

# **Economic Impact of the Jiann-Ping Hsu College of Public Health on Georgia's Southeast Regional Economy.**

**Prepared for: Jiann-Ping Hsu College of Public Health**

**Prepared by: Bureau of Business Research  
and Economic Development  
Georgia Southern University**

**October 2006**

# **Economic Impact of the Jiann-Ping Hsu College of Public Health on Georgia's Southeast Regional Economy.**

**Prepared for: Jiann-Ping Hsu College of Public Health**

**Prepared by: \_\_\_\_\_**

**Jeremy Ryan Hill,  
Assistant Director**

**Reviewed by: \_\_\_\_\_**

**Phyllis Isley, Ph.D.,  
Director**

# **Economic Impact of the Jiann-Ping Hsu College of Public Health on Georgia's Southeast Regional Economy.**

This study analyzes the economic impact, benefit, and costs associated with the Jiann-Ping Hsu College of Public Health at Georgia Southern University on Georgia's southeast regional economy.<sup>1</sup>

The College of Public Health was initially established as a School of Public Health in January of 2004, making it the first School of Public Health in the University System of Georgia. The establishment of the school was made possible by a generous \$2.5 million gift from Dr. Karl E. Peace, in memory and honor of his wife, Dr. Jiann-Ping Hsu. At the beginning of January 2006, the school was renamed the Jiann-Ping Hsu College of Public Health to position itself for accreditation by the Council on Education for Public Health. The college currently offers degrees in Master of Health Services Administration (M.H.S.A.) and Master of Public Health (M.P.H.), with emphasis areas in Biostatistics, Community Health Education, Environmental Health Sciences, Epidemiology, and Health Services Policy and Management.

## **Economic Impact Summary**

The College of Public Health is expected to increase employment and output in both the regional economy and the State of Georgia. The following highlights these economic impacts.

- The total increase in employment for 2005 was estimated to be 26 jobs. By 2020, employment is expected to reach a sustained increase of 146 jobs. Therefore, the College of Public Health will support a permanent increase of at least 146 jobs over the next fifteen years.
- Gross Regional Product is expected to increase by almost \$7.3 million in 2020. The largest portion of the increase in GRP is within the Service sector, which includes Education.
- Other noteworthy impacts include total personal income increasing by about \$12.4 million, total disposable income increasing by about \$10.7 million, total population increasing by about 168, and labor force increasing by about 109 jobs.

The summary above shows a very conservative estimate of the economic contributions of the College of Public Health. In addition to these direct quantitative values, the college will have other positive affects on the region, as shown below. Moreover, the following were not included in the quantified economic impact estimates.

---

<sup>1</sup> This study includes the Center for Biostatistics and the Center for Rural Health as part of the College of Public Health.

- The College will supply a highly skilled labor force within the State and regional economies. The higher productivity of this labor force will directly benefit such businesses as health departments, hospitals, and pharmaceutical companies.
- The Public Health program will contribute to the State and region-wide economic development effort to attract high technology companies within the growing medical cluster because of its presence, innovation, and supply of knowledgeable labor.
- The strong research orientation of the program will enhance Georgia Southern University's on-going effort to gain recognition for its academic program through an enhanced reputation as a research center.

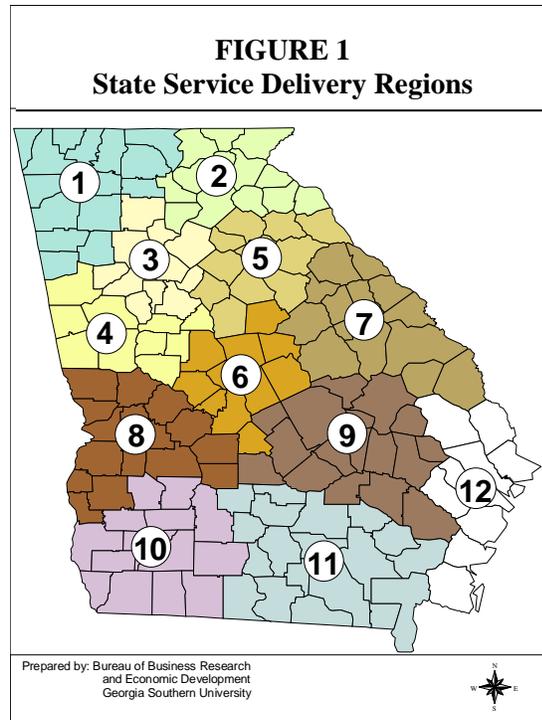
Overall, the State and regional economies will significantly benefit from the presence of the Jiann-Ping Hsu College of Public Health. Although this study looks primarily at easily quantifiable measures, there are many more valuable economic contributions that it has to offer.

## Data and Region

The data supplied for this economic impact analysis came mainly from two sources: Georgia Southern University and the Travel Industry Association of America.

The Dean of the College of Public Health provided not only the fall and spring enrollment estimates for fiscal year 2005-2006, but also the fulltime equivalent of faculty and staff.<sup>2</sup> The Director Administrative of the Financial Accounting office at Georgia Southern University provided the personal and operating expenditure budget accounts for the College of Public Health, the Center for Biostatistics, and the Center for Rural Health.<sup>3</sup> The estimated expenditures for tourism travel for the annual Biopharmaceutical Applied Statistics Symposium (BASS) conference came from Travel Industry Association of America.<sup>4</sup>

Figure 1 represents the economic regions used in this study.<sup>5</sup> Although Georgia Southern is located in Bulloch County, it has a much larger impact on the regional economy than on the Coast. This study only looks at the impact of the College of Public Health on the southeast region of the State: Regions 7, 9, 11, and 12. For the remainder of the study, this region will only be referred to as southeast Georgia or regional economy.



## Direct Economic Impact – Input Data

There are three main areas in which this study calculated the economic contributions of the College of Public Health on the regional economy: Impact of the payroll and operating expenditures, student spending, and the annual BASS conference. Although these three components would make up a majority of the economic impact, they do not represent all of the economic benefits to the regional economy.

<sup>2</sup> Dr. Charles J. Hardy, Founding Dean of the Jiann-Ping Hsu College of Public Health, e-mailed this information on June 6, 2006.

<sup>3</sup> Carl Bird, Director Administrative of the Financial Accounting office, faxed this information on June 2, 2006.

<sup>4</sup> “Business and Convention Travelers 2004 Edition”, Travel Industry Association of America.

<sup>5</sup> The twelve State Service Delivery Regions were created by the Governor and General Assembly in 1998 for the Department of Community Affairs and the Department of Economic Development for these agencies to assist in community development and for research purposes. For more information about the State Service Delivery Regions, please visit [www.georgiaregions.org](http://www.georgiaregions.org).

Table 1 represents the estimated student enrollment within the College of Public Health and the total estimated expenditures, excluding tuition and other college fees.<sup>6</sup> It should be noted that the actual 2005 fall enrollment was slightly lower at 43 students. The growth assumption in the student enrollment estimates were based on a full build out period of six to seven years and a maximum capacity of 200 students. The estimated student spending per year was \$8,122, which was partially based on a study by Georgia Southern University's Strategic Research and Analysis.<sup>7</sup>

**TABLE 1**  
**Estimated Enrolment and Total Student Expenditures 2004\$**

	<u>2005</u>	<u>2007</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>
<b>Estimated Enrolment</b>	<b>50</b>	<b>100</b>	<b>175</b>	<b>200</b>	<b>200</b>
	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
Books and Supplies	\$ 46,502	\$ 93,003	\$ 162,756	\$ 186,007	\$ 186,007
Housing	\$ 139,325	\$ 278,650	\$ 487,638	\$ 557,301	\$ 557,301
Food	\$ 89,415	\$ 178,831	\$ 312,953	\$ 357,661	\$ 357,661
Transportation	\$ 44,757	\$ 89,514	\$ 156,649	\$ 179,028	\$ 179,028
Other Expenses	\$ 86,582	\$ 173,164	\$ 303,037	\$ 346,328	\$ 346,328
<b>Total</b>	<b>\$406,118</b>	<b>\$812,236</b>	<b>\$1,421,412</b>	<b>\$1,624,471</b>	<b>\$1,624,471</b>

Table 2 represents the payroll and operating expenditures of the College of Public Health. It should be noted, again, that this study considers the Center for Biostatistics and the Center for Rural Health to be part of the overall budget of the College of Public Health.<sup>8</sup>

<sup>6</sup> Dr. Karl E. Peace indicated that the full capacity of the College of Public Health would be around 200 students within six to seven years. This study assumed a linear increase in student enrollment between 2005 and 2011, thereafter, it was held constant.

<sup>7</sup> It should be noted that this estimate includes the different spending levels of students living on campus versus off campus, undergraduate versus graduate, and spending relative to enrollment levels for each semester.

<sup>8</sup> Dr. Charles Hardy, Founding Dean and Professor of the Jiann-Ping Hsu College of Public Health, provided the college's estimated payroll and operating expenditures.

**TABLE 2**  
**Estimated Payroll and Operating Expenditures**  
**Public Health**

	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
Faculty	6	12	32	43	50
Staff	4	4	5	9	10
<b>Total Sal/Ben</b>	\$ 821,603	\$ 1,172,421	\$ 3,144,521	\$ 5,338,598	\$ 7,115,424
<b>Operating/Other</b>	\$ 24,000	\$ 86,080	\$ 470,520	\$ 739,070	\$ 969,369
<b>Totals</b>	<b>\$ 845,603</b>	<b>\$ 1,258,501</b>	<b>\$ 3,615,041</b>	<b>\$ 6,077,668</b>	<b>\$ 8,084,793</b>

Operating Supplies figured on 3,000 per faculty for supplies and travel with a 3% per year COL increase.  
 Lab Equipment focuses upon Epidemiology and Environmental Health Sciences start-up and maintenance.  
 New staff will start at 45K (Salary and Benefits) in 2011 and assume 3% COL per year  
 Faculty 102,253 Salary and Benefits and 3% COL increase.  
 GA's Fall 2007 Doctoral GA's offered at 12,000 per year, MPH = 6,000 per year.

Table 3 represents the estimated direct expenditures from the Biopharmaceutical Applied Statistics Symposium. The estimated per person per day expenditure was just under \$196.00, excluding the registration fee.<sup>9</sup> The attendance, duration, and additional family members were estimated by Dr. Karl E. Peace.

**TABLE 3**  
**BASS Visitor Profile and Expenditure Estimates**

	<b>Single</b>	<b>Family</b>	<b>Attendance</b>	<b>Family Members</b>	<b>Total</b>
3 days	59	7	65	12	77
5 days	50	6	55	10	65
<b>Total</b>	<b>108</b>	<b>12</b>	<b>120</b>	<b>23</b>	<b>143</b>

\*There may be errors due to rounding

**Total Trip spending (2004\$)**

	<b>3 Days</b>	<b>5 Days</b>	<b>Total</b>
Auto Transportation	\$ 6,365	\$ 8,976	\$ 15,341
Lodging	\$ 18,640	\$ 26,287	\$ 44,927
Foodservice	\$ 11,820	\$ 16,670	\$ 28,490
Entertainment & Recreation	\$ 1,819	\$ 2,565	\$ 4,383
General Retail Trade	\$ 6,819	\$ 9,617	\$ 16,437
Registration	\$ 52,000	\$ 44,000	\$ 96,000
<b>Total</b>	<b>\$ 45,463</b>	<b>\$ 108,114</b>	<b>\$ 205,577</b>

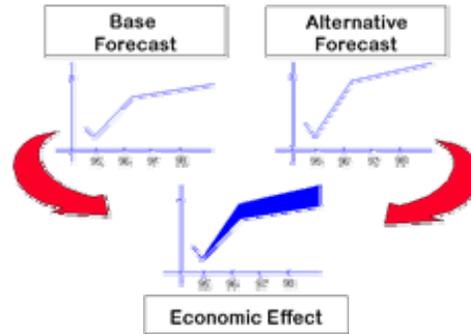
For the purpose of this study, all moneys from students, the state government, and tourist were considered as new cash flows into the regional economy.

<sup>9</sup> The \$196 estimate for a per person per day expenditure partially came from the Travel and Industry Association of America's "Business and Convention Travelers 2004 Edition" report. This estimate was adjusted to reflect the a higher food expenditure cost of \$75. Their estimate of trip spending only represents the total amount spent on the trip at the destination, which would exclude items like airfare.

**The Model- Economic Impacts**

The model used to show the economic impact of the College of Public Health was Regional Economic Modeling Inc. (REMI).<sup>10</sup> This model is a dynamic economic impact model that can analyze multiple impacts geographically and overtime. Additionally, this model incorporates these impacts with the preexisting growth expectations of each region. The concept of how REMI isolates the economic impact is shown in Figure 2. In this figure there is a base forecast (the preexisting growth of the economy absent of the proposed impact), an alternative forecast (the new forecast with the new College of Public Health), and the economic effect (an isolation of the economic impact or the difference between the base forecast and the alternative forecast). For the purpose this study, the following tables and numbers only refer to the economic effect.

**FIGURE 2**  
**Estimating the Economic Effect**



**Economic Impact**

The economic impact of the College of Public Health will be shown in five different ways: employment, output, income, capital stock, and a fiscal impact. It should be noted that the following impacts were created because of the leveraged money from Dr. Karl Peace. Without this money, the regional economy would not experience this stimulus.

Table 4 shows the total economic impact of the College of Public Health on employment between 2005 and 2020. The total increase in employment in 2005 was estimated to be 26 jobs and by 2020 the increase is expected to sustain 146 jobs. One will notice that the peak in employment is during the first six years. This is associated with the initial growth of the college and increased student population.

**TABLE 4**  
**Total Employment - Southeast Georgia**

	2005	2007	2010	2015	2020
<b>Manufacturing</b>	0	1	1	1	1
<b>Non-Manufacturing</b>					
Nat Res, Mining, Util, Const	1	3	5	7	7
Wholesale Trade	0	1	1	1	1
Retail Trade	3	7	10	12	12
Transp, Inform, Fin Act	1	3	3	4	4
Services	19	42	57	90	110
<b>State &amp; Local Gov</b>	0	2	4	8	11
<b>Total</b>	<b>26</b>	<b>58</b>	<b>80</b>	<b>122</b>	<b>146</b>

<sup>10</sup> For more information about REMI and documentation supporting it, please visit [www.remi.com](http://www.remi.com).

Table 5 shows the impact in terms of total output. That is, for each person employed in the economy there is an associated amount of goods and services produced. The table shows that total Gross Regional Product (GRP) was expected to increase by almost \$1.3 million in 2005 and increase to almost \$7.3 million by 2020. It should be noted that the largest portion of the increase in GRP is within the Services sector which includes Education, \$723,440 in 2005 and a little over \$4.3 million in 2020.

**TABLE 5**  
**Gross Regional Product - Southeast Georgia (Fixed 2000\$)**

	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Manufacturing</b>	\$ 78,200	\$ 148,800	\$ 186,900	\$ 209,800	\$ 186,900
<b>Non-Manufacturing</b>					
Nat Res, Mining, Util, Const	\$ 102,341	\$ 280,598	\$ 440,401	\$ 646,696	\$ 738,680
Wholesale Trade	\$ 52,210	\$ 112,100	\$ 161,900	\$ 219,300	\$ 238,900
Retail Trade	\$ 189,800	\$ 424,900	\$ 639,900	\$ 912,700	\$ 1,017,000
Transp, Inform, Fin Act	\$ 217,729	\$ 472,830	\$ 677,900	\$ 908,330	\$ 967,980
Services	\$ 723,440	\$ 1,621,450	\$ 2,278,520	\$ 3,580,600	\$ 4,310,570
<b>Total</b>	<b>\$1,285,520</b>	<b>\$ 2,911,878</b>	<b>\$ 4,198,621</b>	<b>\$ 6,267,626</b>	<b>\$ 7,273,130</b>

Although the College of Public Health will have a large impact in terms of jobs and output, those two components do not represent all the economic benefits of the college. Table 6 shows the impact on total personal income and total disposable income. As such, it is estimated that total personal income will increase by a little over \$12.4 million and total disposable income will increase by almost \$10.7 million by 2020.

**TABLE 6**  
**Income - Southeast Georgia**

	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Personal Income (Nom \$)</b>	\$1,095,000	\$ 2,876,000	\$ 4,616,000	\$8,644,000	\$ 12,410,000
<b>Disposable Income (Fixed 2000\$)</b>	\$ 934,600	\$ 2,445,000	\$ 3,941,000	\$7,416,000	\$ 10,680,000

Another way to look at the economic contributions of the college is to look at how it affects residential and business capital stock.<sup>11</sup> Table 7 shows both the optimal and actual capital stock. Optimal capital stock represents the demand for either the residential or business capital stock, and actual capital stock represents the real value in the increase of the capital stock. As such, the total increase in residential actual capital stock is expected to reach \$9.3 million by 2020. Business actual capital stock is expected to increase by \$873,600 by 2020.

<sup>11</sup> Residential and Business Actual Capital Stock is the amount of capital accumulated over time net of depreciation. Residential and Business Optimal Capital Stock is the amount of capital required to satisfy the current demand in a region. Optimal capital stock minus actual capital stock equals the future investment needed to satisfy current demand.

**TABLE 7**  
**Residential Capital Stock - Southeast Georgia (Fixed 2000\$)**

	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Actual</b>	95,370	564,600	1,854,000	5,135,000	9,308,000
<b>Optimal</b>	2,037,000	4,677,000	7,301,000	12,900,000	17,360,000

**Business Capital Stock - Southeast Georgia**

	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Actual</b>	22,890	122,100	343,300	713,300	873,600
<b>Optimal</b>	644,700	1,270,000	1,591,000	1,621,000	1,053,000

Table 8 shows the impact in terms of the revenues and expenditures on the state and regional economies.<sup>12</sup> As such, both the regional and state economy will benefit from the new College of Public Health. Local revenues are expected to increase by about \$907,900 by 2020 and the state revenues are expected to increase by about \$836,200.

**TABLE 8**  
**Fiscal - Southeast Georgia (2004\$)**

	<b>2005</b>	<b>2007</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>State Revenues</b>	\$ 112,400	\$ 267,400	\$ 413,200	\$ 662,100	\$ 836,200
<b>Local Revenues at Adj State Avg Rates</b>	\$ 78,030	\$ 205,100	\$ 353,400	\$ 646,200	\$ 907,900
<b>State Expenditures</b>	\$ 13,440	\$ 62,010	\$ 158,400	\$ 350,900	\$ 557,500
<b>Local Expenditures Revenues at Adj State Avg Rates</b>	\$ 24,500	\$ 99,710	\$ 240,300	\$ 519,700	\$ 816,100

The College of Public Health will have a tremendous economic impact on both the regional and state economies. Total employment is estimated to increase by 146 jobs and total output by almost \$7.3 million in 2020. Other noteworthy impacts include the following: total personal income increasing by about a little over \$12.4 million and total disposable income increasing by about \$10.7 million.

### **Other Economic Benefits Not Directly Calculated in this Study**

This study used a very conservative approach in estimating the direct and total economic contributions from the Jiann-Ping Hsu College of Public Health on the regional economy. Although this approach ensures a minimum accuracy, it underestimates the real economic impact. In addition to the very conservative approach, this study did not attempt to directly measure some of the other real economic benefits the college has on the state and regional economies.

A graduate program with this level of distinction and specialization will directly benefit labor productivity and the supply of labor within the region.<sup>13</sup> Moreover, this program will produce a highly skilled labor force that could fill a job demand in both rural and urban communities. The types of organizations that students would be qualified to work

<sup>12</sup> The assumption in the REMI model is that the local regional fiscal structure is similar to the state average for local governments. Additionally, this study did not take into account transfer of payments at the state level.

<sup>13</sup> Higher labor productivity, which is induced by education, will directly increase real output, output per worker; therefore, more goods and services will be produced within the regional economy causing an expansion.

for would include health departments, hospitals, Environmental Protection Agency, Center for Disease Control, and even various pharmaceutical companies. A real increase in labor productivity directly increases output, which would in turn increase profits. This is a value that if measured, would expand the regional economy.

Another significant factor that the College of Public Health will directly contribute to the regional economy is innovation. That is, universities have often been thought of as innovation centers where new ideas, products, and processes are created. Therefore, when one combines the supply of high skilled labor and the potential innovation from faculty research, one could easily either attract or create new industry within the regional economy.

There are many other economic benefits from the College of Public Health that this study did not consider. This is especially true when one considers the value of the outreach programs of the Center for Biostatistics and the Center for Rural Health.