

**A Needs Assessment Study
Commissioned by
Georgia's Intellectual Ca**



The Economic Impact of University System of Georgia Institutions on Their Regional Economies in FY 2004

Executive Summary

The statewide economic impact of the University System of Georgia's 34 institutions in fiscal year 2004 includes:

- § \$9.7 billion in output (sales);
- § \$5.9 billion in gross regional product;
- § \$4.4 billion in income; and
- § 106,831 full- and part-time jobs (2.8% of all jobs held by Georgians).

These benefits permeate both the private and public sectors of the host communities. For example, for each job created on campus there are 1.7 off-campus jobs that exist because of spending related to the college or university.

These economic impacts were especially significant given the sub-par performance of both the national and state economies. Even in tough economic times, continued emphasis on colleges and universities as a pillar of the state's economy translates into more jobs, higher incomes, and greater production of goods and services.

In addition to the system-wide impact summarized here, the chapters that follow quantify the economic benefits that each institution conveys to the community in which it is located. Each institution's benefits are estimated for several categories of college/university-related expenditures: spending by the institutions themselves for salaries and fringe benefits, operating supplies and expenses, and other budgeted expenditures; spending by the students attending the institutions; and spending by the institutions for capital projects.

1. Introduction

How much does a region benefit economically from hosting an institution of higher education? Traditionally, benefits are discussed in broad, qualitative terms that often fail to satisfy those who demand tangible evidence of the economic linkages between the academic community and the community as a whole. However, this report quantifies the economic benefits that the University System of Georgia's 34 institutions convey to the communities in which they are located.

The benefits are estimated for three important categories of college/university-related expenditures:

- 1.

3. Methodology

Understanding the Concept of the Short-Term Economic Impact of a College or University

The total annual economic impact of college- or university-related spending consists of the net changes in regional output, value added, labor income, and employment that are due to initial spending by the institution, its faculty and staff, and its students. The total economic impact includes the impact of both the initial round of spending and the secondary, or indirect and induced spending (often referred to as the multiplier effect), which is created as the initial expenditures are respent. Figure 1 provides a schematic representation of impact relationships.

There are two types of secondary spending: indirect spending and induced spending. Indirect spending refers to the changes in interindustry purchases as a region's industries respond to the additional demands triggered by spending by the college or university, its faculty and staff, and its students. It consists of the ripples of activity that are created when an institution and its employees and students purchase goods or service from other industries

and provide a much more realistic measure of the true economic impact of a college or university on its regional economy.

The regional economic areas are the host communities, including the surrounding counties from which employees and students commute. The effects of expenditures that go to persons, businesses, or governments located outside the regions are not included in the value-added, labor income, and employment impact estimates.

The multiplier concept is common to virtually all economic impact studies. Multipliers measure the response of the local economy to a change in demand or production. In essence, multipliers capture the impact of the initial round of spending plus the impacts generated by successive rounds of respending those initial dollars. The magnitude of a particular multiplier depends upon what proportion of each dollar spent leaves the region during each round of spending. Multipliers therefore are unique to the region and to the industry that receives the initial round of spending.

Figure 2 illustrates the successive rounds of spending that might occur if a person buys an item locally. Assume that the amount spent is \$100 and that the appropriate regional output multiplier is 2.0. The initial injection of spending to the region is \$100, which creates a direct economic impact of \$100 to the regional economy. Of that \$100, only \$50 is respent locally; the rest flows out of the region through non-local taxes, non-local purchases, and income transfers. After the first round of spending, the total economic impact to the region is \$150. During the second round of respending, \$25 is respent locally and \$25 leaks out of the region, a 50 percent leakage. Now, the total economic impact to the region is \$175. After seven rounds of respending, less than \$1 remains in the local economy, but the total economic impact has reached almost \$200. The induced (multiplier effect) impact to the region (\$100) equals the total impact (\$200) minus the direct impact (\$100).

The multiplier traces the flows of respending that take place throughout the region until the initial dollars have completely leaked to other regions. Obviously, multiplier effects within large, self-sufficient areas are likely to be larger than those in small, rural, or specialized areas that are less able to capture spending for neces

industries, and therefore have relatively high multiplier values. Conversely, electric, gas, and sanitary services usually are less intertwined with local supporting industries, and their multipliers are lower.

Analytic Approach

Estimating the economic impact of the University System of Georgia institutions on their regional economies in FY 2004 involved four basic steps. First, initial spending and employment for each institution were obtained for Budget Unit "A" and Budget Unit "B" of the University System of Georgia FY 2004 Budget; and then the institutional expenditures were allocated to industrial sectors recognized by the economic impact modeling system. Second, spending by students was estimated and then allocated to industrial sectors. Third, expenditures associated with capital projects (construction) funded were obtained for each institution and were allocated to the appropriate industrial sectors. Finally, the IMPLAN Professional Version 2.0 modeling system was used to build regional economic models that are specific to each institution.

The geographic areas corresponding to the regional models that were built for each institution, which include the labor force directly involved in their economic spheres, are reported in Appendix 1. These geographic areas are based on an analysis of commuting patterns data obtained from *Census 2000 (Residence County to Workplace County Flows for Georgia*, U.S. Census Bureau, Internet Release Date: March 6, 2003).

For analytical purposes, all dollar amounts were converted to inflation-adjusted 2001 dollars, but the amounts expressed in this report have been re-inflated to 2004 dollars. Type SAM (Social Accounting Matrices) multipliers from the IMPLAN modeling system were used to estimate the economic impacts associated with all categories of spending. Type SAM multipliers capture the original expenditures resulting from the impact, the indirect effects of industries buying from industries, and the induced effects of households' expenditures based on information in the social accounting matrix. The multipliers account for Social Security and income tax leakage, institutional savings, commuting, inter-institutional transfers, and people-to-people transfers.

Whenever appropriate, the IMPLAN software applied margins to convert purchaser

recreational programs operated by students). The spending associated with such activities is included in the student's personal expenditures, however. Expenditures for the Medical College of Georgia do not account for spending by the hospital and clinics operated by MCG Health, Inc., which became a not-for-profit corporation in July 2000. Therefore, these expenditures are not comparable to previously published estimates for the institution.

Since a detailed analysis of spending patterns at each institution was not practical, budgeted expenditures for operating expenses were allocated to various economic sectors based on a typical expenditure pattern estimated for U.S. colleges that was developed by the IMPLAN 2.0 modelers.

Institution-specific data on capital projects (construction) funded also were obtained from the Board of Regents. The expenditures were allocated to the year of reported funding, regardless of whether or not all of the funds were actually spent during that fiscal year. Therefore, the amounts for capital projects and their impacts are not included in the economic impacts expressed in Tables 1-3. However, they are reported in Appendix 2.

Students' Personal Expenditures

Students who attend an educational institution spend significant amounts of money in the local economy as a part of their living expenses. Since a detailed survey of students' spending habits at each institution was not practical, typical expenditure levels per student per semester were estimated based on data from several sources: (1) the *2001 Consumer Expenditure Survey* conducted by the U.S. Bureau of Labor Statistics (BLS); (2) a special BLS study that appeared in the July 2001 issue of the *Monthly Labor Review* that examined the expenditures of college-age students and non-students; and (3) a sample of recent estimated costs of attendance prepared by individual institutions. Although the estimated costs of attendance prepared by individual institutions were not detailed enough to be used in the IMPLAN modeling system, they did provide information that was used to develop a profile of average expenditures for some of the items typically purchased by students.

The *2001 Consumer Expenditure Survey* covers consumer units consisting of one person at various income levels, but no recent data are available specifically for college students; therefore, to adapt the data for this study, spending estimates for several categories of goods or

services were increased, decreased, or eliminated. For example, compared to a weighted average of consumer units at lower income levels, students' expenditures for books and food consumed away from home were increased substantially, while students' expenditures for groceries, cash contributions, insurance and pensions, and health care were reduced. Because expenditures for vacation and travel do not take place locally, such expenditures were eliminated entirely. Additionally, expenditures for tuition were eliminated because of possible double counting. Institutions receive payments from students for tuition, which in turn support the institutions' expenditures, which has already been estimated. After these adjustments, the average expenditure per student was estimated at \$3,360 for Summer 2003 Semester, at \$5,600 for Fall 2003 Semester, and at \$5,600 for Winter 2004 Semester.

The final step in estimating students' personal expenditures was to multiply the number of semesters of student spending by the average spending per semester. For FY 2004, these amounts are reported in the first column of Tables 1 and 2. The number of semesters of students' spending equals each institution's FTE enrollment as reported in the appropriate *Semester Enrollment Report* issued by the Board of Regents.

4. Results

This section describes the economic benefits that the University System of Georgia's 34 institutions conveyed to their host communities in FY 2004. The estimates represent the economic impact of spending by an institution, its faculty and staff, and its students. Based on the methodology and available data described earlier, the IMPLAN modeling

Measured in the simplest and broadest possi

Labor Income Impact

Collectively, the 34 University System institutions generated a labor income impact of \$4.4 billion in FY 2004. The labor income received collectively by the institutions

5. Limitations and Topics for Future Research

Because the goal of this study was to estimate the economic impact of all 34 institutions, certain necessary assumptions were designed to work well for the average institution, but may lead to an over- or under-estimate of the economic contribution that a specific institution makes to its host community. Detailed surveys of actual spending by students at various institutions could help to refine estimates of initial spending by students.

Due to both resource limitations and data limitations, several important types of short-term college or university-related expenditures were not estimated. For example, studies could be conducted to measure (1) spending by visitors to the institutions and (2) spending by each institution's retirees who still live in the host communities. Also, it would be worthwhile to investigate expenditures supported by the non-institutional income of each institution's employees. Such income may come from an employee's consulting, investments, and other personal business activities. Moreover, other members of an employee's household often supplement their total household income. Employees' household incomes also can be supplemented via inheritances or gifts. At least a portion of income derived from these sources would not come to the community that hosts the institution if that person's job at the college/university did not exist.

Since this study intentionally focused only on the short-term impacts of several types of college- or university-related spending, there was no attempt to evaluate the long-term impacts of the University System's institutions on the economic development of the host communities and the state. After all, colleges and universities not only spend money year by year, but also have long-term impacts on the labor force, local business and industry, and local government.

A college or university improves the skills of its graduates, thereby increasing their productivity and their lifetime earnings. Local businesses benefit from easy access to a large pool of part-time and full-time workers. Moreover, companies and agencies that depend on highly specialized skills often cluster around universities. This may be particularly true of high-tech and information-based companies, which, despite the recent recession and sub-par recovery, are still expected to account for a disproportionately high share of future economic growth.

Finally, the outreach and service units of the college or university provide valuable services to local businesses and households. Cultural and educational programs and facilities

often are available to the general public and provide intangible benefits to the host community by improving residents' quality of life.

6. Summary

The fundamental finding of this study is that each of the University System of Georgia's 34 institutions creates substantial economic impacts in terms of output, value added, labor income, and employment. The combined economic impact of the University System's 34 institutions on their host communities in FY 2004 includes:

- \$9.7 billion in output (sales);
- \$5.9 billion in value added (gross regional product);
- \$4.4 billion in labor income; and
- 106,831 full- and part-time jobs.

These economic impacts were especially significant given the substandard performance of the national and state economies in FY 2004. Even in tough economic times, continued emphasis on higher education as an enduring pillar of the regional economy translates into more jobs, higher incomes, and greater production of goods and services for local households and businesses.

Figure 1

**Schematic Representation
of Impact Relationships**

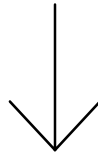
Direct
Expenditures



Indirect & Induced Impacts
(Multiplier Effects)



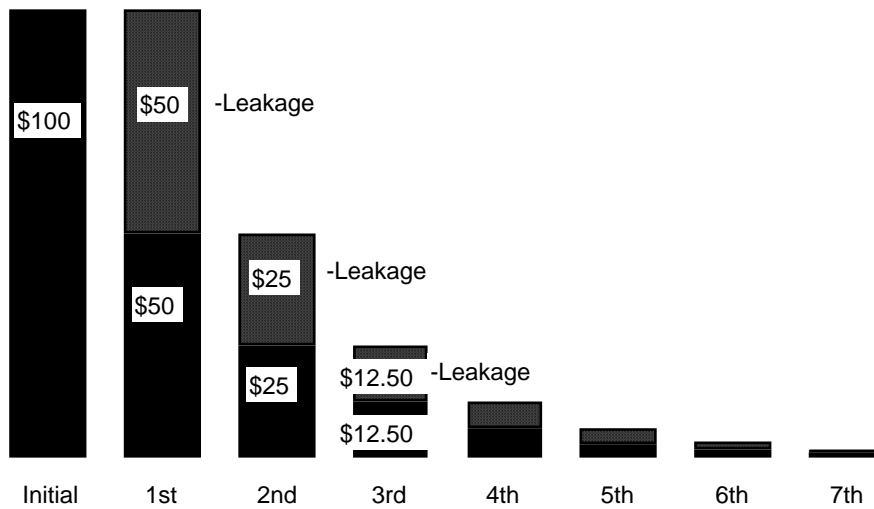
Total Direct
Economic Impact



Total Economic Impact

Figure 2

How Multipliers Capture the Impact of Responding Initial Impacts if the Output Multiplier Equals 2.0



Initial Direct or Indirect Impact: \$100
 First Round of Responding: \$50 respent locally, \$50 leakage*
 Second Round of Responding: \$25 respent locally, \$25 leakage
 Third Round of Responding: \$12.50 respent locally; \$12.50 leakage
 Fourth Round of Responding: \$6.25 respent locally; \$6.25 leakage
 Fifth Round of Responding: \$3.12 respent locally; \$3.12 leakage
 Sixth Round of Responding: \$1.56 respent locally; \$1.56 leakage
 Seventh Round of Responding: \$.78 respent locally; \$.78 leakage

—————
 Total Economic Impact: \$200 Total Leakage: \$100

*Leakage indicates amounts spent outside area and not recirculated locally.

Table 1

Total Economic Impact of all 34 Institutions of the University System of Georgia
on Their Regional Economies in the 2004 Fiscal Year

Total for All 34 Institutions in 2004	Initial Spending (current dollars)	Output Impact (current dollars)	Value Added Impact (current dollars)	Labor Income Impact (current dollars)	Employment (jobs)
System Total	6,359,472,602	9,676,857,493	5,906,070,256	4,364,678,229	106,831
Personal Services	2,373,591,927	4,724,188,936	3,386,292,035	2,939,000,643	58,058
Operating Expenses	1,437,922,115	1,858,802,663	661,816,492	429,631,390	11,241
Student Spending	2,547,958,560	3,093,865,894	1,857,961,728	996,046,195	37,532

Notes:

- The impacts of spending on Output, Value Added, Labor Income, and Employment were estimated using the IMPLAN Professional System, version 2.0, Type SAM multipliers, and production functions provided by MIG, Inc.
- Initial spending for personal services and operating expenses was obtained from the Board of Regents of the University System of Georgia. The author estimated initial spending by students.
- Output refers to the value of total production, including domestic and foreign trade. Value Added includes employee compensation, proprietary income, other property income, and indirect business taxes. Labor Income includes both the total payroll costs (including fringe benefits) of workers who are paid by employers and payments received by self-employed individuals. Employment includes both full-time and part-time jobs.
- Estimates for the Medical College of Georgia do not include impacts associated with the hospital and clinics operated by MCG Health Inc.

Source: Selig Center for Economic Growth, Terry College of Business, University of Georgia (www.selig.uga.edu), January 2005.

Table 2 (continued)

Total Economic Impact of University System of Georgia
Institutions on Their Regional Economies in the 2004 Fiscal Year

Institution	Initial Spending (current dollars)	Output Impact (current dollars)	Value Added Impact (current dollars)	Labor Income Impact (current dollars)	Employment Impact (jobs)
Augusta State University	106,875,053	150,722,286	90,907,717	63,276,937	1,901
Personal Services	30,540,605	59,399,183	42,077,199	36,864,158	762
Operating Expenses	13,952,688	17,276,105	5,462,059	3,443,868	118
Student Spending	62,381,760	74,046,999	43,368,459	22,968,911	1,021
Clayton College & State University	96,166,816	146,651,458	93,010,742	64,066,365	1,894
Personal Services	26,973,502	55,475,710	40,410,272	34,659,316	1,059
Operating Expenses	13,118,274	18,161,810	7,673,121	4,938,310	108
Student Spending	56,075,040	73,013,938	44,927,349	24,468,739	727
Columbus State University	125,215,287	174,301,022	103,861,512	72,809,998	2,014
Personal Services	35,818,780	69,169,512	48,983,496	42,993,653	774
Operating Expenses	19,105,307	22,935,964	6,386,825	4,236,288	143
Student Spending	70,291,200	82,195,545	48,491,191	25,580,057	1,097
Dalton State College	57,301,816	73,636,446	43,232,860	29,888,939	937
Personal Services	14,094,614	26,460,248	18,522,436	16,468,350	355
Operating Expenses	8,066,082	9,409,793	2,433,510	1,636,135	56
Student Spending	35,141,120	37,766,405	22,276,914	11,784,454	526
Fort Valley State University	84,289,252	123,724,609	71,338,318	53,685,499	1,347
Personal Services	30,907,320	59,871,305	42,709,855	37,447,243	698
Operating Expenses	25,761,612	31,410,381	9,681,091	6,211,046	203
Student Spending	27,620,320	32,442,924	18,947,373	10,027,210	446
Georgia College and State University	123,524,840	154,777,351	84,841,362	62,116,188	1,977
Personal Services	37,328,936	67,279,228	45,712,648	41,500,024	849
Operating Expenses	25,593,824	27,602,236	4,783,844	3,125,259	113
Student Spending	60,602,080	59,895,887	34,344,870	17,490,905	1,015
Georgia Southwestern State University	51,260,746	67,457,547	38,006,717	28,132,262	846
Personal Services	17,308,981	31,718,818	21,629,578	19,467,566	391
Operating Expenses	9,111,285	10,013,932	1,802,649	1,206,606	51
Student Spending	24,840,480	25,724,797	14,574,490	7,458,090	404
Kennesaw State University	289,965,412	440,937,822	281,407,260	192,871,382	4,287
Personal Services	80,463,268	165,486,741	120,545,807	103,390,425	1,725
Operating Expenses	32,327,104	44,755,792	18,908,722	12,169,380	265
Student Spending	177,175,040	230,695,289	141,952,731	77,311,577	2,297
Macon State College	82,208,825	112,034,568	65,761,243	44,889,777	1,487

Table 2 (continued)

Total Economic Impact of University System of Georgia
Institutions on Their Regional Economies in the 2004 Fiscal Year

Table 2 (continued)

Total Economic Impact of University System of Georgia
Institutions on Their Regional Economies in the 2004 Fiscal Year

Institution	Initial Spending (current dollars)	Output Impact (current dollars)	Value Added Impact (current dollars)	Labor Income Impact (current dollars)	Employment Impact (jobs)
Darton College	61,129,841	82,252,056	47,719,480	32,676,702	1,081
Personal Services	14,373,330	27,556,181	19,428,566	17,146,075	397
Operating Expenses	10,028,351	12,126,530	3,502,646	2,280,298	77
Student Spending	36,728,160	42,569,345	24,788,268	13,250,329	607
East Georgia College	22,346,029	27,803,211	15,159,858	10,376,604	441
Personal Services	4,827,272	8,989,332	6,203,395	5,553,924	152
Operating Expenses	4,107,877	4,715,856	1,069,637	715,759	30
Student Spending	13,410,880	14,098,023	7,886,826	4,106,920	259
Floyd College	49,365,461	65,265,543	38,708,261	26,306,362	869
Personal Services	12,392,667	23,710,843	16,657,786	14,690,090	313
Operating Expenses	5,812,154	6,981,835	2,045,888	1,272,684	43
Student Spending	31,160,640	34,572,865	20,004,587	10,343,587	513
Gainesville College	73,229,945	103,268,391	63,858,615	41,987,928	1,132
Personal Services	15,827,262	31,425,510	22,498,015	19,473,467	381
Operating Expenses	6,848,123	8,903,831	3,197,187	2,109,692	53
Student Spending	50,554,560	62,939,050	38,163,414	20,404,769	698
Georgia Perimeter College	288,070,689	428,511,049	269,161,283	180,046,524	5,159
Personal Services	66,693,551	137,166,917	99,916,747	85,697,172	2,468
Operating Expenses	37,557,138	51,996,596	21,967,864	14,138,200	308
Student Spending	183,820,000	239,347,536	147,276,672	80,211,152	2,383
Gordon College	51,904,913	76,160,300	47,165,157	31,071,312	782
Personal Services	10,490,615	21,575,779	15,716,484	13,479,805	283
Operating Expenses	8,010,298	11,089,989	4,685,372	3,015,437	66
Student Spending	33,404,000	43,494,532	26,763,301	14,576,070	433
Middle Georgia College	42,731,233	52,761,063	29,451,660	20,638,026	763
Personal Services	10,489,499	19,412,469	13,383,153	12,033,896	299
Operating Expenses	7,041,734	7,823,141	1,524,230	1,054,744	43
Student Spending	25,200,000	25,525,453	14,544,276	7,549,386	421

(continued)

Table 2 (continued)

Total Economic Impact of University System of Georgia
Institutions on Their Regional Economies in the 2004 Fiscal Year

<u>Institution</u>	Initial Spending	Output Impact	Value Added Impact	Labor Income Impact	Employment Impact
--------------------	---------------------	------------------	-----------------------	------------------------	----------------------

Table 3

On-Campus and Off-Campus Jobs that Exist Due to Institution-Related Spending in the 2004 Fiscal Year

<u>Institution</u>	<u>Total Employment Impact</u>	<u>On-Campus Jobs</u>	<u>Off-Campus Jobs that Exist Due to Institution-Related Spending</u>
System Total	106,831	40,224	66,607
Research Universities and Regional Universities			
Georgia Institute of Technology	13,888	5,487	8,401
Georgia State University	10,233	3,644	6,589
Medical College of Georgia	8,830	4,657	4,173
University of Georgia	22,458	10,145	12,313
Georgia Southern University	6,252	1,779	4,473
Valdosta State University	3,635	1,151	2,484
State Universities and State Colleges			
Albany State University	1,676	584	1,092
Armstrong Atlantic State University	2,167	751	1,416
Augusta State University	1,901	515	1,386
Clayton College & State University	1,894	852	1,042
Columbus State University	2,014	499	1,515
Dalton State College	937	264	673
Fort Valley State University	1,347	453	894
Georgia College and State University	1,977	658	1,319
Georgia Southwestern State University	846	290	556
Kennesaw State University	4,287	1,108	3,179
Macon State College	1,487	416	1,071
North Georgia College & State Univ.	1,778	785	993
Savannah State University	1,148	428	720
Southern Polytechnic State Univ.	1,172	434	738
State University of West Georgia	3,025	922	2,103
Associate Degree Colleges			
Abraham Baldwin Agric. College	976	272	704
Atlanta Metropolitan College	606	249	357
Bainbridge College	592	153	439
Coastal Georgia Community College	732	201	531
Darton College	1,081	289	792
East Georgia College	441	117	324
Floyd College	869	220	649
Gainesville College	1,132	269	863
Georgia Perimeter College	5,159	1,957	3,202
Gordon College	782	203	579
Middle Georgia College	763	227	536
South Georgia College	465	158	307
Waycross College	283	88	195

Notes:

- Employment includes both full-time and part-time jobs.
- Estimates for the Medical College of Georgia do not include impacts associated with the hospital and clinics operated by MCG Health Inc.

Source: Selig Center for Economic Growth, Terry College of Business, University of Georgia (www.selig.uga.edu), January 2005.

Appendix 1

Appendix 2

Total Economic Impact of Capital Projects of University System of Georgia Institutions on Their Regional Economies in the 2004 Fiscal Year

<u>Institution</u>	<u>Initial Spending (current dollars)</u>	<u>Output Impact (current dollars)</u>	<u>Value Added Impact (current dollars)</u>	<u>Labor Income Impact (current dollars)</u>	<u>Employment Impact (jobs)</u>
System Total	51,725,000	76,812,399	35,092,272	30,029,268	984
Research Universities and Regional Universities					
Georgia Institute of Technology	0	0	0	0	0
Georgia State University	3,500,000	6,740,710	3,562,366	3,027,814	68
Medical College of Georgia	8,600,000	14,263,856	6,472,488	5,609,565	182
University of Georgia	2,500,000				

ICAPP[®] Intellectual Capital Partnership Program[®]
The Economic Development Program of the University System of Georgia
270 Washington Street S.W.
Atlanta, Georgia 30334
Office 404-656-2275 / Fax 404-657-1489
www.icapp.org