

# Stony Brook University

is a crucial and irreplaceable asset to the Long Island economy. The University, Long Island's largest single-site employer, provides nearly 13,500 men and women with full- or part-time jobs. As Long Island's only public research university, Stony Brook produces the educated workforce that drives the area's high-tech economy.



The Impact of  
Stony Brook University  
on the  
Long Island Economy



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Stony Brook University  
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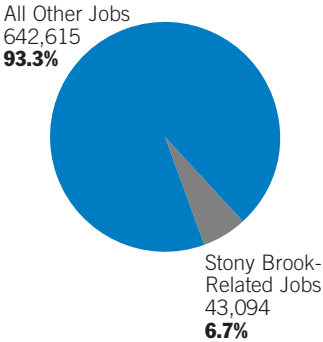
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## **PART I: SUMMARY AND FINDINGS**

1. The total operating budget for 2002/2003 is \$1.17 billion. Direct state tax support accounts for \$159.4 million, or 13.8 percent of the total (not including \$64.4 million in fringe benefits. That brings the state share up to 19 percent).
2. The average salary of employees at Stony Brook is \$52,061. This compares with a regional average salary in all industries of \$39,500.
3. Stony Brook economic development programs bring an additional \$272.5 million in economic revenue to the Long Island region.
4. Students and their families spend an additional \$58.6 million in the Long Island economy not captured in the operating budget, which translates into an additional 1,335 local jobs.
5. Retired Stony Brook employees living on Long Island receive approximately \$82.3 million in income from state pension payments and Social Security. This translates into an estimated 1,812 local jobs.
6. In 2002/2003, Stony Brook operating expenditures (wages and salaries plus utilities, minus estimated employee expenditures for health care) are estimated to be \$630.3 million. The multiplier effect, or secondary impact, of Stony Brook operating expenditures, as determined by the Regional Input–Output Modeling System (RIMS II) developed by the Bureau of Economic Analysis of the United States Department of Commerce, generates an estimated \$504 million in additional revenue to the regional economy and 17,895 additional jobs.
7. In 2002/2003, Stony Brook employees spend an estimated \$33.1 million on health care. The multiplier effect, or secondary impact, of employee health care expenditures generates an estimated \$30.2 million in additional revenue to the regional economy and 812 additional jobs.

**Figure I-1**

**Suffolk County Work Force  
2002**



Source: The Long Island Regional Planning Board

8. In 2002/2003, Stony Brook expenditures on construction that do not appear in the operating budget are estimated at \$46.2 million. An estimated \$37 million, or 80 percent, of construction spending stays within the Long Island economy. The multiplier effect, or secondary impact, of construction spending generates an estimated \$24.9 million in additional revenue to the regional economy and 591 additional jobs.
9. In 2002/2003, it is estimated that Stony Brook will spend \$472.2 million on equipment and supplies. An estimated \$377.7 million, or 80 percent, of equipment and supplies expenditures stays within the Long Island economy. The multiplier effect, or secondary impact, of spending on equipment and supplies generates an estimated \$291.8 million in additional revenue to the regional economy and 10,095 additional jobs.
10. In total, Stony Brook University's impact on the Long Island economy amounts to \$2.5 billion in revenue and 47,438 jobs.
11. The economic impact of Stony Brook University accounts for almost 5 percent of all economic activity in Suffolk County and roughly 6.7 percent of its labor force.
12. The regional economy gets approximately \$2.5 billion from the state's investment of about \$159.4 million in tax dollars. This represents a 1,500 percent return, or an economic gain of \$15 for every dollar the state invests.

**Table I-1**

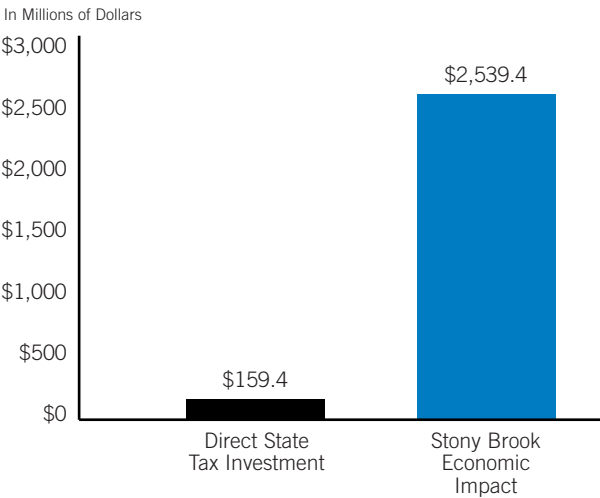
**Stony Brook University's  
Total Economic Impact on Long Island  
2002-2003**

<b>Economic Revenue Source</b>	<b>Total Revenue</b>	<b>Total # of Jobs</b>
Stony Brook Operating Budget	\$1,173.7 M	13,414
Stony Brook Economic Development	272.5 M	1,484
Students/Families–Off Budget	58.6 M	1,335
State-Paid Fringe Benefits–Off Budget	64.4 M	NA
Stony Brook Retiree Income	82.3 M	1,812
Multiplier Effect–Operating Budget	504 M	17,895
Multiplier Effect–Employee Medical Expenditures	30.2 M	812
Multiplier Effect–Construction	61.9 M*	591
Multiplier Effect–Equipment and Supplies	291.8 M	10,095
<b>TOTAL</b>	<b>\$2,539.4 M</b>	<b>47,438</b>

\*This includes original construction expenditures not included in the operating budget of \$37 million plus multiplier revenue of \$24.9 million  
Note: Numbers derived using the Regional Input–Output System of the U.S. Bureau of Economic Analysis

**Figure I-2**

**Direct State Tax Investment in Stony Brook vs. Stony Brook Economic Impact on Long Island 2002-2003**



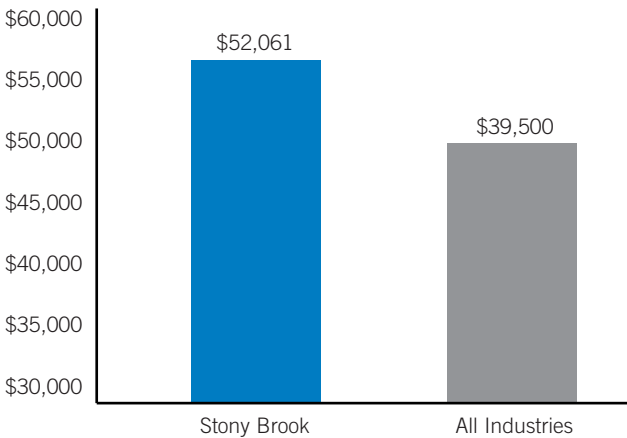
A 1,500 percent return on investment  
Source: 2002/2003 Stony Brook University Operating Budget

## PART II: ECONOMIC IMPACT ON THE REGION

Stony Brook University is a crucial and irreplaceable asset to the Long Island economy. The University, Long Island's largest single-site employer, provides nearly 13,500 men and women with full- or part-time jobs. As Long Island's only public research university, Stony Brook produces the educated workforce that drives the area's high-tech economy. It is also one of Long Island's highest-paying employers with an average annual salary of approximately \$52,061. This compares with a figure of \$39,500 for all Long Island employers.<sup>1</sup> Stony Brook's relatively high wage scale reflects the fact that its workforce consists of a high percentage of skilled scientists, academic professionals, medical practitioners, engineers, and technicians.

**Figure II-1**

### Annual Average Wages in Suffolk County Stony Brook vs. All Industries, 2002



Source: New York State Department of Labor



**Table II-1****Stony Brook Employees\***

<b>University Sector</b>	<b>Full Time</b>	<b>Part Time</b>	<b>Total</b>	<b>Full Time Equivalent</b>
Academic Campus (State)	3,493	1,996	5,489	4,404.40
Univ. Hosp./LIS Vets. Hosp.	3,952	1,028	4,980	4,423.65
Academic Campus (Research)	1,476	869	2,345	1911.04
Non-SBU Employees*	~300	~300	600	400

\*600 people work on the Stony Brook campus on University-related activities but are not SBU or Research Foundation employees (Faculty/Student Association, LI High Tech Incubator, Bookstore, Food Services, etc.)

Source: Office of Institutional Research

One can see what a large and important institution Stony Brook is in terms of the region's economy simply by looking at the raw dollar amounts contained in the University's budget.

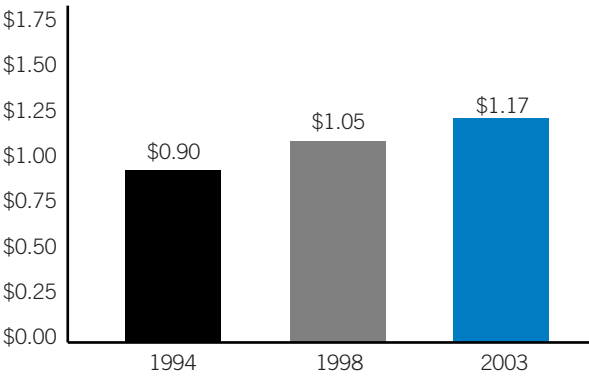
Stony Brook's total operating budget for 2002/2003 is \$1.17 billion, an increase of approximately \$270 million since the first study of Stony Brook's economic impact was conducted in 1994, and an increase of \$120 million, or roughly 10 percent, since the last economic impact study in 1998. Direct state tax support for the University of \$159.4 million today is just 13.8 percent of the total budget (not including an estimated \$64.4 million in fringe benefits).

These total revenue numbers include salaries and wages of \$662.1 million, supplies and expenses of \$438.3 million, equipment costs (objects or materials with a life of three years or more and costing more than \$500) of \$34 million, and \$39.4 million in utilities costs. The \$662.1 million in salaries and wages goes to pay for roughly 9,520 full-time and 4,480 part-time workers, including 1,319 full-time and 530 part-time faculty, the largest number of employees in any college or university in the Long Island region.

**Figure II-2**

**Total Operating Budget  
Years In Which Economic Impact Studies Were Conducted**

In Billions of Dollars

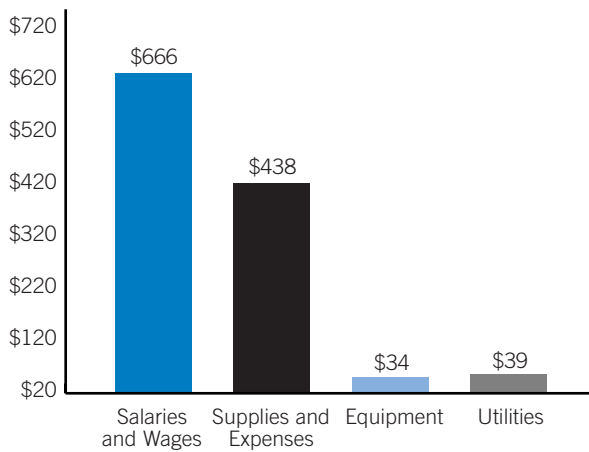


Source: 2002/2003 Stony Brook University Operating Budget

**Figure II-3**

**Total Budget By Object, 2002/2003  
Stony Brook University**

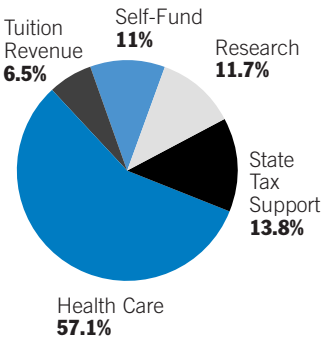
In Millions of Dollars



Source: 2002/2003 Stony Brook University Operating Budget

**Figure II-4**

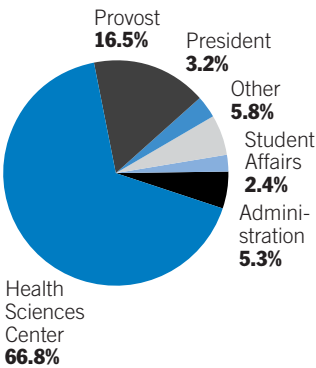
**Total Revenues by Source  
2002/2003  
Stony Brook University**



Source: 2002/2003 Stony Brook University Operating Budget

**Figure II-5**

**Budget Allocation By Division  
2002/2003  
Stony Brook University**



Source: 2002/2003 Stony Brook University Operating Budget

The multitudinous nature of Stony Brook's mission, which includes undergraduate and graduate education, research, economic development, medical care, and nursing home care, is revealed by looking at the programs and activities funded with these budget dollars and the sources to which revenues are allocated. In 2002/2003, state tax support provides roughly 13.8 percent of the University's budget, but if one adds the fringe benefit costs paid by the state, it is closer to 19 percent. Research brings an additional 12 percent; self-sustaining operations such as residence halls, food service, etc., add 11 percent; and health care provides 57.3 percent of the total budget.<sup>2</sup> On the expenditure side, the Health Sciences Center accounts for approximately 66.8 percent of the budget, while the Provost's Office (which includes the College of Arts and Sciences) accounts for 16.5 percent of the budget, the President's Office (which includes the Stony Brook Foundation) accounts for 3.2 percent of the budget, Student Affairs accounts for 2.4 percent, Administration accounts for 5.3 percent, and 5.8 percent goes toward Economic Development, Research, University-wide services, University Advancement, and other smaller items.

But, the raw budget numbers alone do not demonstrate to a sufficient degree just how integral Stony Brook is to the regional economy. Any organization that creates employment and income generates secondary effects in the area's economy in terms of additional employment and income. These effects are distinct from the impact of direct expenditures and are generally categorized as indirect economic impacts. The total economic impact of the organization is then obtained by adding together the direct and indirect effects.

**Table II-2****Revenue Summary by Object, 2002/2003  
Stony Brook University**

<b>Item</b>	<b>Total Allocation</b>	<b>Salaries and Wages</b>	<b>Supplies and Expenses</b>	<b>Equipment</b>	<b>Utilities</b>
State Purpose*	\$234,092,297	\$185,407,760	\$15,277,773	\$5,619,704	\$27,787,060
Capital-Research & Tech. Equip. & Rehab.*	2,416,802	0	0	2,416,802	0
Special Approp.*	995,934	563,458	426,176	6,300	0
Income Fund Reimb.*	52,438,900	22,477,418	22,509,232	7,452,250	0
State Univ. Tuition Reimb.*	7,313,300	5,813,592	1,324,708	175,000	0
Dormitory Income Fund*	20,372,600	9,929,182	7,168,118	8,000	3,267,300
Dormitory IFR*	2,049,900	35,600	2,014,300	0	0
Hospital Income Fund	493,764,000	231,300,000	251,839,611	2,895,989	7,728,400
Hospital IFR*	4,057,600	2,913,131	84,844	1,059,625	0
Veterans Home*	30,400,000	19,150,000	10,597,987	19,513	632,500
Stony Brook Foundation	30,084,475	6,800,369	18,964,398	4,319,708	0
Stabilization Fund*	332,600	0	332,600	0	0
Sponsored Research	106,001,120	62,120,825	36,495,816	7,384,479	0
RF Indirect Cost Support	30,800,000	9,529,921	20,941,862	328,217	0
RF Campus Royalties	3,235,009	394,321	1,722,237	1,118,451	0
RF Service & Facility	1,483,082	1,092,407	255,254	135,421	0
RF Other Agency	19,975	136,132	(116,157)	0	0
RF Service Agreements	7,537,642	6,839,982	682,496	15,164	0
Faculty Student Assoc.	15,861,714	9,647,659	6,214,055	0	0
Clinical Practice	130,424,697	87,953,098	41,584,524	887,075	0
<b>TOTAL</b>	<b>\$1,173,681,647</b>	<b>\$662,104,855</b>	<b>\$438,319,834</b>	<b>\$33,841,698</b>	<b>\$39,415,260</b>

\*Excludes fringe benefits

Source: 2002/2003 Stony Brook University Operating Budget

There are several issues that set Stony Brook apart from most other institutions of its size in either the public or private sectors, and which provide an indirect economic stimulus to the regional economy far beyond that which appears in the University's direct expenditures. These include the following: 1) Stony Brook's leading role in state-of-the-art economic development programs; 2) the economic impact of students and their families from outside of the region; 3) non-operating revenues paid by the state, which would be an expense for any other employer on Long Island; 4) spending on construction; 5) the income of Stony Brook retirees; and 6) the multiplier effect associated with research institutions, which roughly doubles Stony Brook's economic impact in terms of jobs and income.

### **A. Economic Development**

Stony Brook University is truly unique in the amount of resources it possesses and provides to local businesses in terms of both support and partnerships. Through a number of business development programs (including the Centers for Advanced Technologies, or "CATs," which include the Center for Biotechnology and the Center for Sensor Systems); the Long Island High Tech Incubator (LIHTI); the Strategic Partnership for Industrial Resurgence (SPIR); and the Small Business Development Center (SBDC), Stony Brook provides technical, financial, strategic, and marketing expertise to new and growing businesses. In the 2000/2001 development cycle alone, these programs added 1,484 new jobs, 1,424 new companies and/or clients, \$8.5 million in new investments, attracted \$18.1 million in federal and other external funds, and

resulted in more than \$245.9 million in additional corporate revenue. In fact, Stony Brook University's Long Island High Technology Incubator was ranked in 2002 as a top-performing technology incubator in a report produced by the National Business Incubation Association (NBIA) following a 12-month analysis of U.S. technology business incubation programs.

Table II-3 is recreated from the 2000/2001 annual research report.

**Table II-3**

<b>Impact of Stony Brook Economic Development Programs</b>							
<b>Indicator</b>	<b>CAT Sensor Systems</b>	<b>CAT Biotechnology*</b>	<b>LIHTI/SBSI</b>	<b>SBDC</b>	<b>SPIR</b>	<b>Total</b>	
Number of Companies/Clients	41	126	33	1,153	71	1,424	
Number of Projects	NA	31	NA	NA	176	207	
State Investment	\$970,000	\$970,000	NA	\$130,000	\$810,000	\$2.75M	
Company/Client Investment	NA	NA	NA	\$5.5M	\$3M	\$8.5M	
Corporate Revenue Impacts	\$2.1M	\$198M	\$35M	\$10.8M	NA	\$245.9M	
Federal/External Funds Obtained	\$3M	\$7M	\$2.1M	\$2.3M	\$3.7M	\$18.1M	
Jobs Created/Obtained	19	135	325	391	614	1,484	

\*Reflects preliminary data for 2001/2002

Source: Annual Report 2000-2001 Stony Brook Research

Stony Brook University has also taken the lead in establishing a partnership in the management of Brookhaven National Laboratory for the U.S. Department of Energy. Brookhaven is a premier multipurpose national laboratory with an annual budget in excess of \$450 million and by itself has an average annual impact on the regional economy of more than \$1 billion and 15,000 jobs.<sup>3</sup>

**Total Impact of Stony Brook  
Economic Development Programs:**

<b>Jobs</b>	<b>Revenue Impact</b>
<b>1,484</b>	<b>\$272.5 M</b>

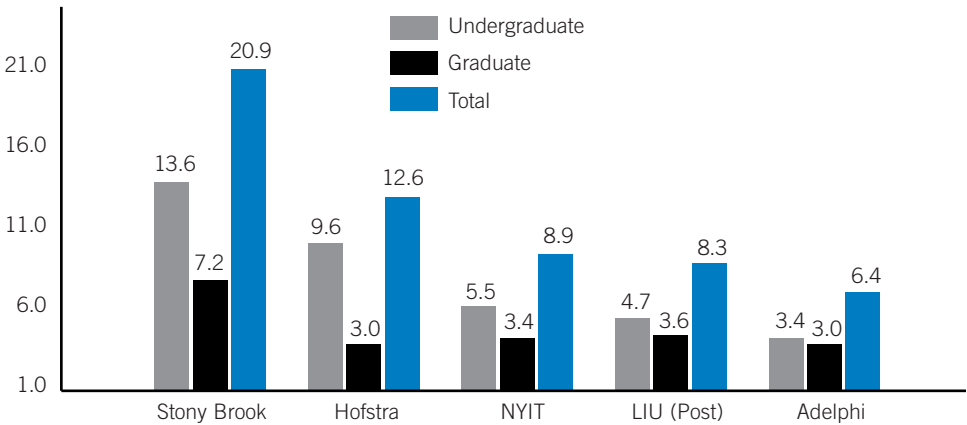
## B. Students and Families

At roughly 21,989 students (Fall 2002), Stony Brook University has the largest enrollment of any four-year college or university on Long Island.

**Figure II-6**

### Top Five Long Island Four-Year Institutions, 2001-2002 Enrollment Comparison

In Thousands of Students



Source: *Long Island Business News*

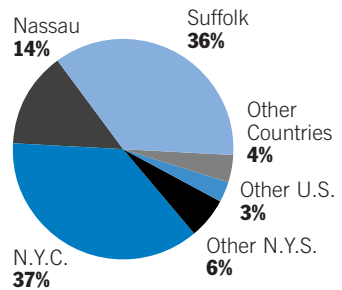
The economic impact of Stony Brook students on the regional economy is tremendous and includes the costs of tuition, housing, room, board, transportation, entertainment, and other expenditures. Stony Brook's ability to attract students from outside of the Long Island region has grown considerably since the University's founding, giving an even greater boost to the local economy. Students who are not from the region represent spending on higher education and general living costs that would not have existed on Long Island had Stony Brook not attracted them here. Stony Brook has made tremendous ground in attracting students from New York City, reversing the typical commuting patterns of city-bound suburbanites. In fall 1962, 73 percent of undergraduates came

from Nassau and Suffolk counties (45.8 percent Nassau, 27.2 percent Suffolk). Today, as shown in Table II-4, 49.8 percent of undergraduates come from Long Island (13.9 percent Nassau, 35.9 percent Suffolk.); 37.3 percent now come from New York City (in 1962 it was 17.5 percent); 5.9 percent come from somewhere else within the state (in 1962 it was 9 percent), 2.6 percent come from other states (in 1962 it was 0.3 percent), and 4.4 percent are international students (in 1962 it was 0.2 percent).

Much of the economic impact of student education and living is contained in the University budget, especially in the tuition, dormitory income, and Faculty Student Association funds, which total roughly \$111 million. But a large part of student expenses, especially for those students who live off campus, is not captured in the University budget.

**Figure II-7**

**Geographic Distribution of Undergraduates, Fall 2002  
Stony Brook University**



Source: President Shirley Strum Kenny's State of the University Address, 2002, and University Statistics

**Table II-4**

**Geographic Distribution of Students  
Fall 2002**

	<b>Undergrad No.</b>	<b>Undergrad %</b>	<b>Grad No.</b>	<b>Grad %</b>	<b>Total No.</b>	<b>Total %</b>
Suffolk County	5,101	36	4,272	55	9,373	43
Nassau County	1,981	14	753	10	2,734	12
New York City	5,303	37	712	9	6,015	27
Other N.Y.S.	842	6	269	3	1,111	5
Other U.S.	370	3	296	4	666	3
Other Countries	627	4	1,463	19	2,090	10
<b>TOTAL</b>	<b>14,224</b>	<b>100</b>	<b>7,765</b>	<b>100</b>	<b>21,989</b>	<b>100</b>

Sources: President Shirley Strum Kenny's 2002 State of the University Address and University Statistics

These expenses include off-campus meals and entertainment, clothing and other retail purchases, and family visitation expenses. Table II-5 estimates what these additional student costs are annually for the average student. The analysis assumes that the average full-time student will receive overnight visitors once annually, and that the average student will spend approximately \$1,500 annually



on outside meals, retail expenditures, entertainment, and services. The analysis assumes that part-time students will spend slightly less than half of full-time students on these items, at least in terms of their enrollment at Stony Brook. Estimated costs for transportation and books are given by the University in its publication *Financial and Residential Information*.

**Table II-5**

**Student Expenses Not Captured in University Budget  
Fall 2002**

<b>Estimated Expenses</b>	<b>F/T On-Campus</b>	<b>F/T Off-Campus</b>	<b>P/T*</b>	<b>Total</b>
Family Visitation**	\$300	\$300	\$50	\$650
Books	750	750	300	1,800
Transportation	500	2,080	250	2,830
Personal***	1,500	1,500	800	3,800
Total Indirect Expense	3,050	3,130	1,400	7,580
No. of Students	7,814	8,814	5,109	21,737
<b>TOTAL INDIRECT EXPENDITURES</b>	<b>\$23.8M</b>	<b>\$27.6M</b>	<b>\$7.2</b>	<b>\$58.6M</b>

\*Preliminary data

\*\*Includes overnight accommodations, meals, and entertainment

\*\*\*Includes meals off-campus, clothes and other retail items and services, entertainment, and non-University medical care

Source: Center for Regional Policy Studies

The analysis finds that full-time students living on campus will spend an additional \$23.8 million annually on these non-budgetary or “indirect” costs. Full-time students living off-campus will spend an estimated \$27.6 million and part-time students will spend \$7.2 million. The total economic impact of indirect student expenditures comes to an estimated \$58.6 million. Given the Long Island region’s average annual wage of approximately \$39,500, that means that indirect student spending generates an estimated 1,335 jobs.

**Total Impact of Off-Budget Indirect Student Spending:**

<b>Jobs</b>	<b>Revenue Impact</b>
<b>1,335*</b>	<b>\$58.6 M</b>

\*Jobs are calculated by dividing average Suffolk salary (\$39,500) into 90 percent of revenue impact, allowing for 10 percent business profit

### C. Non-Operating Revenue Paid by the State

Fringe benefits for employees cover things like medical insurance, Social Security, worker's compensation, unemployment insurance, and Medicare. Stony Brook's budget reflects fringe benefit payments for some University divisions but not others. The University's budget office estimates the value for 2002/2003 of the fringe benefits paid for by the state but not reflected in Stony Brook's budget to be approximately \$64.4 million.

#### Total Impact of Fringe Benefits Paid By State:

<b>Jobs</b>	<b>Revenue Impact</b>
<b>NA*</b>	<b>\$64.4 million</b>

\*Impact of health spending by Stony Brook employees is estimated in the multiplier model below

### D. Construction Spending

SUNY campuses spend money on construction through the SUNY Construction Fund. These funds are separate from the operating budget and are not reported there. Construction spending by Stony Brook comes to about \$46.2 million annually. This includes roughly \$36.2 million from the West Campus capital plan for 1998-2003 of \$181.4 million, \$5 million from the hospital bonded capital program for 1994-2002 valued at \$45 million, and an estimated \$5 million from Dormitory Authority for annual construction and renovation of campus residences. An estimated 80 percent of that money (\$37 million) for contractors, supplies, materials, etc., stays within the Long Island economy.

<b>Jobs</b>	<b>Revenue Impact</b>
<b>NA*</b>	<b>\$37 million</b>

\*Impact of construction spending by Stony Brook is estimated in the multiplier model below

## E. Retiree Income

The 1998 report *Something is Brewing on Long Island*, to which this report is a follow-up, estimated that Stony Brook University accounted for roughly 7 percent of the 157,300 people then employed by state and local government in Nassau and Suffolk counties. According to the New York State Labor Department, state and local employment on Long Island is at 182,400 (26,500 state employees and 155,900 local government employees). Stony Brook, with roughly 12,877 employees living on Long Island (96 percent of Stony Brook's 13,414 total employees)<sup>5</sup>; constitutes 7.1 percent of the state and local total. Following this, in attempting to estimate the amount of income received by Stony Brook retirees living on Long Island, it seems reasonable to assume that roughly 7 percent of retirees from the state pension system would be former Stony Brook employees, and that therefore roughly 7 percent of retiree income in the region would be generated by Stony Brook retirees. *Something is Brewing on Long Island* reasoned that while 32 percent of Stony Brook's workforce was made up of part-time workers who do not participate in the state retirement system to the same extent as do full-time workers, it was also true that University retirees have sources of income in addition to the state pension system that would offset any overestimation of Stony Brook retirees' take of total pension system payouts. Today, roughly 31.2 percent, or 4,193 of all Stony Brook employees, are part-time. It is still a reasonable assumption that the additional income from savings, IRAs, and other sources of retirement income would cancel out any overestimation of Stony Brook's share of state pension payouts due to an unusually high percentage of part-time workers employed by the University.

In 2002, there were approximately 40,528 state pension beneficiaries in Nassau and Suffolk counties, receiving \$722.4 million in state pension benefits (\$403.2 million in Suffolk with 22,986 state pensioners; \$319.2 million in Nassau with 17,542 state pensioners)<sup>5</sup>. Stony Brook's 7 percent share of these state pension totals would mean roughly 2,836 Stony Brook state pension beneficiaries and \$50.5 million in state pension benefits.

For 2000, Social Security payments for Long Island retirees and disabled workers and their families came to approximately \$424.4 million for 474,662 beneficiaries (\$199 million for 232,533 beneficiaries in Suffolk, \$225.3 million for 242,129 beneficiaries in Nassau)<sup>6</sup>. When these numbers are adjusted for inflation, this is an average of roughly \$933.47 per month, or \$11,202 annually, for Long Island Social Security beneficiaries. When this number is applied to the 2,836 Stony Brook retirees living on Long Island and their families, this comes to approximately \$31.8 million in Social Security benefits brought to Long Island by former employees of Stony Brook. The combined total of pension benefits and Social Security benefits accruing to Long Island from former Stony Brook employees comes to \$82.3 million. This represents an increase of \$19.5 million, or 31 percent, since 1998 and \$38.2 million, or 86.6 percent, since 1994.

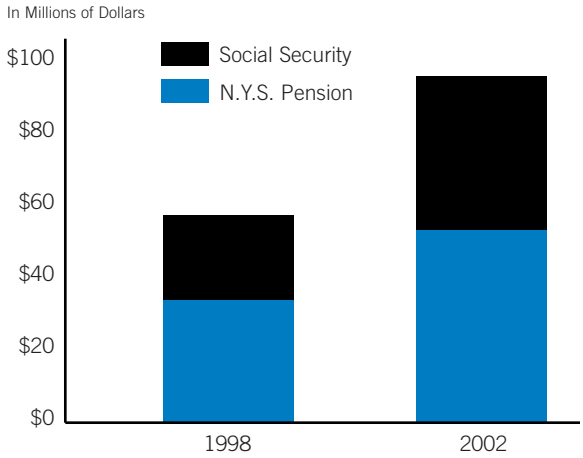
**Total Estimated Income of Stony Brook Retirees Living on Long Island:**

<b>Jobs</b>	<b>Revenue Impact</b>
<b>1,812*</b>	<b>\$82.3 million</b>

\*Jobs are calculated by dividing average Suffolk salary (\$39,500) into 87 percent of revenue impact, allowing for 3 percent personal savings and 10 percent business profit

**Figure II-8**

**Estimated Total State Pension  
and Social Security Benefits  
Paid to Stony Brook Retirees on Long Island**



Sources: U.S. State Controller's Office and Social Security Administration

**F. The Multiplier Effect Associated With  
Research Institutions**

The multiplier effect is a basic economic concept that refers to changes in the level of activity that brings further changes in the level of other activities throughout the economy. When an injection of expenditure into a regional economy leads to an increase in regional income over and above the original injection, this is the multiplier effect. In other words, the multiplier effect is the effect from continuous respending of incomes. The multiplier indicates how many times the injection of original spending circulates through a local economy, after accounting for savings and spending of income outside of the region.<sup>7</sup>

The multiplier effect can best be measured by means of an input-output model of the Long Island economy. The model used for this analysis is called the Regional Input-Output Modeling System (RIMS II) and was developed by the

Bureau of Economic Analysis of the United States Department of Commerce. It describes inter-industry linkages on Long Island. For each major industry, it shows the industries from which inputs are purchased and to which outputs are sold. Thus, the model traces the multiplier process through successive rounds of respending.

The model contains multipliers for output, earnings, and employment. Total output is defined as the value of all goods and services produced on Long Island. The output multipliers demonstrate how each dollar of direct spending by Stony Brook affects total output within the Long Island economy. The earnings multipliers show how each dollar of direct Stony Brook spending is translated into increased earnings on Long Island. The employment multipliers show how many secondary jobs are created throughout the Long Island economy by Stony Brook spending.<sup>8</sup>

For this analysis, the Stony Brook budget for 2002/2003 was disaggregated into four spending streams: operating expenditures less employee medical expenditures, employee medical expenditures, construction spending, and spending for supplies and equipment. Employee medical expenditures were estimated to be approximately 5 percent of wages and salaries. Data on annual expenditures for construction were supplied by the Office of the Vice President for Administration and the Dormitory Authority. Construction expenditures, with few exceptions, do not appear in the operating budget of the University. Multipliers for research institutions were applied to operating expenditures less employee benefits. Multipliers for health services were applied to employee medical expenditures. Multipliers for construction were applied to construction spending. Multipliers for retail trade were applied to equipment spending.

## **Part III: The Secondary Impact of Stony Brook Spending 2002/2003**

### **A. Operating Expenditures Minus Employee Medical Expenditures**

Total operating expenditures, consisting of wages and salaries plus utilities costs minus employee medical expenditures and double counting in the budget,<sup>9</sup> totals \$630.3 million. This figure was applied to the output, earnings, and employment multipliers for research and development institutions shown in Appendix A to derive the impacts shown in Table III-6. The key findings are as follows: the initial expenditure of \$630.3 million generated total Long Island output of more than \$1.2 billion. This includes the original direct expenditure of \$630.3 million. The model shows that the original expenditure caused Long Island earnings to increase by \$504 million. When this earnings figure is reduced by 10 percent to reflect business profits and divided by average annual wages in each industry for Suffolk County, the model shows that 13,551 secondary jobs were generated.

**Table III-1****Impact of Direct Spending of \$630.3 Million on Long Island Output, Earnings, and Employment (Stony Brook University Operating Expenditures Minus Employee Health Expenditures and Double Counting in the Budget, 2002/2003)**

<b>Industry</b>	<b>Output</b>	<b>Earnings</b>	<b>Average Salaries/Wages</b>	<b>Employment</b>
Agriculture and Mining	\$1,953,976	\$882,441	\$20,262	39
Construction	14,119,053	6,492,243	41,127	142
Manufacturing	74,061,997	20,233,107	45,753	398
Food	10,211,101	2,206,102		
Printing and Publishing	19,098,541	6,177,086		
Chemicals	6,177,086	945,472		
Electronic Equipment	6,807,401	2,458,228		
Instruments	5,357,676	1,701,850		
All Other	26,473,225	6,744,369		
Trans., Communications, Utilities	67,506,723	20,359,170	40,251	455
Wholesale Trade	32,524,247	12,732,360	47,079	243
Retail Trade	56,476,213	28,049,012	22,765	1,109
Finance, Insurance, Real Estate	129,529,706	17,396,690	64,149	244
Services	794,890,085	397,854,747	32,789	15,265
Hotels, Amusements	8,950,471	2,584,291	18,758	124
Personal Services	9,832,912	4,475,236	23,641	170
Business Services	686,980,179	350,265,975	23,641	13,335
Eating and Drinking Places	31,263,618	9,769,881	13,599	647
Health Services	28,490,232	16,640,313	37,604	398
Miscellaneous Services	29,372,673	12,228,109	23,641	466
Households		1,890,945	13,599	125
<b>TOTAL</b>	<b>\$1,171,062,001</b>	<b>\$503,999,772</b>		<b>17,895</b>

Source: Center for Regional Policy Studies

**B. Employee Medical Benefits**

Employee medical expenditures were estimated at \$33.1 million (5 percent of employee wages and salaries). This figure was applied to the multipliers for health services shown in Appendix B. The findings appear in Table III-2. Original spending of this magnitude by Stony Brook employees generates total Long Island output of \$66.2 million including original spending. Long Island earnings would increase by approximately \$30.2 million and create 811 jobs, primarily in health services.

**C. Construction Expenditures**

Construction expenditures for 2002/2003 are estimated to be almost \$46.2 million. This includes roughly \$36.2 million from the West Campus capital plan for 1998-2003 of \$181.4 million, \$5 million



**Table III-2****Impact of Direct Spending of \$33.1 Million on Long Island Output, Earnings, and Employment (Stony Brook Employee Medical Expenditures, 2002/2003)**

Industry	Employee Medical Expenditures			
	Increase in Output	Increase in Earnings	Average Annual Salaries/Wages	Increase in Employment
Agriculture and Mining	\$135,731	\$62,900	\$20,262	3
Construction	1,082,541	499,889	41,127	11
Manufacturing	5,210,765	1,304,347	45,753	26
Food	675,347	145,663		
Printing and Publishing	771,352	248,289		
Chemicals	1,135,510	172,147		
Electronic Equipment	331,052	122,489		
Instruments	645,552	205,253		
All Other	1,651,952	410,505		
Trans., Communications, Utilities	3,436,324	950,120	40,251	21
Wholesale Trade	2,131,978	834,252	47,079	16
Retail Trade	3,360,182	1,668,504	22,765	66
Finance, Insurance, Real Estate	8,352,453	1,072,610	64,149	15
Services	42,589,895	23,825,843	32,789	654
Hotels, Amusements	413,816	119,179	18,758	6
Personal Services	655,484	301,258	23,641	11
Business Services	2,608,693	1,330,831	23,641	51
Eating and Drinking Places	1,708,231	532,994	13,599	35
Health Services	35,627,862	20,773,540	37,604	497
Miscellaneous Services	1,575,810	655,484	23,641	25
Households	0	112,558	13,599	7
<b>TOTAL</b>	<b>\$66,299,870</b>	<b>\$30,218,465.6</b>		<b>811.6</b>

Source: Center for Regional Policy Studies

from the hospital bonded capital program for 1994-2002 valued at \$45 million, and an estimated \$5 million from Dormitory Authority for annual construction and renovation of campus residences, which does not appear in the operating budget. It is estimated that 80 percent, or almost \$37 million, of these expenditures remained with the Long Island economy. This amount was applied to the construction multipliers shown in Appendix C. The results appear in Table III-3. The findings show that \$37 million in original spending would cause total Long Island output to expand by \$72 million including the original expenditure. Earnings would rise by more than \$24.9 million and 591 secondary jobs would be created. The greatest impact would occur within the construction industry itself.

**Table III-3****Impact of Direct Spending of \$37 Million on Long Island Output, Earnings, and Employment (Stony Brook Construction Expenditures, 2002/2003)**

<b>Industry</b>	<b>Output</b>	<b>Earnings</b>	<b>Average Salaries/Wages</b>	<b>Employment</b>
Agriculture and Mining	\$192,303	\$77,661	\$20,262	3
Construction	37,635,841	13,054,389	41,127	286
Manufacturing	8,901,392	2,407,481	45,753	47
Food	491,851	103,548		
Printing and Publishing	569,512	184,906		
Chemicals	595,398	92,453		
Electronic Equipment	1,124,231	417,888		
Instruments	181,208	591,700		
All Other	593,919	1,549,515		
Trans., Communications, Utilities	3,161,899	1,002,192	40,251	22
Wholesale Trade	3,428,164	1,342,420	47,079	26
Retail Trade	4,245,450	2,107,933	22,765	83
Finance, Insurance, Real Estate	5,976,174	917,136	64,149	13
Services	8,457,617	4,012,468	32,789	110
Hotels, Amusements	358,718	103,548	18,758	5
Personal Services	469,662	214,491	23,641	8
Business Services	3,487,334	1,778,799	23,641	68
Eating and Drinking Places	1,301,741	406,794	13,599	27
Health Services	1,408,986	820,984	37,604	20
Miscellaneous Services	1,431,175	595,398	23,641	23
Households	0	0	13,599	0
<b>TOTAL</b>	<b>\$71,998,840</b>	<b>\$24,921,680</b>		<b>590</b>

Source: Center for Regional Policy Studies

**D. Equipment and Supplies Expenditures**

Spending on equipment and supplies in the Stony Brook 2002/2003 budget comes to \$472.2 million. It is estimated that 80 percent of these expenditures remained within the Long Island economy. This is equivalent to a figure of \$377.7 million. This figure was applied to the multipliers for retail trade shown in Appendix D. The results appear in Table III-4. The original expenditure of \$377.7 million would cause Long Island output to increase by \$701.3 million including the original expenditure. Long Island earnings would increase by \$291.8 million and almost 10,100 secondary jobs would be created. The greatest impact would occur in retail trade.

**Table III-4****Impact of Direct Spending of \$377.7 Million on Long Island Output, Earnings, and Employment (Stony Brook University Equipment and Supplies Expenditures, 2002/2003)**

Industry	Equipment and Supplies			
	Increase in Output	Increase in Earnings	Average Annual Salary/Wage	Increase in Employment
Agriculture and Mining	\$1,208,734	\$528,821	\$20,262	23
Construction	10,614,191	4,872,707	41,127	107
Manufacturing	43,212,223	11,634,060	45,753	229
Food	5,741,484	1,246,506		
Printing and Publishing	14,693,667	4,759,388		
Chemicals	3,475,109	528,821		
Electronic Equipment	2,153,057	793,231		
Instruments	1,548,690	491,048		
All Other	15,600,217	3,815,065		
Trans., Communications, Utilities	40,114,844	10,916,375	40,251	244
Wholesale Trade	18,017,684	\$7,063,537	47,079	135
Retail Trade	410,629,441	203,973,782	22,765	8,064
Finance, Insurance, Real Estate	89,597,372	11,634,060	64,149	163
Services	87,935,364	41,172,486	32,789	1,130
Hotels, Amusements	4,343,886	1,246,506	18,758	60
Personal Services	6,081,441	2,795,196	23,641	106
Business Services	28,140,827	14,353,711	23,641	546
Eating and Drinking Places	15,637,990	4,872,707	13,599	322
Health Services	16,506,767	9,632,095	37,604	231
Miscellaneous Services	17,224,453	7,176,855	23,641	273
Households	0	1,095,415	13,599	72
<b>TOTAL</b>	<b>\$701,329,853</b>	<b>\$291,795,827</b>		<b>10,095.3</b>

Source: Center for Regional Policy Studies

**E. Total Secondary Impact of Stony Brook Budget**

Table III-5 on the following page aggregates figures for the analysis above.

**Table III-5****Impact of Direct Spending of \$1.08 Billion on Long Island Output, Earnings, and Employment (Stony Brook University, 2002/2003)**

<b>Expenditures Category</b>	<b>Increase in Output</b>	<b>Increase in Earnings</b>	<b>Increase in Employment</b>
Operating Expenditures (Less Employee Medical)	\$1,171,062,001	\$503,999,772	17,895
Employee Medical Expenditures	66,299,870	30,218,465.6	811
Construction Expenditures	71,998,838	24,921,679	591
Equipment Expenditures	701,329,853	291,795,827	10,095
<b>TOTAL</b>	<b>\$2,010,690,562</b>	<b>\$850,935,744</b>	<b>29,392</b>

Source: Center for Regional Policy Studies

The table shows that direct spending by Stony Brook of \$1.08 billion on Long Island causes total Long Island output to increase by more than \$2 billion, including the original expenditure. Direct spending of this magnitude causes Long Island earnings to increase by \$851 million and generates upwards of 29,000 secondary jobs on Long Island.

**Total Multiplier, or Secondary, Impact of Stony Brook Spending on Long Island:**

<b>Jobs</b>	<b>Income</b>
<b>29,392</b>	<b>\$850.9 million</b>

**F. Adding it All Up**

Table III-6 on the next page indicates that when all economic impacts of Stony Brook University are considered, including its operating budget, economic development programs, state-paid off-budget fringe benefits, off-budget student and family expenditures, off-budget retiree income, off-budget construction expenditures, and all associated economic multipliers, the impact on the Long Island economy includes \$2.5 billion in revenue and 47,438 jobs. Stony Brook University, therefore, counts for almost 5 percent of the entire economy of Suffolk County, and roughly 6.7 percent of its labor force.

**Table III-6****Total Economic Impact on Long Island of Stony Brook University  
2002/2003**

<b>Economic Revenue Source</b>	<b>Total Revenue</b>	<b>Total # of Jobs</b>
Stony Brook Operating Budget	\$1,173.7 M	13,414
Stony Brook Economic Development	272.5 M	1,484
Students/Families–Off Budget	58.6 M	1,335
State-Paid Fringe Benefits–Off Budget	64.4 M	NA
Stony Brook Retiree Income	82.3 M	1,812
Multiplier Effect–Operating Budget	504 M	17,895
Multiplier Effect–Employee Medical Expenditures	30.2 M	812
Multiplier Effect–Construction	61.9 M*	591
Multiplier Effect–Equipment and Supplies	291.8 M	10,095
<b>TOTAL</b>	<b>\$2,539.4 M</b>	<b>47,438</b>

\*This includes original construction expenditures not included in the operating budget of \$37 million plus multiplier revenues of \$24.9 million  
Source: Center for Regional Policy Studies

## PART IV: FOOTNOTES AND APPENDICES

### A. Footnotes

- <sup>1</sup> Figure for Stony Brook is average of state employees from academic campus and University Hospital and Long Island State Veteran's Home. All other industry figures derived from *Reporting Units and Wages Suffolk County* (New York State Department of Labor, 2000). Figure for all industries 2000 (\$37,865) adjusted for inflation.
- <sup>2</sup> *President's 2002 State of the University Address*, page 9.
- <sup>3</sup> *The Impact of Brookhaven National Laboratory on the Long Island Economy*, Suffolk County Planning Commission (June 1995).
- <sup>4</sup> Stony Brook University, Institutional Research.
- <sup>5</sup> *New York State and Local Retirement Systems 2002 Annual Report* (Office of the State Comptroller, Albany, New York), page 21.
- <sup>6</sup> This includes retirees, families, survivor benefits, disabled worker benefits, age 65 and older benefits. *OASDI Beneficiaries by State and County 2000* (Social Security Administration, Washington D.C.).
- <sup>7</sup> Choi, Vivian C. "On the Multiplier Effect" in Witt, Stephen F. and Moutinho, Luiz, *Tourism Marketing and Management Handbook* (New York, Prentice Hall International U.K. Ltd., 1989), page 531.
- <sup>8</sup> This model was used by the Suffolk County Planning Commission in its report *The Impact of Brookhaven National Laboratory on the Long Island Economy* (Hauppauge, New York, June 1995).
- <sup>9</sup> The University budget office estimates that there is an estimated \$38.1 million in "double counting" in the Stony Brook operating budget, mostly due to the nature of service-providing funds.

## B. Appendices

### Appendix A

#### Output, Earnings, and Employment Multipliers for Research and Development Laboratories Operating Expenditures

Industry	Output Mult.*	Earnings Mult.*	Employment Mult.**
Agriculture and Mining	0.0031	0.0014	0.1000
Construction	0.0224	0.0103	0.4000
Manufacturing	0.1175	0.0321	1.0000
Food	0.0162	0.0035	0.1000
Printing and Publishing	0.0303	0.0098	0.3000
Chemicals	0.0098	0.0015	0.0000
Electronic Equipment	0.0108	0.0039	0.1000
Instruments	0.0085	0.0027	0.1000
All Other	0.0420	0.0107	0.4000
Transportation, Communications, Utilities	0.1071	0.0323	1.1000
Wholesale Trade	0.0516	0.0202	0.6000
Retail Trade	0.0896	0.0445	2.9000
Finance, Insurance, Real Estate	0.2055	0.0276	0.9000
Services	1.2611	0.6312	24.2000
Hotels, Amusements	0.0142	0.0041	0.2000
Personal Services	0.0156	0.0071	0.7000
Business Services	1.0899	0.5557	19.6000
Eating and Drinking Places	0.0496	0.0155	1.4000
Health Services	0.0452	0.0264	1.0000
Miscellaneous Services	0.0466	0.0194	0.9000
Households		0.0030	0.4000
<b>TOTAL</b>	<b>1.8579</b>	<b>0.7996</b>	<b>31.2000</b>

\*Shows the impact of each dollar of spending by Stony Brook

\*\*Shows the impact of each \$1 million in spending by Stony Brook; the employment multiplier associated with this model was not used  
A more conservative estimate was made by taking 10 percent off earnings for profit-taking and dividing up-to-date average annual wages for each industry into the earnings number

Source: Center for Regional Policy Studies

## Appendix B

### Output, Earnings, and Employment Multipliers for Health Services Expenditures

Industry	Output Mult.*	Earnings Mult.*	Employment Mult.**
Agriculture and Mining	0.0041	0.0019	0.2000
Construction	0.0327	0.0151	0.5000
Manufacturing	0.1574	0.0394	1.2000
Food	0.0204	0.0044	0.1000
Printing and Publishing	0.0233	0.0075	0.2000
Chemicals	0.0343	0.0052	0.1000
Electronic Equipment	0.0100	0.0037	0.1000
Instruments	0.0195	0.0062	0.2000
All Other	0.0499	0.0124	0.5000
Transportation, Communications, Utilities	0.1038	0.0287	0.9000
Wholesale Trade	0.0644	0.0252	0.8000
Retail Trade	0.1015	0.0504	3.3000
Finance, Insurance, Real Estate	0.2523	0.0324	1.1000
Services	1.2865	0.7197	29.4000
Hotels, Amusements	0.0125	0.0036	0.2000
Personal Services	0.0198	0.0091	0.9000
Business Services	0.0788	0.0402	1.4000
Eating and Drinking Places	0.0516	0.0161	1.5000
Health Services	1.0762	0.6275	24.0000
Miscellaneous Services	0.0476	0.0198	0.9000
Households	0.0000	0.0034	0.5000
<b>TOTAL</b>	<b>2.0027</b>	<b>0.9128</b>	<b>37.4000</b>

\*Shows the impact of each dollar of spending by Stony Brook

\*\*Shows the impact of each \$1 million in spending by Stony Brook; the employment multiplier associated with this model was not used  
A more conservative estimate was made by taking 10 percent off earnings for profit-taking and dividing up-to-date average annual wages for each industry into the earnings number

Source: Center for Regional Policy Studies



## Appendix C

### Output, Earnings, and Employment Multipliers for Construction Expenditures

Industry	Output Mult.*	Earnings Mult.*	Employment Mult.**
Agriculture and Mining	0.0052	0.0021	0.2000
Construction	1.0177	0.3530	12.1000
Manufacturing	0.2407	0.0651	2.4000
Food	0.0133	0.0028	0.0100
Printing and Publishing	0.0154	0.0050	0.2000
Chemicals	0.0161	0.0025	0.1000
Electronic Equipment	0.0304	0.0113	0.4000
Instruments	0.0049	0.0160	0.0000
All Other	0.0161	0.0419	1.6000
Transportation, Communications, Utilities	0.0855	0.0271	0.9000
Wholesale Trade	0.0927	0.0363	1.1000
Retail Trade	0.1148	0.0570	3.8000
Finance, Insurance, Real Estate	0.1616	0.0248	0.8000
Services	0.2287	0.1085	5.3000
Hotels, Amusements	0.0097	0.0028	0.2000
Personal Services	0.0127	0.0058	0.6000
Business Services	0.0943	0.0481	1.7000
Eating and Drinking Places	0.0352	0.0110	1.0000
Health Services	0.0381	0.0222	0.8000
Miscellaneous Services	0.0387	0.0161	0.7000
Households	0.0000	0.0000	0.3000
<b>TOTAL</b>	<b>1.9469</b>	<b>0.6739</b>	<b>26.6000</b>

\*Shows the impact of each dollar of spending by Stony Brook

\*\*Shows the impact of each \$1 million in spending by Stony Brook; the employment multiplier associated with this model was not used  
A more conservative estimate was made by taking 10 percent off earnings for profit-taking and dividing up-to-date average annual wages for each industry into the earnings number

Source: Center for Regional Policy Studies

## Appendix D

### Output, Earnings, and Employment Multipliers for Retail Trade Expenditures

Industry	Output Mult.*	Earnings Mult*	Employment Mult.**
Agriculture and Mining	0.0032	0.0014	0.1000
Construction	0.0281	0.0129	0.4000
Manufacturing	0.1144	0.0308	0.9000
Food	0.0152	0.0033	0.1000
Printing and Publishing	0.0389	0.0126	0.4000
Chemicals	0.0092	0.0014	0.0000
Electronic Equipment	0.0057	0.0021	0.1000
Instruments	0.0041	0.0013	0.0000
All Other	0.0413	0.0101	0.3000
Transportation, Communications, Utilities	0.1062	0.0289	0.9000
Wholesale Trade	0.0477	0.0187	0.6000
Retail Trade	1.0871	0.5400	35.7000
Finance, Insurance, Real Estate	0.2372	0.0308	1.1000
Services	0.2328	0.1090	5.7000
Hotels, Amusements	0.0115	0.0033	0.2000
Personal Services	0.0161	0.0074	0.7000
Business Services	0.0745	0.0380	1.3000
Eating and Drinking Places	0.0414	0.0129	1.2000
Health Services	0.0437	0.0255	1.0000
Miscellaneous Services	0.0456	0.0190	0.9000
Households	0.0000	0.0029	0.4000
<b>TOTAL</b>	<b>1.8567</b>	<b>0.7725</b>	<b>45.4000</b>

\*Shows the impact of each dollar of spending by Stony Brook

\*\*Shows the impact of each \$1 million in spending by Stony Brook; the employment multiplier associated with this model was not used  
A more conservative estimate was made by taking 10 percent off earnings for profit-taking and dividing up-to-date average annual wages for each industry into the earnings number

Source: Center for Regional Policy Studies

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