier effects have been accounted for, they can be added to the primary stimulus to produce the total economic impact of the original stimulus. From a variety of sources we obtained measures of the activities of the University Community (comprised of the University itself, its employees, students, individual alumni and firm alumni). These activities constitute our primary stimulus. We then calculate the multiplier effects and total impacts of the activities on output, jobs, incomes and taxes in several economic regions. We use well-known and often used models from the Minnesota IMPLAN Group to calculate the multiplier effects. Our study is unique in its focus on a University community that includes not only the University, its students, visitors and individual alumni, but also its firm alumni.

The table below summarizes the impacts of the University Community on greater Newark and the State of Delaware. The addition to output in Delaware stimulated by the University of Delaware community is \$2.904 billion, an amount equal to roughly 6.5% of Delaware’s total output, or 26,448 jobs, about 5% of total employment in the State. The comparable results for greater Newark show that, for both output and jobs, the University community’s activities stimulate total impacts that are 16% of the total amounts for greater Newark.

	<b>Greater Newark</b>	<b>Delaware</b>
<b>Reference Values for Each Area</b>		
<b>Total Employment</b>	<b>77,816</b>	<b>537,631</b>
<b>Total Population</b>	<b>140,866</b>	<b>873,092</b>
<b>Total Output Produced</b>	<b>\$ 7 billion</b>	<b>\$ 45 billion</b>
<b>Impact Measures</b>		
	<b>Output Impacts</b>	
<b>Total Additional Output Produced by All Spending by the UD Community Including Its Alumni</b>	<b>\$ 1.066 billion</b>	<b>\$ 2.904 billion</b>
<b>% of Total Output</b>	<b>15.9%</b>	<b>6.5%</b>
	<b>Employment Impacts</b>	
<b>Total Jobs Created by All Spending by the UD Community Including Its Alumni</b>	<b>12,686</b>	<b>26,448</b>
<b>% of Total Jobs</b>	<b>16.30%</b>	<b>4.92%</b>
	<b>Income Impacts</b>	
<b>Total Added Income Earned Each Year Due to Spending by University Community Including Its Alumni</b>	<b>\$ .512 billion</b>	<b>\$1.222 billion</b>

The full report also shows results for New Castle County, the 4-state region comprised of Delaware, New Jersey, Maryland and Pennsylvania, plus the whole U.S. It also reports impacts on Federal as well as State & Local Government tax revenues. The report shows that every dollar invested in the University by the State (in 2009 the operating appropriation from the state was \$126.7 million) returns at least \$8.71 to Delawareans in the form of salaries and wages, making the University a superb investment for the State. By educating students, the University also adds to their human capital which gives them the ability to earn higher incomes. The University’s 3,569 bachelor’s degree graduates in 2009 would be expected earn an average of \$20,748 a year more than a high school graduate.

<sup>†</sup>The report was prepared by William Latham and Kenneth Lewis, Directors, Center for Applied Business and Economic Research, Alfred Lerner College of Business and Economics, University of Delaware.

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## I. Acknowledgments

A study such as this one depends critically on information not available from published sources. We are grateful to the many individuals who ably and willingly assisted us, not only in gathering data on University activities, but also in interpreting those data. Listed below are many of the individuals who provided such assistance to us either directly or by pointing us to the sources that we ultimately used. Inevitably some individuals names will have been inadvertently omitted and we apologize in advance for having done so.

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## II. Introduction

The purpose of this study is to measure the economic impacts of the University of Delaware (hereafter, “the University”) on the economies of a series of larger and larger regions beginning with Greater Newark<sup>3</sup>, and then progressing to New Castle County, to the State of Delaware, to a 4-State Region comprised of Delaware, Maryland, Pennsylvania and New Jersey and finally to the whole United States. The study was commissioned by the Office of the Executive Vice-President of the University. The study is not intended to be an audit or evaluation of the University's operations or its management.

The economic impact of an enterprise, such as the University, is defined as the sum of all the changes to an economy that results from the operations of the enterprise. The purpose of an economic impact analysis is to measure the economic benefits to some specific regions, such as the ones identified in the preceding paragraph, which result from the enterprise's operations. Benefits may be measured in terms of increases in (1) the production of output as measured by total purchases (the equivalent of GDP for the various regions), (2) employment or jobs, (3) wages and salaries or labor incomes (personal income is mostly wages and salaries), and (4) tax revenues. In this study, these four measures are used to capture the economic impacts of the University's operations. No attempt is made to balance these benefits against any costs that might result from the University's operations.

As explained in greater detail below an economic impact analysis is conceptually quite simple:

- (1) a change to some aspect of an economy is measured,
- (2) this initial primary stimulus produces consequential changes (multiplier effects) which are also measured,
- (3) when all changes have been accounted for, they can be added up to produce the total economic impact of the original stimulus.

In our case, the University's activities provide the *initial* stimulus values, which we can measure. However, some of the measures are not stated in units of measurement that are compatible with

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<sup>3</sup> For our study we define Greater Newark on the basis of the postal zip codes that encompass all of Newark and the immediately surrounding area: zip codes 19702, 19711-18, and 19725-26.

our impact model. For example, the organizer of a University conference measures the number of attendees and the number of days attended. Such University activity measures, attendees and days, must be translated into expenditures in the industry sectors used in our impact analysis model. We translate the number of attendees and the number of days at a conference, for example, into the number of dollars they spend in local restaurants or for other local purchases from specific industry sectors. Once we have translated University activity measures into the industry sectors of our impact analysis model, this sophisticated model is used to calculate all the consequential changes and the induced further consequential changes to the series of economies ranging from Greater Newark to the whole United States. We then aggregate all the components to produce the total economic impacts of the University.

The report is organized as follows: In Section 3 the University's activities which may contribute to economic impacts are reviewed along with the procedures used in this study to measure them and translate them into the units that are compatible with our impact model. In Section 4 the impact modeling methodology, including an overview of multiplier analysis, is discussed. The main results of the study are shown in Section 5. Section 5 also discusses some additional impacts that are not quantitatively estimated in the foregoing sections. Section 6 is an appendix which contains detailed analysis tables not included in the main body of the report.

### **III. Accounting for University and University Community Activities: Data and Procedures**

The University's economic activities, in the narrowest sense, consist only of its direct purchases of goods and services and its wage and salary payments to its employees. The total amounts of these expenditures can be found in the University's financial statements. This narrow view of the University captures all of the spending done from tuition and from room and board payments of students and also from research grants, endowment funds and funds received from the State of Delaware. However, such a narrow view of University activities is obviously flawed because it ignores student activities that do not flow through the University's accounts, including all of the spending by students off-campus (for housing, clothing restaurants, entertainment, etc.). In addition it ignores all of the off-campus expenditures by the more than 700,000 visitors drawn to the University each year.

Our study is differentiated from prior studies by our view of the University as a *community* that goes beyond the particular collection of students, faculty and staff present on the campuses and making purchases in any given year. The university is responsible for having equipped its individual alumni with the ability to earn higher incomes and thus to make larger expenditures than they would have been able to do without a university education. We measure the incremental incomes of our individual alumni in the regions where they live (based on zip code information) and calculate the economic impacts of their increased expenditures. Further the University also has "firm alumni:" these are the companies that got their start because of the University (perhaps in the Delaware Technology Park or in the Delaware Biotech Institute). We also measure the contributions and impact of these firm alumni.

#### **A. University direct purchases of goods and services**

Direct purchases of goods and services are recorded in the University's accounts payable system. The University's accounts payable system uses categories that are meaningful to the University's operations but do not correspond to the economic sectors required for use with our impact model. Thus it was necessary to translate the University's accounts payable codes into corresponding

sets of impact model industry sectors. In some cases the correspondences were quite close as, for example, in the case of office supplies which is identical in both the University's accounts payable system and our impact model's industry sectors. In other cases we used our experience to make judgments regarding the likely distribution of expenditures in a University accounts payable category to our impact model's industry sectors. For example the University's travel expenditures were broken down into impact model industry sectors including air travel on U.S. carriers, hotels, travel services, and other expenditures.

Additional details regarding expenditures can be obtained from the records of the University's purchase card transactions (essentially its credit card transactions). These transactions are assigned to merchant category codes (MCCs) by the bank providing the procurement cards. Again, it was necessary to translate the MCCs into impact model industry sectors. The distribution of purchases of all kinds for each of the five regions is shown in Table A1.

## **B. University employees' wages and salaries used to purchase goods and services**

The University pays all of its employees (faculty, staff administrators, graduate student and undergraduate students, both full-time and part-time) wages and salaries.

Payroll=**\$334 million** for **3,900** faculty and staff, full-time and part-time.

Payroll=**\$43 million** for **6,000** employed students, full-time and part-time.

Payroll=**\$377 million** for **10,000** faculty, staff and students, full-time and part-time.

The full-time equivalent number of employees is approximately 4,658.

All of these individuals, in turn, use their University-derived incomes to make purchases of all kinds of goods and services. We use national data regarding expenditure patterns out of income to estimate the amounts of employee expenditures by industry sector for use in our model. The distribution of purchases of all kinds for each of the five regions is shown in Table A2.

### C. University students' off-campus purchases of goods and services

Many student expenditures are accounted for as part of the University's own spending. For example, on-campus resident students pay the University for their Room & Board which is accounted for in the University accounts as an explicit expenditure in both its financials and in its accounts payable data accounts. Therefore it would be inappropriate to add this on-campus expenditure by the students for their support to the University's spending; it would be double counting. However, all student expenditures off-campus, including expenditures for restaurants, retail goods, and entertainment, and expenditures for housing by those who do not live on campus, are not accounted for in the University's expenditures and need to be added.

**Number of University Students by On and Off-Campus Residency, 2009**

	<b>Total On and Off-Campus</b>	<b>On Campus</b>	<b>Off Campus</b>
<b>Undergrads</b>	15029	7300	7729
<b>Grads</b>	2671	95	2576
<b>All Students</b>	17700	7395	10305

We used reliable survey data from other institutions to estimate the magnitudes of all these expenditures. Table A3 shows the amounts of these off-campus expenditures by students (in the table they are labeled as "Purchases") in each of the five regions.

### D. University visitors' off-campus purchases of goods and services

Individuals from many parts of the University who are responsible for the activities that bring visitors to the University were asked to provide information regarding the numbers of programs and events, the numbers of non-University staff members (especially for athletics camps and tournaments), numbers of visitors and their characteristics such as how many were from the local area and whether or not they spent nights in local hotels. The numbers of visitors by activity type are listed in the table below. We made estimates of the amounts spent in local hotels, restaurants and other establishments based on these figures and on figures from surveys and studies of other institutions. Table A4 shows the estimated spending by all visitors in each of the five regions.

### Visitors to the University of Delaware in 2009

<b>Admissions (prospective students and accompanying individuals*)</b>	75,571
<b>Alumni events</b>	18,981
<b>Athletics (visiting participants and spectators)</b>	227,745
<b>Bob Carpenter Center events</b>	153,187
<b>Camps and Tournaments</b>	10,200
<b>Conference (attendees only)</b>	50,500
<b>Departmental Visits (Seminars, etc.)</b>	9,200
<b>Student, faculty &amp; staff personal visitors</b>	128,600
<b>Total number visitors**</b>	<b>673,984</b>

\*26,100 prospective students visited the Newark campus in 2009. They were accompanied by an average of approximately 1.9 guests

\*\*Data were not available for Newark Days, events and performances at the Roselle Center for the Arts, events at the Carpenter Sports Building, Coast Day and Ag Day. Thus the total above is likely to understate the actual total significantly.

### E. The University's individual alumni purchases of goods and services

#### **Human Capital: The Expected Increased Earnings of the Class of 2009 Graduates**

By educating students, the University adds to their human capital. The students are thus able to earn more in the job market because they are more valuable and productive. Based on data on median annual earnings for University graduates in 2008 from the US Department of Commerce's Bureau of Economic Analysis, a bachelor's degree earned at a university increases a graduate's salary compared with a high school diploma by an average of about \$20,748 a year (from \$32,552 to \$53,300), while a graduate degree earned at a university increases a graduate's salary compared with a bachelor's degree by an average of about \$15,756 a year (from \$53,300 to \$69,056). If the average individual's work life is about 40 years, the benefits of finishing college over only finishing high school are about \$829.9 thousand each more than they would have made if they did not get a bachelor's degree. Since the UD had 3,569 graduates in 2009, that amounts to the creation of nearly \$3.0 billion of future value. Even if we adjust the total by 40% to allow for the forgone loss of income while attending the University, future periods of unemployment, time out of the labor force for child rearing, and other life events, the value creation is still nearly \$1.8 billion every year. A similar analysis applied to our 978 advanced

degrees for 2009 indicates another \$370 million dollars of value created. So the University is creating \$2.1 billion (\$1.8 billion + \$370 million) of incremental lifetime earnings for members of each graduating class. This analysis assumes that future salary level increases will be offset by the discount rate necessary to express them as 2010 values.

We can view the \$2.1 billion as a return on the \$728.5 million invested through operating revenues of the University in 2009: the return is 2.9 times the investment. The return on the State of Delaware’s investment is even larger, more than 16 times the State’s allocation of \$127 million.

To calculate the economic impacts of the University’s alumni on a continuing basis in each of our impact regions we obtained figures on the zip code distribution of the alumni for who the University has current address information and used this distribution for the whole body of 141,613 living alumni in the United States.

**Distribution of University Alumni**

	<b>Greater Newark</b>	<b>New Castle County</b>	<b>Delaware</b>	<b>4-State Region (DE,MD, NJ, PA)</b>	<b>United States</b>
Number	9,907	32,822	40,941	93,222	141,613
Percentage	7%	23%	29%	66%	100%

We assumed that their average salaries are similar to those of other college graduates in the United States and applied the average incremental values detailed in the preceding paragraph to calculate the added income available for expenditures by alumni in each region. The detailed total amounts for undergraduate and graduate alumni are shown in Appendix Table A5.

## **F. The University's firm alumni purchases of goods and services**

Firms that began in the University's Delaware Technology Park or Delaware Biotechnology Institute are similar to students of the University and just as student graduates become individual alumni of the University, firms that spinout from the Tech Park or DBI are firm alumni of the University. Spinouts between 1998 and 2010 now employ about 485 individuals and Table A6 shows the number of jobs that these spinout alumni provide in each of the five regions.

In addition to these firm alumni that really began at the University, there are also many firms that have partnered with the University or have been otherwise assisted by University personnel in ways that have helped to ensure their survival or their retention in the region. These assists currently provide 5,700 jobs in the five regions. One of these, Astra Zeneca is so large (5000 jobs) that we have treated it separately in our analysis. While we have calculated the effects of Astra Zeneca in the five regions (see Table A8), we have not included Astra-Zeneca's impacts in any of the other tables or in our conclusions regarding the University's overall impacts. The direct jobs provided by the other firms that were assisted are shown in Table A7.

## **IV. Impact Methodology**

The preceding sections describe the sources of the data which describe the University's activities. These data serve as inputs into our models of each of the five region's economies. These models are used to trace the impacts of the University and all of its activities. The Minnesota IMPLAN Group developed the economic models for the analysis in this report. Their IMPLAN software is a popular tool for modeling impacts in regional economies that has been used in many economic impact studies including many studies of the impacts of Universities (see Table A9 for a list of such studies which shows that 37 of the 87 studies listed used IMPLAN). An overview of the model is provided in Figure 1 below. The software has built into it production relations that define which industry sectors each industry purchases its inputs from, and in what proportions.

The difference between the total impact of the University throughout an economy and its initial stimulus activity in terms of its own spending is called a "multiplier effect." Local firms purchase input supplies that they need for their businesses from other local firms. They pay their employees, who then also make local purchases. The initial expenditure has a ripple effect through the economy as successive rounds of spending and re-spending magnify its impact. This is the principle of the multiplier.<sup>4</sup>

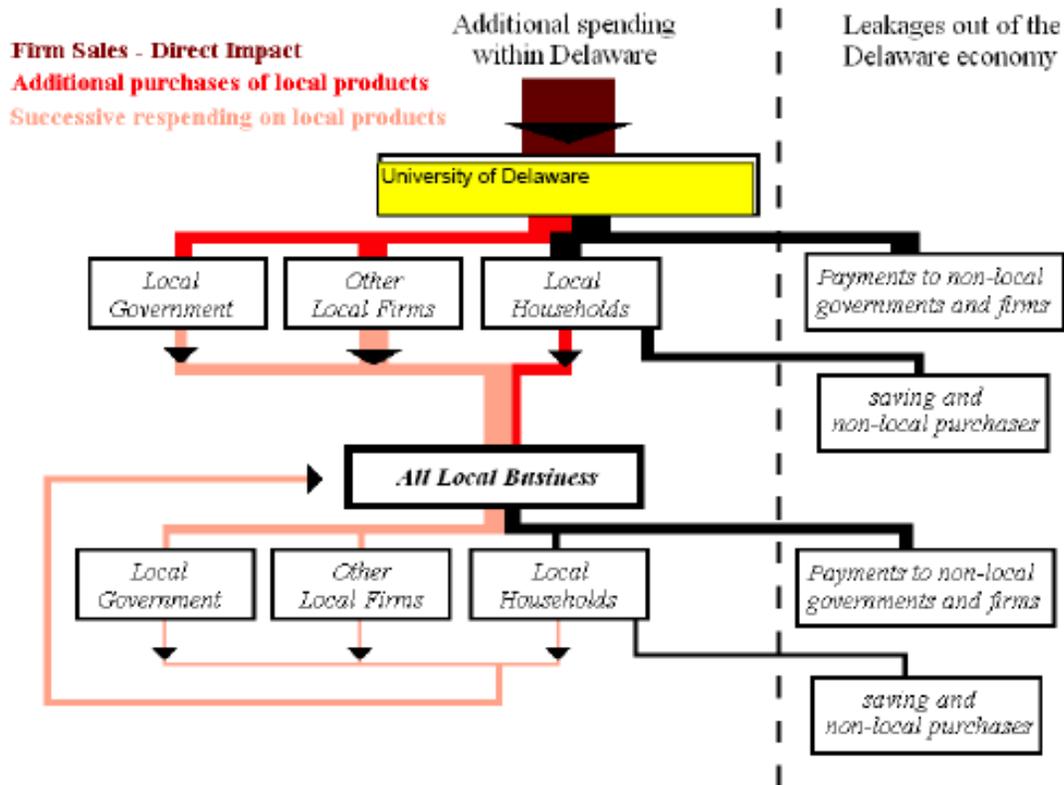
In each round of spending and re-spending, some of the additional spending is lost to further re-spending in the local economy because some money goes into saving or to non-local purchases. This is why multipliers have values that are not huge, especially in small regions such as the state of Delaware where much of the money is spent outside of the impact region.

Figure 1 below illustrates the multiplier process. University expenditures are disbursed in four different ways: (1) to Local Government (which includes state government), (2) to Other Local Firms, (3) to Local Households, and (4) as Payments to non-local governments and firms. The three local recipients of the disbursement will continue to spend this money in the same four ways over successive rounds of spending. Money that flows to non-local agencies (purchases from non-Delaware suppliers, payments to non-Delaware employees, and non-Delaware taxes) leak out of the multiplier process so that eventually the effects of the original expenditure cease to cause additional increases.

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<sup>4</sup> A multiplier is simply the numerical relationship between an original change in economic activity and the ultimate change in activity that results as the money is spent and re-spent through various sectors of the economy. An example of "re-spending" in our analysis is when an employee of one of the University's suppliers spends some of his wages on locally produced goods. The production of the goods the employee purchases, such as groceries or entertainment, is economic activity that can be indirectly attributed to the operations of the University. Thus a one dollar increase in local direct activity at the University results in expansion of total economic activity of *more than* a dollar.

**Figure 1 - The Multiplier Effect**



The multiplier analysis used in this study captures the full effects of the University on the Delaware economy. The components of the total impact consist of the primary stimulus and the multiplier effect.<sup>5</sup>

An economic impact may be measured in a number of ways: employment, income, output (purchases) or tax revenues. This study will report the University's impact in terms of each of these measures. An employment multiplier is the total change in full-time equivalent (F.T.E.) jobs generated in the local economy for each direct change of one F.T.E. position in the

<sup>5</sup> The **Primary Stimulus Effects** consist of the jobs, payroll, and output created directly by the primary producer, which in our case is a part of the University community.

The **Multiplier Effects** consist of the additional jobs, payroll, and output created when the University purchases goods and services from the many diverse businesses that support it. These businesses include equipment suppliers, construction services, transportation services, management services, food services, and many other types of support businesses. The multiplier effects include both the payroll of the support businesses themselves, and the additional activity created when employees of the support businesses spend their wages throughout the local economy, as well as the additional jobs, payroll, and output created throughout the economy when the employees of the University spend their personal incomes on consumer goods, other property, services and taxes.

economy. (Note that one F.T.E. can be a full-time job, or it can be two or three part-time positions with total hours worked equaling one full-time job.) An output multiplier is the total change in sales generated throughout the local economy by a \$1 change in sales of a particular sector. Income multipliers measure the increase in total household income that results from industry growth that corresponds to an additional \$1 of employee compensation within the industry.

Multipliers vary substantially across industries, and an industry may have very different multipliers across regions. The size of multipliers depend on the residency of the workforce, the average wages paid, and the proportion of intermediate purchases that is satisfied locally vs. the share of nonlocal purchases. Because of Delaware’s size, a higher proportion of spending occurs out-of-state for any industry as compared to larger states. Additional business in Delaware results in relatively small multiplier impacts because many inputs are purchased from elsewhere. Thus, total impacts for Delaware industries are usually smaller than for the same industries in larger states.

**Average Multipliers for University of Delaware Community Activities by Area**

	Greater Newark	NCC	Delaware	4-State Region	U.S.
Multipliers	1.72	1.48	1.51	1.72	2.78

The table above shows how average aggregate multipliers for the University of Delaware community are relatively small and generally larger for each larger region. The multipliers for greater Newark are large because they are derived mostly from the household spending of faculty, off-campus students, and alumni which tend to have higher multipliers.

**V. Summary of Results**

Tables 1 – 4 below summarize the results of applying our IMPLAN impact models to the various data sets that we developed to capture as comprehensively as possible the activities of all the parts of the University community. In the following paragraphs we briefly discuss each of the summary tables. Underlying each of these summary tables are many, many additional tables of

impacts showing very detailed industrial sector impacts, the top industries affected, detailed Federal and state tax revenue categories, etc. Interested individuals should contact the authors for further information regarding any of the detailed results not shown in this report.

In Table 1 we summarize the major results of the study in terms of output jobs and incomes in each of the five areas. The table also provides reference figures for each of the areas on total population, total employment and total output produced. These are used to calculate the percentages of each area's totals that can be attributed to the activities of the University community. Clearly, and as expected, the Greater Newark area is affected the most in percentage terms with roughly 16% of both jobs and output being attributable to the University. The percentages for the larger areas decline but they are still significant, especially for New Castle County and Delaware. The actual magnitudes of the impacts are impressive: the University's activities serve to stimulate over \$2.9 billion of output in Delaware and result in Delawareans having over \$1.2 billion of additional income. The impacts in the larger regions are even greater, mostly due to the large numbers of University alumni whose incomes have been permanently increased by their University educations.

In Table 2 we break the output and employment impacts down into several of their components. For example, the increases in output in Delaware shown in Table 1 of \$2.9 billion, are shown in Table 2 to be composed of \$601 million attributable to spending by the University itself plus the off-campus spending of students and visitors. The balance of the \$2.9 billion, \$2.3 billion is shown to be attributable to the spending of the University's individual and firm alumni. Similarly, the total jobs created in Delaware, shown in Table 1 to be 26,448 are shown in Table 2 to be the sum of the 10,529 jobs attributable to spending by the University itself plus the off-campus spending of students and visitors and the 15,919 attributable to the spending of the University's individual and firm alumni. The detailed tables in the appendix provide additional breakdowns of these figures and also show the total tax impacts.

In Table 3 we breakdown the alumni output and employment impacts into their two major components: University individual alumni and University firm alumni as defined in sections above. Here we see that the 41,000 University individual alumni living in Delaware, through their spending made possible by their higher incomes, are responsible for adding \$1.9 billion in output and over 14,000 jobs to the Delaware economy.

In Table 4 we disaggregate the total income impacts shown for each area in Table 1 into the parts attributable to the spending of University itself, its employees, its students, visitors, individual alumni and firm alumni. The table shows that, while the income impacts in Greater Newark are dominated by University employee spending, for all of the larger areas it is the individual alumni whose spending is responsible for the greatest share of the impacts.

The results can be used to make some useful calculations. For example, every dollar invested in the University by the State of Delaware (the FY09 State operating appropriation was \$126.7 million) returns \$8.71 to Delawareans in the form of salaries and wages (\$9.64 when the tech park alumni except for Astra Zeneca are included). One can also calculate the rate of return on the State of Delaware's operating appropriation of \$126.7 million by comparing it to Delaware's added annual income of \$1.222 billion; the result is a return of 10.4%.

In the present study several categories of expenditures were not included in the analysis. Each of them would serve to increase the magnitude of the University's impacts. These include the subvention which the University pays to the city of Newark and the spending by retirees who reside within any of the five regions, as well as some of the Universities auxiliary enterprises. In addition the University community makes substantial contributions to local charities and provides considerable hours of volunteer work, both of which have economic value and enable the charitable organizations to have expanded economic impacts. Finally, higher education is statistically correlated with improved health. The UD 2009 student population of 21,138 will experience avoided social costs for health care over the balance of their work lives of approximately \$20.6 million per year on average as long as they remain in the workforce.

**Table 1. Summary of Economic Impacts of the University of Delaware**

	<b>Impact Areas</b>				
	<b>Greater Newark</b>	<b>New Castle County</b>	<b>Delaware</b>	<b>4-State Region (DE,MD, NJ, PA)</b>	<b>United States</b>
<b>Reference Totals for Each Area</b>	<b>Reference Values for the Five Areas</b>				
<b>Total Employment</b>	<b>77,816</b>	<b>368,145</b>	<b>537,631</b>	<b>16,023,356</b>	<b>176,316,800</b>
<b>Total Population</b>	<b>140,866</b>	<b>529,641</b>	<b>873,092</b>	<b>27,637,630</b>	<b>304,059,200</b>
<b>Total Output Produced</b>	<b>\$ 7 billion</b>	<b>\$347 billion</b>	<b>\$ 450 billion</b>	<b>\$ 1.4 trillion</b>	<b>\$ 14.4 trillion</b>
<b>Impact Measures</b>	<b>Output Impacts</b>				
<b>Total Additional Output Produced by All Spending by the UD Community Including Its Alumni</b>	<b>\$ 1.066 billion</b>	<b>\$ 2.282 billion</b>	<b>\$ 2.904 billion</b>	<b>\$ 6.221 billion</b>	<b>\$ 11.841 billion</b>
<b>% of Total Output</b>	<b>15.9%</b>	<b>6.7%</b>	<b>6.5%</b>	<b>0.4%</b>	<b>0.1%</b>
	<b>Employment Impacts</b>				
<b>Total Jobs Created by All Spending by the UD Community Including Its Alumni</b>	<b>12,686</b>	<b>21,962</b>	<b>26,448</b>	<b>46,372</b>	<b>78,816</b>
<b>% of Total Jobs</b>	<b>16.30%</b>	<b>5.97%</b>	<b>4.92%</b>	<b>0.29%</b>	<b>0.04%</b>
	<b>Income Impacts</b>				
<b>Total Added Income Earned Each Year Due to Spending by University Community Including Its Alumni</b>	<b>\$ .512 billion</b>	<b>\$ 1.020 billion</b>	<b>\$ 1.222 billion</b>	<b>\$ 2.392 billion</b>	<b>\$ 3.995 billion</b>

**Table 2. Output and Employment Impacts of the University of Delaware**

	Impact Areas				
	Greater Newark	New Castle County	Delaware	4-State Region (DE,MD, NJ, PA)	United States
Direct Spending by the University for Purchases in Each Area Economy	\$31 million	\$89 million	\$95 million	\$152 million	\$242 million
	Output Impacts				
Value of Output Produced from Spending by the University and by Students and Visitors Off-Campus	\$440 million	\$550 million	\$601 million	\$870 million	\$1,669 million
Value of Output Produced from Spending by the University's Individual and Firm Alumni	\$ 626 million	\$ 1,732 million	\$ 2,303 million	\$5,351 million	\$ 10,172 million
Total Value of Output Produced by All Spending by the University Community Including Its Alumni	\$ 1.066 billion	\$ 2.282 billion	\$ 2.904 billion	\$ 6.221 billion	\$ 11.841 billion
	Employment Impacts				
Jobs Created from Spending by the University and by Students and Visitors Off-Campus	8,713	9,997	10,529	11,860	16,703
Jobs Created from Spending by the University's Individual and Firm Alumni	3,973	11,966	15,919	34,512	62,113
Total Jobs Created by All Spending by the University Community Including Its Alumni	12,686	21,962	26,448	46,372	78,816

**Table 3. Individual and Firm Alumni Impacts of the University of Delaware**

	Impact Areas				
	Greater Newark	New Castle County	Delaware	4-State Region (DE,MD, NJ, PA)	United States
<b>Number of Living University Individual Alumni</b>	9,907	32,822	40,941	93,222	141,613
	Output Impacts				
<b>Additional Annual Output Produced from Spending by University Individual Alumni</b>	\$ 432 million	\$ 1,469 million	\$1,897 million	\$ 4,535 million	\$ 8,581 million
<b>Additional Annual Output Produced from Spending by University Firm Alumni</b>	\$ 194 million	\$ 263 million	\$ 406 million	\$ 816 million	\$ 1,591 million
<b>Total Additional Annual Output Produced from Spending by University Individual and Firm Alumni</b>	\$ 626 million	\$ 1,732 million	\$ 2,303 million	\$5,351 million	\$ 10,172 million
	Employment Impacts				
<b>Jobs Created by Spending by University Individual Alumni</b>	3,277	11,025	14,425	31,228	55,060
<b>Jobs Created by Spending by University Firm Alumni</b>	696	941	1,495	3,284	7,053
<b>Total Jobs Created by Spending by the University Individual and Firm Alumni</b>	3,973	11,966	15,919	34,512	62,113

Table 4. Income Impacts of the University of Delaware

	Impact Areas				
	Greater Newark	New Castle County	Delaware	4-State Region (DE,MD, NJ, PA)	United States
<b>Source of Income Impacts</b>	<b>Added Income Earned Each Year</b>				
Spending by the University Itself	\$13 million	\$76 million	\$80 million	\$133 million	\$255 million
Spending by recipients of University Wage and Salary Payments	\$238 million	\$329 million	\$356 million	\$475 million	\$571 million
Spending by University Students Off-campus	\$47 million	\$51 million	\$54 million	\$64 million	\$86 million
Spending by University Visitors Off-campus	\$13 million	\$14 million	\$15 million	\$18 million	\$24 million
Spending by University Individual Alumni	\$142 million	\$473 million	\$598 million	\$1,459 million	\$2,587 million
Spending by University Firm Alumni	\$58 million	\$ 78 million	\$119 million	\$ 243 million	\$471 million
<b>Total Spending by the University Community Including Its Alumni</b>	<b>\$512 million</b>	<b>\$ 1,020 million</b>	<b>\$1,222 million</b>	<b>\$ 2,392 million</b>	<b>\$ 3,995 million</b>

## VI. Appendix: Detailed Tables

**Table A1. Economic Impacts of Purchases by the University Itself in Each of the Five Areas**

Economic Impact Categories					
	Purchases	Jobs	Wages & Salaries	State & Local Taxes	Federal Taxes
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	\$ 31,426,468	176	\$ 9,752,911		
<b>Multiplier Effects</b>	\$ 10,456,023	74	\$ 3,547,404		
<b>Total Impacts</b>	\$ 41,882,492	251	\$ 13,300,315	\$ 1,936,922	\$ 3,030,781
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 89,301,440	1061	\$ 61,142,000		
<b>Multiplier Effects</b>	\$ 47,227,939	335	\$ 14,960,215		
<b>Total Impacts</b>	\$ 136,529,376	1396	\$ 76,102,216	\$ 6,941,789	\$ 15,266,658
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 95,229,760	1156	\$ 63,536,984		
<b>Multiplier Effects</b>	\$ 54,413,111	393	\$ 16,918,735		
<b>Total Impacts</b>	\$ 149,642,864	1549	\$ 80,455,720	\$ 7,656,769	\$ 15,914,349
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 152,427,552	1418	\$ 89,096,376		
<b>Multiplier Effects</b>	\$ 132,706,872	852	\$ 43,507,397		
<b>Total Impacts</b>	\$ 285,134,432	2270	\$ 132,603,776	\$ 15,150,423	\$ 29,923,525
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 241,946,032	2168	\$ 122,428,736		
<b>Multiplier Effects</b>	\$ 434,221,232	2567	\$ 132,395,816		
<b>Total Impacts</b>	\$ 676,167,296	4735	\$ 254,824,544	\$ 34,271,026	\$ 55,633,380

**Table A2. Economic Impacts of Purchases by University Employees in Each of the Five Areas**

	Economic Impact Categories				
	Purchases	Jobs	Wages & Salaries	State & Local Taxes	Federal Taxes
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	*	4658	\$ 165,350,365		
<b>Multiplier Effects</b>	\$ 220,777,792	1675	\$ 72,685,472		
<b>Total Impacts</b>	\$ 220,777,792	6333	\$ 238,035,837	\$ 56,675,308	\$ 58,832,589
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	*	4658	\$ 257,151,205		
<b>Multiplier Effects</b>	\$ 221,552,016	1663	\$ 71,388,392		
<b>Total Impacts</b>	\$ 221,552,016	6321	\$ 328,539,597	\$ 74,600,155	\$ 76,581,162
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	*	4658	\$ 278,753,356		
<b>Multiplier Effects</b>	\$ 244,017,632	1855	\$ 76,908,768		
<b>Total Impacts</b>	\$ 244,017,632	6513	\$ 355,662,124	\$ 81,617,533	\$ 81,395,157
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	*	4658	\$ 365,271,009		
<b>Multiplier Effects</b>	\$ 340,795,360	2347	\$ 109,638,200		
<b>Total Impacts</b>	\$ 340,795,360	7005	\$ 474,909,209	\$ 101,500,580	\$ 117,566,861
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	*	4658	\$ 376,843,010		
<b>Multiplier Effects</b>	\$ 644,687,680	4136	\$ 194,378,912		
<b>Total Impacts</b>	\$ 644,687,680	8794	\$ 571,221,922	\$ 113,597,648	\$ 132,920,380

\* No primary stimulus is recorded to avoid double counting.

**Table A3. Economic Impacts of Off-Campus Purchases by University Students  
in Each of the Five Areas**

<b>Economic Impact Categories</b>					
	<b>Purchases</b>	<b>Jobs</b>	<b>Wages &amp; Salaries</b>	<b>State &amp; Local Taxes</b>	<b>Federal Taxes</b>
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	\$ 104,046,280	1376	\$ 34,188,732		
<b>Multiplier Effects</b>	\$ 40,255,960	293	\$ 13,177,202		
<b>Total Impacts</b>	\$ 144,302,240	1670	\$ 47,365,936	\$ 14,533,721	\$ 12,089,193
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 109,826,624	1453	\$ 36,088,104		
<b>Multiplier Effects</b>	\$ 46,453,036	333	\$ 14,764,678		
<b>Total Impacts</b>	\$ 156,279,664	1785	\$ 50,852,784	\$ 15,439,406	\$ 12,436,230
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 115,606,968	1535	\$ 37,647,908		
<b>Multiplier Effects</b>	\$ 52,587,284	377	\$ 16,303,341		
<b>Total Impacts</b>	\$ 168,194,256	1912	\$ 53,951,248	\$ 16,477,413	\$ 12,951,685
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 115,606,968	1452	\$ 38,024,448		
<b>Multiplier Effects</b>	\$ 80,822,124	514	\$ 26,151,672		
<b>Total Impacts</b>	\$ 196,429,088	1966	\$ 64,176,120	\$ 17,906,994	\$ 16,448,664
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 115,606,968	1456	\$ 37,951,100		
<b>Multiplier Effects</b>	\$ 161,481,144	967	\$ 48,449,546		
<b>Total Impacts</b>	\$ 277,088,128	2424	\$ 86,400,648	\$ 21,880,773	\$ 20,796,363

**Table A4. Economic Impacts of Purchases by Visitors to the University  
in Each of the Five Areas**

<b>Economic Impact Categories</b>					
	<b>Purchases</b>	<b>Jobs</b>	<b>Wages &amp; Salaries</b>	<b>State &amp; Local Taxes</b>	<b>Federal Taxes</b>
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	\$ 22,356,618	386	\$ 9,442,331		
<b>Multiplier Effects</b>	\$ 10,198,926	74	\$ 3,388,784		
<b>Total Impacts</b>	\$ 32,555,544	460	\$ 12,831,114	\$ 3,063,513	\$ 2,985,887
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 23,752,818	410	\$ 10,040,375		
<b>Multiplier Effects</b>	\$ 11,759,873	84	\$ 3,792,226		
<b>Total Impacts</b>	\$ 35,512,692	494	\$ 13,832,601	\$ 3,271,971	\$ 3,070,836
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 25,362,886	456	\$ 10,616,984		
<b>Multiplier Effects</b>	\$ 13,833,312	99	\$ 4,305,200		
<b>Total Impacts</b>	\$ 39,196,200	555	\$ 14,922,184	\$ 3,543,786	\$ 3,247,514
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 25,960,554	481	\$ 10,882,024		
<b>Multiplier Effects</b>	\$ 21,889,679	139	\$ 7,081,975		
<b>Total Impacts</b>	\$ 47,850,232	619	\$ 17,964,000	\$ 4,048,268	\$ 4,286,839
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 26,337,124	482	\$ 10,963,131		
<b>Multiplier Effects</b>	\$ 44,967,036	267	\$ 13,395,822		
<b>Total Impacts</b>	\$ 71,304,160	749	\$ 24,358,952	\$ 5,156,982	\$ 5,532,786

**Table A5. Economic Impacts of Purchases by the University Alumni Living in Each of the Five Areas**

	Economic Impact Categories				
	Purchases	Jobs	Wages & Salaries	State & Local Taxes	Federal Taxes
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	\$ 362,190,515	2747	\$ 119,242,023		
<b>Multiplier Effects</b>	\$ 69,859,303	530	\$ 22,999,400		
<b>Total Impacts</b>	\$ 432,049,818	3277	\$ 142,241,423	\$ 38,696,842	\$ 40,169,791
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 1,235,112,246	9269	\$ 397,977,402		
<b>Multiplier Effects</b>	\$ 233,977,243	1756	\$ 75,392,059		
<b>Total Impacts</b>	\$ 1,469,089,490	11025	\$ 473,369,461	\$ 119,398,318	\$ 122,568,915
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 1,575,659,180	11980	\$ 496,611,747		
<b>Multiplier Effects</b>	\$ 321,571,626	2445	\$ 101,352,024		
<b>Total Impacts</b>	\$ 1,897,230,806	14425	\$ 597,963,771	\$ 152,211,585	\$ 151,796,901
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 3,513,040,753	24190	\$ 1,130,189,967		
<b>Multiplier Effects</b>	\$ 1,022,079,552	7038	\$ 328,816,013		
<b>Total Impacts</b>	\$ 4,535,120,305	31228	\$ 1,459,005,980	\$ 346,594,130	\$ 401,455,523
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 5,661,212,901	36324	\$ 1,706,904,670		
<b>Multiplier Effects</b>	\$ 2,920,101,614	18736	\$ 880,435,901		
<b>Total Impacts</b>	\$ 8,581,314,515	55060	\$ 2,587,340,571	\$ 584,709,374	\$ 684,167,375

**Table A6. Economic Impacts of Delaware Technology Park Firm Alumni  
in Each of the Five Areas**

<b>Economic Impact Categories</b>					
	<b>Purchases</b>	<b>Jobs</b>	<b>Wages &amp; Salaries</b>	<b>State &amp; Local Taxes</b>	<b>Federal Taxes</b>
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	\$ 51,586,760	121	\$ 14,176,993		
<b>Multiplier Effects</b>	\$ 27,873,520	164	\$ 9,454,385		
<b>Total Impacts</b>	\$ 79,460,280	285	\$ 23,631,378	\$ 2,536,548	\$ 4,811,511
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 68,094,528	160	\$ 18,713,632		
<b>Multiplier Effects</b>	\$ 39,487,459	225	\$ 13,015,889		
<b>Total Impacts</b>	\$ 107,581,984	385	\$ 31,729,520	\$ 3,393,944	\$ 6,149,889
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 103,158,184	243	\$ 28,338,482		
<b>Multiplier Effects</b>	\$ 62,918,348	369	\$ 20,278,682		
<b>Total Impacts</b>	\$ 166,076,528	612	\$ 48,617,164	\$ 5,288,977	\$ 9,286,796
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 160,929,328	388	\$ 40,818,892		
<b>Multiplier Effects</b>	\$ 172,945,216	956	\$ 58,630,904		
<b>Total Impacts</b>	\$ 333,874,560	1344	\$ 99,449,792	\$ 12,763,186	\$ 21,935,109
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 208,593,808	485	\$ 56,659,792		
<b>Multiplier Effects</b>	\$ 442,456,688	2402	\$ 136,141,004		
<b>Total Impacts</b>	\$ 651,050,496	2887	\$ 192,800,800	\$ 26,869,923	\$ 41,317,788

**Table A7. Economic Impacts of Other Supported Firms in Each of the Five Areas**

<b>Economic Impact Categories</b>					
	<b>Purchases</b>	<b>Jobs</b>	<b>Wages &amp; Salaries</b>	<b>State &amp; Local Taxes</b>	<b>Federal Taxes</b>
<b>Impacts in Greater Newark</b>					
<b>Primary Stimulus</b>	\$ 74,455,120	175	\$ 20,461,640		
<b>Multiplier Effects</b>	\$ 40,229,822	236	\$ 13,645,503		
<b>Total Impacts</b>	\$ 114,684,944	411	\$ 34,107,144	\$ 3,660,999	\$ 6,944,449
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 98,280,776	231	\$ 27,009,366		
<b>Multiplier Effects</b>	\$ 56,992,204	325	\$ 18,785,823		
<b>Total Impacts</b>	\$ 155,272,976	556	\$ 45,795,188	\$ 4,898,475	\$ 8,876,129
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 148,888,096	350	\$ 40,900,904		
<b>Multiplier Effects</b>	\$ 90,810,000	533	\$ 29,268,209		
<b>Total Impacts</b>	\$ 239,698,096	883	\$ 70,169,112	\$ 7,633,576	\$ 13,403,625
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 232,269,120	560	\$ 58,913,868		
<b>Multiplier Effects</b>	\$ 249,611,632	1380	\$ 84,621,940		
<b>Total Impacts</b>	\$ 481,880,768	1940	\$ 143,535,808	\$ 18,421,094	\$31,658,916
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 301,063,232	700	\$ 81,777,016		
<b>Multiplier Effects</b>	\$ 638,597,152	3466	\$ 196,492,216		
<b>Total Impacts</b>	\$ 939,660,416	4166	\$ 278,269,248	\$ 38,781,340	\$ 59,633,932

**Table A8. Economic Impacts of Astra Zeneca in Each of the Five Areas  
(Not Included in Any Other Tables or Totals)**

<b>Economic Impact Categories</b>					
	<b>Purchases</b>	<b>Jobs</b>	<b>Wages &amp; Salaries</b>	<b>State &amp; Local Taxes</b>	<b>Federal Taxes</b>
<b>Impacts in Greater Newark (Astra Zeneca does not have direct employment in Newark)</b>					
<b>Impacts in New Castle County</b>					
<b>Primary Stimulus</b>	\$ 7,564,116,480	5000	\$ 961,175,936		
<b>Multiplier Effects</b>	\$ 3,851,817,536	16062	\$ 1,125,725,920		
<b>Total Impacts</b>	\$ 11,415,933,952	21062	\$ 2,086,901,888	\$ 305,351,143	\$ 488,886,930
<b>Impacts in Delaware</b>					
<b>Primary Stimulus</b>	\$ 7,564,116,480	5000	\$ 961,175,936		
<b>Multiplier Effects</b>	\$ 4,001,615,744	17393	\$ 1,135,333,728		
<b>Total Impacts</b>	\$ 11,565,731,840	22393	\$ 2,096,509,696	\$ 309,478,244	\$ 485,201,550
<b>Impacts in the States of Delaware, Maryland, New Jersey and Pennsylvania</b>					
<b>Primary Stimulus</b>	\$ 7,883,865,600	5000	\$ 1,059,107,392		
<b>Multiplier Effects</b>	\$ 7,482,459,648	33418	\$ 2,378,573,504		
<b>Total Impacts</b>	\$ 15,366,325,248	38418	\$ 3,437,680,896	\$ 493,983,049	\$ 851,368,780
<b>Impacts in the United States</b>					
<b>Primary Stimulus</b>	\$ 7,155,147,776	5000	\$ 861,480,704		
<b>Multiplier Effects</b>	\$ 11,583,511,552	56432	\$ 3,493,769,600		
<b>Total Impacts</b>	\$ 18,738,659,328	61432	\$ 4,355,250,176	\$ 656,504,370	\$ 1,009,675,350

**Table A9. Other University Impact Studies Consulted**

Code	University Name	Fiscal year	Published	Author(s)	Contact Info	Methodology	Consulting
Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8
1	Arizona State University	2002	2003	Center for Business Research, W. P. Carey School of Business, Arizona State University	Available	Implan	No
2	Athens State University		2007	Bill Wilkes, Athens State University	Available	N/A	No
3	Boston 8 Institutions		2003	Appleseed, Inc.	Available	Implan	Yes, fully
4	Brown University	2000-2005		Office of Public Affairs and University Relations, Brown University	Available	N/A	No
5	California State University System					N/A	
6	Cornell University		2007	Appleseed, Inc.	Available	Implan	Yes, fully
7	Cornell, Ithaca College, and Tompkins Cortland CC		2009	Tompkins County and Higher Education		N/A	No
8	DePauw University		2005	Kevin B. Stokes, EconImpact, Inc.	Available	N/A	Yes, fully
9	Duke University	2006-2007		Office of Public Affairs and Government Relations, Duke University	Available	N/A	No
10	Duke University	2004-2005		Office of Public Affairs and Government Relations, Duke University	Available	N/A	No
11	Florida state universities		2001	Center for Economic Forecasting and Analysis, Florida state universities	Available	Implan	No
12	Georgia Independent Colleges and Universities	2007	2009	Michael D. Curley, Kennesaw State University; Roger C. Tutterow, Mercer University	Available	Implan	Yes, fully
13	Georgia Tech		2006	Huron Consulting Group, Inc.	Available	N/A	Yes, fully
14	Harvard University		2009			N/A	
15	Johns Hopkins University		2003	Bay Area Economics, Inc.	Available	Implan	Yes, fully
16	Michigan public universities		2002	SRI International, Inc.	Available	Implan	Yes, fully
17	Michigan Research Corridor Universities		2009	Anderson Economic Group, LLC	Available	N/A	Yes, fully
18	Michigan Research Corridor Universities		2008	Anderson Economic Group, LLC	Available	N/A	Yes, fully
19	Michigan Research Corridor Universities		2007	Anderson Economic Group, LLC	Available	N/A	Yes, fully
20	Montclair State University	2006	2007	Office of Institutional Research, Montclair State University	Available	N/A	No
21	Northwestern University		2006	Bay Area Economics, Inc.	Available	N/A	Yes, fully
22	Ohio's research universities		2006	Appleseed, Inc.	Available	Implan	Yes, fully
23	Old Dominion University	2006	2007	Bureau of Research, College of Business and Public Administration, Old Dominion University	Available	N/A	No
24	Oregon Health & Science University		2009	Econorthwest, Inc.	Available	Implan	Yes, fully
25	Penn State University	2003	2004	Tripp Umbach & Associates, Inc.	Available	N/A	Yes, fully
26	Princeton University		2008	Appleseed, Inc.	Available	Implan	Yes, fully
27	Princeton University		2007	Office of Public Affairs, Princeton University	Available	N/A	No
28	Rensselaer Polytechnic Institute		2009	Appleseed, Inc.	Available	Implan	Yes, fully
29	Rutgers University		2004	Department of University Relations, Rutgers University	Available	N/A	No
30	San Diego State University			Tyler Sherer, Director of Community Relations, San Diego State University	Available	Implan	No
31	Southern University New Orleans	2008-2009		College of Business & Public Administration economic, Southern University	Available	N/A	No
32	Stanford University	2008	2008	The Pacific Partners Consulting Group, Inc.	Available	Implan	Yes, fully
33	Syracuse University	2006-2007	2008			N/A	
34	Syracuse University	2005-2006	2007			N/A	
35	Syracuse University	2004-2005	2006			N/A	
36	SUNY Buffalo		2002	Office of the Provost, SUNY Buffalo	Available	N/A	No
37	SUNY Farmingdale		2009	Long Island Association, Inc. & Office of Institutional Advancement, Farmingdale State University	Available	N/A	Yes, partially
38	SUNY Stony Brook		2008	Center for Regional Policy Studies, SUNY Stony Brook	Available	Implan	No
39	SUNY Stony Brook		2003	Center for Regional Policy Studies, SUNY Stony Brook	Available	N/A	No
40	Texas A&M Health Science Center	2004-2005		Office of Institutional Research, Texas A&M Health Science Center	Available	N/A	No
41	Texas Tech University		2006	Rawls College of Business, Texas Tech University	Available	Implan	No
42	Tulane University		2004	Oakland Econometrics, Inc.	Available	N/A	Yes, fully
43	University of Alabama	2004-2005	2006	Center for Business and Economic Research, Culverhouse College of Commerce	Available	N/A	No
44	University of Alaska	2007	2008	McDowell Group, Inc.	Available	Implan	Yes, fully

**Table A9. Other University Impact Studies Consulted (cont.)**

45	University of Arizona	2004	2005 Office of Economic and Policy Analysis & Economic and Business Research	Available	Implan	No
46	UC Berkeley		2001 Sedway Group, Inc.	Available	Implan	Yes, fully
47	UC Davis	2001-2002	2004 Sedway Group, Inc.	Available	Implan	Yes, fully
48	UC Irvine		2005		N/A	
49	UCLA	2005-2006	2007 LAEDC Consulting, Inc.	Available	N/A	Yes, fully
50	UC Riverside		2006 Office of Governmental and Community Relations and Technology Collab	Available	N/A	No
51	UC Santa Cruz	2004-2005	2006 Bay Area Economics, Inc. & UC Santa Cruz	Available	Implan	Yes, partially
52	UC System		2003 ICF Consulting, Inc.	Available	Implan	Yes, fully
53	University of Central Florida	2003	2004 Fred H. Trammell, Bradley M. Braun, Peter Panousis, University of Central F	Available	Implan	No
54	University of Cincinnati Academic Health Center				N/A	
55	University of Colorado System		2005 System Office of Information & Analysis, University of Colorado System	Available	N/A	No
56	University of Connecticut		2009		Implan	
57	University of Connecticut		2003 Connecticut Center for Economic Analysis, University of Connecticut 200	Available	Remi	No
58	University of Florida	2005-2006	2007 Food & Resource Economics Department, University of Florida	Available	Implan	No
59	University System of Georgia	2007	2008 Selig Center for Economic Growth, Terry College of Business, University c	Available	Implan	No
60	University System of Georgia	2000-2001	2002 Office of Economic Development, University of Georgia	Available	Implan	No
61	University of Hawaii	2003	2004 Economic Research Organization, University of Hawaii	Available	N/A	No
62	University of Houston		2006 The Institute for Regional Forecasting, University of Houston	Available	Remi	No
63	University of Maine System		2007		Implan	
64	University of Maryland System		2002 The Jacob France Institute, Merrick School of Business, University of Balt	Available	N/A	No
65	University of Massachusetts system		2006 Economic Policy and Analysis, UMass Donahue Institute	Available	Implan	No
66	University of Medicine and Dentistry of New Jersey	2006-2007	Department of University Affairs, University of Medicine and Dentistry of	Available	N/A	No
67	University of Miami	2003-2004	2005 The Washington Economics Group, Inc.	Available	N/A	Yes, fully
68	University of Missouri		Division of Applied Social Sciences, College of Agriculture, Food & Natura	Available	Implan	No
69	University of Nebraska Med Center	2005	2006 Development Research Partners, Inc.	Available	N/A	Yes, fully
70	University of New Mexico		2004 Bureau of Business and Economic Research, University of New Mexico	Available	Implan	No
71	University of North Carolina System		2001 Office of Economic Development, Kenan Institute, The University of Nort	Available	Remi	No
72	University of North Dakota	2007	Bureau of Business and Economic Research, University of North Dakota	Available	N/A	No
73	University of North Dakota	2006	Bureau of Business and Economic Research, University of North Dakota	Available	N/A	No
74	University of Notre Dame	2002	Bay Area Economics, Inc.	Available	Implan	Yes, fully
75	University of Oregon	2002	Larry Singell, professor of economics, University of Oregon	Available	Implan	No
76	University of Pennsylvania		2006 Econsult Corporation, Inc.	Available	N/A	Yes, fully
77	University of Pittsburgh		2004 Department of University Marketing Communications, University of Pitts	Available	N/A	No
78	University of Rochester		2007 CGR, Inc.	Available	Implan	Yes, fully
79	University of South Carolina system		2000 Division of Research, The Darla Moore School of Business, University of S	Available	Implan	No
80	University of Southern California	2005-2006	2006 Economics Research Associates & University of Southern California	Available	N/A	Yes, partially
81	University of Texas System	2004	Institute for Economic Development, University of Texas at San Antonio	Available	Implan	No
82	University of Washington		University Relations, University of Washington	Available	N/A	No
83	Utah public universities	2003	2005 Bureau of Economic and Business Research, University of Utah	Available	N/A	No
84	University of Wisconsin-Madison		2003 NorthStar Economics, Inc.	Available	N/A	Yes, fully
85	Vanderbilt and other Middle Tennessee universities		2007 Business and Economic Research Center, Jennings A. Jones College of Bu	Available	Implan	No
86	Wayne State University		2004 Anderson Economic Group, Inc.	Available	N/A	Yes, fully
87	Wright State University		2007 Appleseed, Inc.	Available	Imolan	Yes, fully