

Something Is Brewing on Long Island



Stony Brook is infusing the region's economy with the people, know-how, and technology to thrive. Based on a \$120 million tax-levy appropriation in 1997-98, University activity generated a total campus budget of \$800 million. *(continued inside)*

(continued from cover) And beyond the campus, its laboratories, centers, and business incubators created 2,900 new jobs in New York and more than \$180 million in business. In all, that \$120 million had a regional economic impact of \$2.5 billion—an investment that pays off more than twenty to one. It may be the highest return on investment New York State has made anywhere.



The Economic Impact
of
The University at Stony Brook

Center for Regional Policy Studies
The University at Stony Brook
Lee Koppelman, Executive Director

Participating Staff:
Dr. Fred Rosenberg
Edith Jones
Ruth Klein

The impact of the University at Stony Brook on local, regional, and national economies manifests itself in many ways. The University is Long Island's largest single-site employer, and as such provides nearly 12,000 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 burgeoning high-tech economy.

What sets Stony Brook apart from most other institutions of its kind is the University's commitment to supporting and partnering with local businesses. Through a number of business development programs, Stony Brook provides technical, financial, strategic, and marketing expertise to new and growing businesses. These programs have added 2,900 new jobs and more than \$180 million in business volume.

The University Hospital and Medical Center at Stony Brook is Long Island's number one health care provider with a 504-bed hospital, 350-bed nursing home, and a dental care center. The Hospital has been ranked as one of the 100 best hospitals and one of the 15 best major teaching hospitals in the United States.

The report that follows will demonstrate the enormous contribution that the University at Stony Brook makes to the local, regional, and state economies; and how every dollar invested in it brings a substantial financial return, as well as paying intellectual, social, cultural, and quality-of-life dividends well into the future.

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PART I: SUMMARY AND FINDINGS

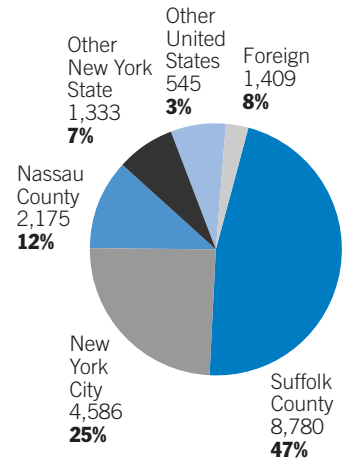
In 1994 a study was conducted of the economic impact of the University at Stony Brook on Long Island, based on data of the University revenues and economic development programs for the academic year July 1, 1993 to June 30, 1994. Study findings showed that the University generated revenues close to \$900,000,000. The number of degree-seeking students was 17,600, and there were approximately 12,000 full- and part-time employees. The economic development programs—most in incipient stages—were responsible for creating over 2,100 new jobs and saving over 300. At that time there was serious concern over proposals to cut State support for the University. The study demonstrated that reductions in such support would have caused much larger reductions in the total budget of the University. The impacts of such reductions would have been felt seriously throughout the Long Island economy, by the students and their families on Long Island, and by the thousands of students from New York City enrolled at Stony Brook. The ability of Long Island to pay the level of State taxes that have long provided major support to upstate government costs and higher education would also have been affected. Fortunately, the level of State support for the University was not reduced.

This study is a follow-up to the 1993-1994 analysis, based mainly on University revenue data for the 1997-1998 academic year. Major issues raised in the earlier report still remain, albeit in somewhat altered form, and some new ones have emerged.

University-generated revenues are now close to \$1,050,000,000, an increase of \$150,000,000 since 1993-1994 (see Figure I-2). The number of degree-seeking students has increased to 18,600, a gain of about 1,000 (see Figure I-1). There have been increases in summer attendance of about 1,000 and in the numbers taking noncredit-bearing courses in the School of Professional Development. Even though enrollments and revenues have increased substantially, the number of full- and part-time employees has remained essentially unchanged since 1993-1994 (see Figure I-3). The cost of education to students rose from

Figure I-1

Student Enrollment by Geographic Origin at University at Stony Brook, Fall 1998



Total: 18,628

Source: University at Stony Brook, Institutional Research

Figure I-2**Revenue for University at Stony Brook,
1997-1998 Academic Year (\$000,000)**

Element	State Components			
	Total Revenue	Aid or Grants to University	Patient Care	Total State
University Operating Budget Revenue				
General Campus Revenue				
State Purpose Funds	\$ 123.3	\$ 123.3		\$ 123.3
Student Tuition	62.8	18.3		18.3
Special Appropriations	2.6	2.6		2.6
State University Tuition Reimbursable	1.7			
Faculty Student Association	27.9			
Income Fund Reimbursable Accounts	16.0			
Research Foundation	111.8	3.3		3.3
Stony Brook Foundation	14.5			
Health Sciences Campus				
University Hospital	325.8	2.3	\$ 8.6	10.9
Clinical Practice Management Plan	85.6		.9	.9
Medical School Income Fund Reimbursable Accounts	4.1			
Dental School and Clinic	3.9		.2	.2
Dental School Clinical Practice Management Plan	.8			
Long Island State Veterans Home	27.2	.9	4.8	5.7
Other Operating Budget Revenue				
Dormitory Income	23.7			
Staller Center	.7			
Sports Complex	.4			
School of Professional Development	5.3			
Summer Sessions	5.5			
University Non-Operating Budget Revenue				
Capital Construction	27.1	21.1		21.1
Fringe Benefits not Reported Elsewhere	50.4	50.4		50.4
ALL CAMPUS REVENUE TOTAL	\$ 922.5	\$ 222.1	\$ 14.6	\$ 236.7
Non-Campus Revenue				
Added Student/Family Expenses	\$ 63.1			
Stony Brook Retiree Income	62.8	36.4		36.4
NON-CAMPUS REVENUE TOTAL	\$ 125.9	\$ 36.4		\$ 36.4
UNIVERSITY GENERATED REVENUE TOTAL	\$ 1,048.4	\$ 258.5	\$ 14.6	\$ 273.1

Source: University at Stony Brook, Center for Regional Policy Studies

\$175,000,000 in 1993-1994, to over \$200,000,000 in 1997-1998, a 14% increase. About \$137,000,000 of this cost was embodied in the revenues reported in the University budget. This left students with the necessity for funding and/or earning \$63,000,000 more to pay for their education at Stony Brook. For a full-time Long Island undergraduate living at home and commuting to campus, expenses rose from \$6,787 in 1993-1994 to \$7,961 in 1997-1998, a 17% increase. For a full-time undergraduate New York resident living in a University dormitory, expenses rose from \$10,387 in 1993-1994 to \$12,611, a 21% increase.

Since the data from The Center For Biotechnology and the Incubator dealt only with gains in jobs on Long Island from the time of their program beginnings, it can only be said that, with other totals added, there were at least 3,200 New York State jobs in 1997-1998 brought about by economic development programs at the University. The words “at least” are used, because there are undoubtedly many more brought into being with the aid of the Small Business Development Center at the University. Since this program started in 1988, there have been almost 2,500 jobs created or saved with its assistance. The problem is that there is no adequate record of how many of the small business firms aided still exist, or of whether they have expanded or contracted.

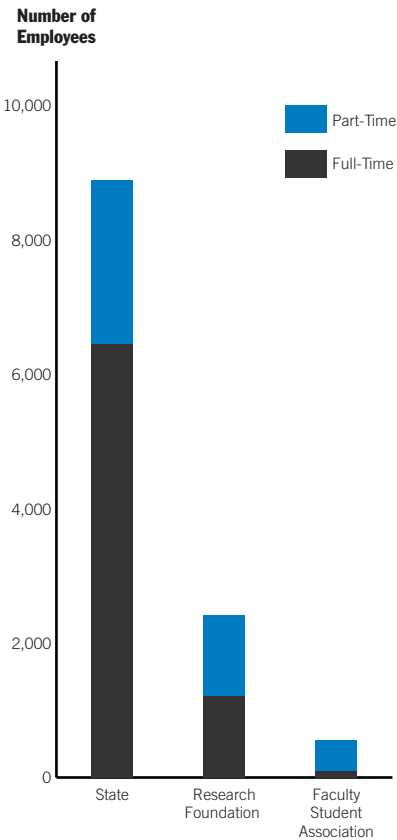
As Figure I-4 shows, the cost to the University, in terms of the operational expenditures for the development centers, was \$2,220,000 in 1997-1998. Fundamentally, this is State money given to the University to use for development. For this amount, the following results were achieved:

- Private investment of \$22,200,000, a 10:1 ratio
- Total investment of \$35,400,000, a 17:1 ratio
- Added business volume of \$183,500,000, an 80:1 ratio
- More than 2,000 added jobs at a cost of roughly \$1,000 per job

Numbers alone are not sufficient to indicate the nature of the tasks undertaken in this development effort. The work of staff at the program

Figure I-3

Number of Full- and Part-Time Employees by Payroll Source University at Stony Brook, Fall 1997



Total Number of Employees: 11,848

Sources: University at Stony Brook, Institutional Research, and Faculty Student Association

centers is supplemented by the efforts of faculty in Engineering and Applied Sciences, in Computer Science, in Applied Mathematics, in the Schools of Medicine and Dental Medicine, and the efforts of Office of the Vice President for Research staff, among others. The efforts of the newly added Technology Learning Center and the School of Professional Development must be acknowledged. In many ways this is a University-wide initiative involving many efforts and concerns for the future of Long Island and New York State. The results achieved—with a relatively small State investment—point to the value of these efforts. However, much remains to be done. While the expansion of finance-related jobs has helped to offset the loss of defense-aerospace jobs, the future of the region's economy is not secure. As the scientific and technological requirements for economic advancement become more complex, the roles of universities become more important. Within the limits of the funds already supplied by the State for such programs, the returns have been many. If more returns are desired, more support must be given, not only to the development program agencies, but also to the faculty and staff efforts feeding into them.

As these changes have occurred, there have been major changes in the operations of the University. The programs of the Staller Center have grown and there is increased attendance at its events, drawing from both the University and the Long Island community. The opening of the new gymnasium and enlargement of the Sports Complex have resulted in many new athletic and other public events being held there. The University Hospital, working with the faculty and students of the School of Medicine has enlarged its client base by opening satellite clinics and creating educational and support group programs that reach thousands in Suffolk and Nassau communities. Much of this has been done in collaboration with the schools of Dental Medicine, Nursing, Social Welfare, and Health Technology and Management. The Hospital has reorganized its functional structure to become more efficient, and, while doing so, has established, developed, and improved its

Figure I-4

**Impact of Economic Development Programs
at University at Stony Brook
July 1, 1997 to June 30, 1998**

	Economic Development Programs					Total
	Center for Biotechnology	Center for Agile Sources of Parts	Long Island High Technology Incubator	Small Business Development Center	Strategic Partnership for Industrial Resurgence	
Inception Year	1982	1996	1987	1988	1994	
Number of Companies Involved	70	70	50	NA	66	256 ¹
Business Volume (\$000)²						
Federal Contracts		\$ 18,000	NA	NA	\$31,400	\$ 49,400
KNOWN TOTAL	\$134,000	\$ 18,000	NA	NA	\$ 31,400	\$183,400
Jobs³						
Created	842	70	515	476	1,090	2,923
Saved		90	135	295		
JOBS TOTAL	842	70	515	566	1,225	3,218
CORPORATE SAVINGS (\$000)	\$ 15,500					\$ 15,500
Investment in Business (\$000)						
Private	\$ 926	NA	NA	\$ 18,355	\$ 2,950	\$ 22,231
Federal		800	NA	3,071	6,531	10,404
State	2,670		NA	50		2,721
Local Government			NA	60		60
KNOWN TOTAL	\$ 3,596	\$ 800	NA	\$ 21,536	\$ 9,484	\$ 35,416
University Cost⁴ (\$000)						
State	\$ 970			\$ 270	\$ 815	\$ 2,055
Federal				165		165
COST TOTAL	\$ 970			\$ 435	\$ 815	\$ 2,220

Sources: University at Stony Brook: Center for Biotechnology, Long Island High Technology Incubator, Small Business Development Center, Strategic Partnership for Industrial Resurgence

Notes to Figure I-4:

- (1) Some of the companies named by the Center for Biotechnology and the Strategic Partnership for Industrial Resurgence are also in the Long Island High Technology Incubator. Consequently the total includes some duplication.
- (2) The full total of business volume is unknown. In relation to the Center for Agile Sources of Parts and the Strategic Partnership for Industrial Resurgence, only the volumes arising from Federal contracts are known. The Small Business Development Center and the Incubator did not have data on business volume.
- (3) The Center for Biotechnology and the Incubator did not have data on jobs for 1997-1998. They had such data from the time of their beginnings. The Incubator count is complicated by company moveouts from the area, and thus does not reflect the full total of jobs created and saved. Thus the data in the table are a combination of jobs created in 1997-1998 and jobs created since program beginnings that are still in New York State.
- (4) With regard to University cost, this represents a combination of data provided by the development agencies and expenditures as shown in the 1997-1998 University operating budget.

capacities to provide major medical services: for cardiovascular treatment, including heart transplant operations; for kidney transplant and dialysis; for burn treatment; for cancer patients; in geriatrics and pediatrics, etc.

In recent years, the faculty have been more productive than ever in securing research grants, a major factor in the University's emergence as a national leader among the public universities of the nation. In 1993-1994, the Research Foundation reported revenues of \$98,492,000 in faculty research grants. In 1997-1998, this total was \$111,836,000, a 13.5% increase. In the same period, revenue from the Stony Brook Foundation grew to \$14,520,000 from the 1993-1994 level of \$7,763,000, an 87% increase.

With these developments, what happened to State support for the University? A re-examination of the 1993-1994 data was made and a comparable set of data was prepared for the 1997-1998 period (see Figure I-5). These data show that State support fell by over \$19,000,000 in the four-year period. One big reason for this fall was the withdrawal of State-paid fringe benefits from hospital funding, as discussed in the section dealing with the Health Sciences campus. Yet even with this taken into account, a further fact must be noted. While costs were rising and the total of University revenue rose by \$150,000,000, State funding for it declined.

What accounted for the rise in University revenue? If the retirees' income is omitted, the difference in University-generated revenue between 1993-1994 and 1997-1998 amounts to \$141,000,000. Beyond the outlay shown in the University budget, students and their families spent \$63,000,000 additional, and this is \$16,000,000 beyond the comparable figure for 1993-1994. Once the difference in State aid revenue—both patient and non-patient—is subtracted, the Hospital took in almost \$62,600,000 more. An added \$15,300,000 was taken in by the Hospital Clinical Practice Management Plan. Thus, \$78,000,000 of the \$130,000,000+ rise came from the Hospital and the medical faculty. The Veterans Home had an increase of non-State revenue amounting to \$6,200,000+. The Research Foundation had an

added \$13,300,000, much of which came from medical faculty work. The Stony Brook Foundation had a rise of roughly \$6,800,000. In total, these six sources were responsible for \$120,000,000 of the rise in University revenue. When the retirees' revenue increase of \$22,800,000 is added, the result approximates the total increase in the University-generated revenue from 1993-1994 to 1997-1998.

The picture that emerges is that the University worked harder and the students and families spent more of their income to provide higher education and health services and economic development gains to Long Island and New York State. The State government retrenched on its commitment not only to Long Island, but to the thousands who come from New York City, and to the many in the entire State who benefit from the Long Island economy.

The situation has been made worse by the added failure to keep pace with inflation. From 1994 to 1998, inflation was 9.7%. Thus, with a \$20,000,000 decline in State aid, there has been another \$20,000,000 rise in costs, resulting in a \$40,000,000 shortfall in keeping pace with the 1993-1994 enrollment. But there has been a rise of 1,000 in credit-bearing student enrollment.

Discussions with faculty and staff show the extent to which damage is emerging in these circumstances. There is a serious situation at the School of Medicine and the University Hospital. Leading faculty are relatively underpaid in a very competitive market. Loss of these faculty can be damaging in a number of ways. A decline in the quality of medical services and the training of doctors; a loss of patients as they seek better care for special problems; a resulting decline in revenue, putting programs in jeopardy; and a loss of research funding are all strong possibilities if funding is not adequate. Added to these problems are deferred maintenance, failure to update and replace equipment, delay in building and staffing new facilities and special services, and failure to relieve overcrowding. With all of this, the Hospital has been running in the red and its fiscal reserves have been seriously depleted.

Figure I-5

**State Revenue for University at Stony Brook
1993-1994 and 1997-1998 Academic Years
(\$000,000)**

Revenue Sources	1993-1994			1997-1998			Total Change
	Non-Patient	Patient	Total	Non-Patient	Patient	Total	
State Purposes	\$122.8		\$122.8	\$123.3		\$123.3	+5
Student Tuition	17.7		17.7	18.3		18.3	+6
Special Appropriations	1.7		1.7	2.6		2.6	+9
University Hospital	19.4	\$14.0	33.4	2.3	\$ 8.6	10.9	-22.5
Clinical Practice Management Plan		.9	.9		.9	.9	0
School of Dental Medicine and Clinic		.1	.1		.2	.2	+1
Long Island State Veterans Home	3.1	3.1	6.2	.9	4.8	5.7	-5
Research Foundation	4.4		4.4	3.3		3.3	-1.1
Income Fund Reimbursable	.7		.7				-.7
Capital Programs	18.1		18.1	21.1		21.1	+3.0
Fringe Benefits Reported Elsewhere	50.0		50.0	50.4		50.4	+4
UNIVERSITY TOTAL	\$237.9	\$18.1	\$256.0	\$222.2	\$14.5	\$236.7	-19.3

Sources: University at Stony Brook: Accounting Office, Budget Office, Clinical Practice Management Plan Administration, School of Dental Medicine, Long Island State Veterans Home Financial Office, University Hospital Finance Office

Other sets of problems have emerged elsewhere. The Small Business Development Center has done well in the last few years, but there are areas of Suffolk County it is unable to reach because it does not have the small amount of money, perhaps \$100,000, to open additional satellite centers. The Long Island High Technology Incubator has a waiting list for tenants, and flexibility in choosing those most likely to succeed is limited by a lack of State or other financial support that will allow time for choice. Other comments made in regard to the Incubator centered on the need for better financial start-up terms and for furnishing of more managerial expertise to secure investments and develop marketing. At the moment, the Center for Biotechnology is seeking funds to invest in development of academic technologies before they are licensed.

In view of the benefits noted above for these economic development efforts, the lack of additional State aid is hard to understand. Declining State aid in the face of growing costs cannot support needed replacement and updating of facilities and equipment, or provide the environment to attract top-flight faculty/research scientists. The

results noted in this report show how much they contribute in terms of medical treatment and research, in terms of helping to grow and reorient the economy to constantly changing needs, in terms of educating Long Island's and New York State's young men and women.

The STAR Program has provided important tax relief for property owners whose money mainly supports public school expenditures, and many on Long Island will benefit. Yet, the future of Nassau and Suffolk is tightly bound not only to the education of its elementary school children but also to their access to the best in higher education, so that they can continue to live and work here and earn their way in the world. This report shows the kind of return the State can expect from investment in education at Stony Brook.

PART II: UNIVERSITY REVENUES

This part of the report deals with the revenues directly attributable to University functions and State support. It is divided into four sections, three of which deal with the operations revenue.

- A. University-wide functions that are not specific to any one department or program.
- B. Health Sciences schools and the University Hospital.
- C. Specific University programs and departments.
- D. Two non-operating budget revenues. One is for capital construction. The other is for fringe benefits not noted elsewhere.

A. Revenues from University-Wide Functions

In this section there is no specific discussion of the first four items shown under General Campus Revenue. These are State Purpose Funds, Student Tuition, Special Appropriations, and State University Tuition Reimbursable. The first two have been discussed in the Summary Findings and need no amplification at this point. The other two do not require specific comment. The remaining four items in this section are discussed below.

1. The Faculty Student Association (FSA)

The Faculty Student Association received almost \$31,800,000 in revenue in the 1997-1998 academic year. However, almost \$3,800,000 was revenue from food services to the Health Sciences Center and to the Long Island State Veterans Home. This revenue, along with State payments for meals and other services, has already been counted as revenues for these agencies. As a result, the unduplicated revenue received from operatives and the various services provided through FSA was \$27,934,000+. This total is \$10,780,000 more than the FSA received in the 1993-1994 academic year.

The largest part of revenue, over \$15,900,000, came from the operation of food services in the new Student Activities Center and Humanities Cafeteria. Other large revenue producers were the Computer Corner at \$4,000,000, and the Bookstore at over \$5,000,000. The FSA provides a variety of other revenue-producing services such

as University ID's, laundry machines, vending and amusement machines, etc.

FSA is also important for the employment opportunities it provides to the University's students. About 550 persons are employed for the activities operated on or contracted through FSA. One hundred of these are full-time, non-student personnel. The other 450 are students working part-time to earn their way through college. These students earned \$1,137,126 in the 1997-1998 academic year.

2. Income Fund Reimbursable Accounts

Income Fund Reimbursable (IFR) accounts are established for University activities operating on a self-supporting basis and are used to recover costs from other activities which are associated with and use the facilities and services provided by the University. They also are used as an accounting record of activities which provide services for clients, students, and others who will be charged fees for such services sufficient to cover the costs of provision. In addition, they are used for activities under contract with a group of individuals, an organization, or any public or private corporation providing service to the University, or alternatively where the University is charging for such service provision.

In practice this means that much of the revenue reported in the IFR account is derived in the first place from revenue already received by another agency. Thus, of the \$40,562,000 recorded in the IFR account for the 1997-1998 year over \$24,500,000 had already been listed as revenues for other agencies. About half of the \$24,500,000 came from the Research Foundation, the Stony Brook Foundation, And The Clinical Practice Management Plan. The remainder consisted of revenues that, in this report, were listed for other agencies such as the School of Dental Medicine and Clinic, the University Hospital, and School of Medicine, etc.

With these revenues subtracted, the total remaining in the IFR account was \$15,986,000. These revenues were for student fees; general services; patient services; student services—the largest part of which was for telecommunications, over \$2,000,000; and tuition-related fees.

3. The Research Foundation

In the previous report, the Research Foundation was seen mainly in terms of funds it receives in research grants—over \$98,000,000 in the 1993-1994 academic year. The text of the earlier report dealt with the problems of eliminating double counting of revenues arising from the distributions of parts of the grants to SUNY Central, including the Income Fund Reimbursable accounts to help pay for the administrative and facility supports provided, and as partial offsets to salaries for involved faculty.

In reviewing the data and information for this update on the University's functions and the role of the Research Foundation, several facets of the operations came into sharper focus. The Foundation is not the original source for the grant funds that are received. These monies are gained because of the creative work of faculty and graduates in doing research that leads to expansion of scientific knowledge and development of products to improve business and industrial operations and/or treat a myriad of health and social problems.

In these respects the Foundation acts as the major facilitator for securing these research funds. Thus, the Foundation works with faculty in a number of ways: by processing their grant proposals; by providing information on availability of research grants; and by processing and reviewing the proposals with regard to format and paperwork requirements. These efforts may involve work with Federal, State, and local governments, private corporations, nonprofit organizations, and foundations. Once research has been completed, the Foundation will assist in securing patent rights, as appropriate, and, if commercial interest is expressed, in arranging licensing for use and for royalty payments to the research patent owner and to the University.

These efforts are part of a sustained, complex, and growing network of activities that have placed the University in the forefront of public higher education institutions in the nation. They relate to the presence of major research and economic development activities, the Long Island High Technology Incubator, the Center for

Biotechnology, the Small Business Development Center, the Strategic Partnership for Industrial Resurgence in the College of Engineering and Applied Sciences, and the professional development programs provided by the University. They relate to the many activities in the School of Medicine and the efforts of medical personnel in the University Hospital, the School of Dental Medicine and its clinical program, etc.

The total sponsored research was near \$112,000,000, an increase of more than \$13,500,000 over the 1993-1994 total of \$98,204,000. Just over \$89,000,000 of this — almost 80% — came through direct Federal-sponsored programs. Some additional Federal funds came indirectly through non-Federal sponsors who were also receiving Federal grants, but these funds are included in the totals for non-Federal sponsors. Figure II-1 shows the sponsors and expenditures of these research funds. Finally, note the list of non-Federal government organizations using the University's resources for research costing \$100,000 or more on Figure II-3.

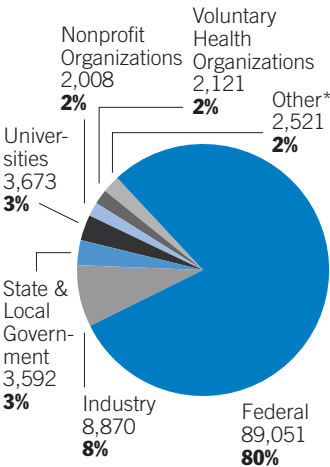
Another function of the Research Foundation is the employment opportunities it offers to undergraduate students who are not the recipients or beneficiaries of the research grants almost always used for graduates, fellows, etc. There are an estimated 265 undergraduates employed part-time by the Research Foundation. It was reported that about 80% of them manage to work not only part-time during the two academic terms, but often full-time at intercession and in the summer period. The part-time work usually is for 20 hours a week at \$6 an hour. The earnings derived from these part-time positions are \$1,322,880.

The economic impact and growing involvement of University research activities can be seen in the report of the Office of Technology Licensing and Industry Relations (OTLIR).

Commercialization efforts have included license agreements to start-up, small, and large companies. In FY 1996, of 34 license agreements, four licenses provided the core technology for start-up companies, 19 licenses were with small

Figure II-1

Sponsored Project Expenditures by Sponsor Type



Total: 111,836

* Includes Private Foundations, Multiple Sponsors, Hospitals, and Others

Source: University at Stony Brook, *Report of SUNY Research Foundations, Sponsored Project and Related Expenditures, Fiscal Year 1998*, prepared by the Office of the Vice President for Research

companies and ten licenses were with large companies (>500 employees). Four start-up companies established in FY 1996 were based on licensed technologies.

Of 30 executed license agreements in FY97, 17 were with small companies. Two licenses provided the core technology for start-ups: one in the biochemical business and one in the field of oral hygiene.

The economic impact of OTLIR activities can be most easily measured by the number of start-up companies that have resulted from faculty-developed technologies licensed to these companies. Additional measures include the growth of established regional companies to whom technologies were licensed. The OTLIR works closely with the Center for Biotechnology and supports their efforts to foster economic development in the Long Island region and elsewhere in New York State. In the past five years, Stony Brook's intellectual property has produced 14 start-up companies. Of these, ten are located in New York and eight are on Long Island. High-tech industries based on the intellectual properties of the only regional research university represent the future for growth on Long Island.

Figure II-2 indicates the major research expenditures as attributed to the specific academic divisions or programs.

There are nationwide and international organizations; research efforts involving universities across the country; national voluntary health organizations dealing with cancer, heart disease, cystic fibrosis, and diabetes problems; as well as research contracts with a number of New York State agencies. In addition, there are many research grants costing less than \$100,000.

Not all of this research leads to products that are immediately useful commercially. However, the significance of the University effort is shown in the accompanying chart. Since 1978, there has been a tremendous gain in the University's research effort leading to new invention, patent applications, and then to licenses executed for commercial development.

Figure II-2

Sponsored Project Expenditure of Two Million Dollars or More by School or Program

School or Program	Amount (\$000,000)
Biological Sciences	13.0
Physical Sciences and Mathematics	19.2
Social and Behavioral Sciences	4.1
Engineering and Applied Sciences	14.4
Institute for Mineral Sciences	2.2
Marine Sciences Research Center	6.1
Dental Medicine	2.2
Basic Health Sciences	18.1
Department of Medicine	6.0
Obstetrics and Gynecology	2.2
Preventive Medicine	5.2
Psychiatry	4.6
Sea Grant Research Program	2.4

Source: University at Stony Brook, *Report of SUNY Research Foundation Sponsored Project and Related Expenditures, Fiscal Year 1998*, prepared by the Office of the Vice President for Research

Figure II-3**Non-Federal Sponsors with Over \$100,000 in Expenditures**

Sponsors	Direct	Indirect	Total
Local Government			
Suffolk County Water Authority	\$ 93,277	\$ 44,866	\$ 138,143
State Government			
NYS Science & Technology Foundation	698,726	52,788	751,514
NYS Department of Health	602,648	5,748	608,397
NYS Education Department	497,235	33,795	531,030
NYS AIDS Institute	415,922	45,423	461,345
NYS Off Child & Family Services	336,558	104,750	441,309
NYS Department of Social Services	245,060	63,575	308,636
Industry			
Westat Corporation (NIH flowthrough)	618,746	288,385	907,132
Bertex Laboratories	344,680	68,936	413,616
Dayton T. Brown Inc.	254,795	94,274	349,069
Council for Tobacco Research	295,033	44,254	339,287
Merck Research Laboratories	279,699	54,568	334,268
Smokeless Tobacco Research Council	273,800	33,475	307,275
Sandia National Laboratories	149,199	54,146	203,346
Axys Pharmaceuticals Inc.	158,677	31,735	190,412
Sumitomo Chemical Company Ltd.	152,483	30,496	182,980
Nastec Pharmaceuticals Co. Inc.	153,552	22,480	176,032
Quintiles Pacific Inc.	145,319	29,063	174,383
Pfizer Inc.	140,725	25,889	166,614
Merck & Company	136,505	26,855	163,361
Collagenex Inc.	126,142	20,396	146,538
Transkaryotic Therapies Inc.	117,665	23,533	141,198
Pharmacia & Upjohn Co.	116,217	23,243	139,460
GT Equipment Technologies Inc.	96,298	27,955	124,253
Unilever Research	105,863	15,878	121,741
Metacrine Sciences Inc.	100,368	20,073	120,441
Nanoprobes Inc.	78,172	37,131	115,303
Warner Lambert Co.	95,859	19,175	115,035
Wyeth-Ayerst Laboratories	95,510	16,311	111,821
Ortek Therapeutics Inc.	96,062	14,409	110,471
Small Molecule Therapeutics Inc.	68,177	32,384	100,561
Nonprofit Organizations			
United Way of Long Island	326,765	29,267	356,032
Howard Hughes Medical Institute	260,949		260,949
Human Frontier Science Program Org.	202,686	7,705	210,391
Ranamafana National Park Project (AID)	135,668	3,197	138,865
Alzheimer's Association	112,272	11,227	123,499
Fetzer Institute	105,503		105,503
Private Foundations			
Hudson River Foundation	503,998	66,366	570,364
Whitaker Foundation	378,416	68,435	446,852

Figure II-3 (continued)

Sponsors	Direct	Indirect	Total
Universities and Hospitals			
Columbia University	569,138	160,921	730,059
California Institute of Technology	242,062	89,386	331,449
University of Pennsylvania	142,223	61,487	203,711
Rutgers University	140,432	62,701	203,133
University of North Carolina	131,184	63,099	194,284
Ohio State University	109,862	40,649	150,511
SUNY Binghamton	112,515	16,877	129,392
Regents of the Univ. of Calif.	110,040	7,247	117,288
Washington State University	99,230	14,886	114,116
Yale University	74,614	35,520	110,134
Cornell U. Medical School	79,515	29,261	108,777
NYU Medical Center	69,571	31,561	101,132
Voluntary Health Agencies			
Am Cancer Society	563,871	102,458	666,330
Am Heart Association	499,065	27,394	526,459
Am Heart Assn NYS Affiliate	206,288		206,288
Louisiana Medical Foundation	121,242	57,590	178,832
Cystic Fibrosis Foundation	120,520		120,520
Am Diabetes Association	115,328		115,328

Source: University at Stony Brook, *Report of SUNY Research Foundations, Sponsored Project and Related Expenditures, Fiscal Year 1998*, prepared by the Office of the Vice President for Research

4. The Stony Brook Foundation

The Stony Brook Foundation is chartered by the State as a charitable nonprofit corporation to receive and administer private gifts on the University's behalf. The foundation has received gifts from corporations, associations, foundations, alumni, and parents of graduates and students. These gifts and other income provide endowments, fellowships, financial assistance for students, and equipment for the University. The gifts are used to fund faculty chairs, provide for patient care and medical research, and have been applied to many fields of inquiry in the sciences, the social sciences, for the arts, for administrative and facility operations and for various services and campus organizations.

In the academic year ended June 30, 1998, revenues and other support gained for the University came to over \$14,500,000. Over \$8,000,000 of

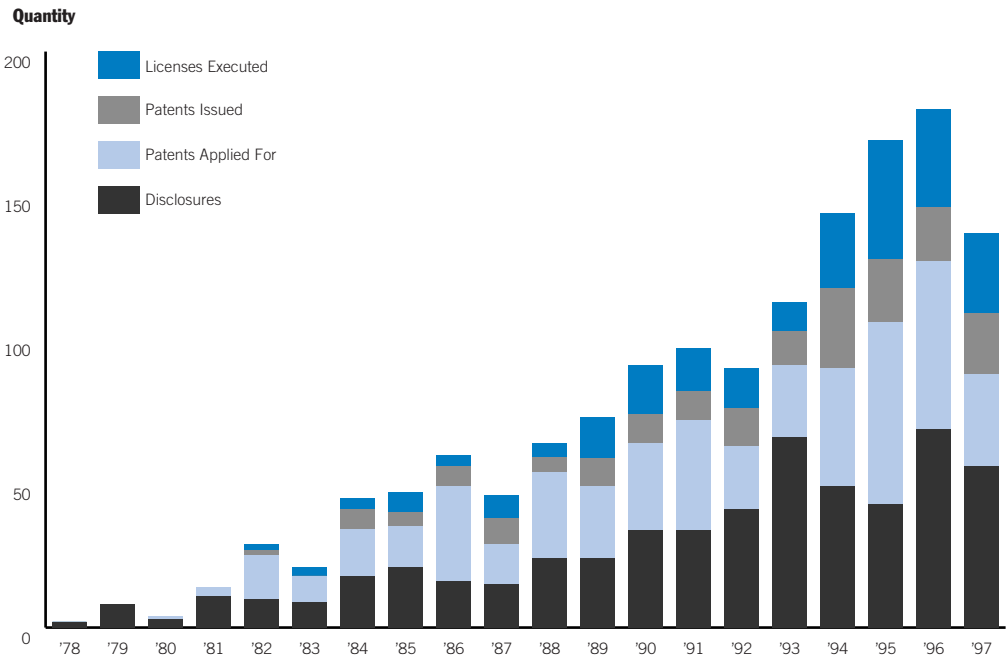
this came from gifts and grants. Almost \$3,000,000 was the result of gifts-in-kind such as computers and contributed services. Roughly another \$1,000,000 came from contracts for services, a great part of which were for Suffolk County agencies.

B. Revenues from the Health Sciences Functions

1. The Health Sciences Center

The Health Sciences Center includes the University Hospital plus five schools: Health Technology and Management, Dental Medicine (comprising both the School of Dental Medicine and the Clinic), Medicine, Nursing, and Social Welfare. It also has a Hospital Clinical Practice Management Plan, a Dental Clinical Practice Management Plan, and the Long Island State Veterans Home. The Hospital is the most important fiscal component, receiving nearly \$326,000,000 in the 1997-98 academic year.

Figure II-4
Disclosures, Patents, and Licenses by Year



Source: University at Stony Brook, Office of Technology Licensing and Industry Relations

While the Hospital revenues were essential to pay for patient care, it is also important to note that the various schools received substantial sums from other sources. In the University Budget, some \$42,000,000 of State Purpose funds were allocated to them. In addition, the Health Sciences Center received over \$47,000,000 through programs it had processed by the Research Foundation, and more money was received from the Stony Brook Foundation. Over \$43,000,000 of the Research Foundation revenue was received by the School of Medicine. The Hospital Clinical Practice Management Plan received a total revenue of over \$100,000,000 in 1997-1998.

While patient care is at the core of the Health Sciences Center's mission, the realization of this goal requires efforts that go far beyond hospital beds, diagnostic procedures, and operating rooms. The training of doctors, nurses, and medical technicians requires cooperative agreements with hundreds of institutions and agencies, both on Long Island and across the country. The development and improvement of advanced treatment specialities at the Hospital requires a network of filial agreements with other medical institutions in the region. Programs for improving primary care and preventive medicine require community outreach efforts of many kinds. Creating these networks requires a great deal of money, with a consequent economic impact, but the end results reach into the lives of tens of thousands of Long Island families. In the following pages, the dimensions of these efforts are presented.

The University Hospital and Medical Center

The University Hospital and Medical Center is Long Island's number one health care provider with over 500 beds and a number of intensive care units. It is the only tertiary care center in Suffolk County, serving as a regional center for open-heart surgery, kidney transplants, burn care, high-risk obstetrics, trauma service, and care of persons with HIV infection. It houses a specialized breast care center, a cancer center, the Cystic Fibrosis Center of Suffolk County, an osteoporosis center, and an internationally recognized center for diagnosis and treatment of Lyme disease. As the only

public hospital in Suffolk County, it serves a large share of the indigent population, insuring access to all regardless of ability to pay.

Hospital revenue for 1997-1998 was \$325,807,923 (see Figure II-5). In 1993-1994, comparable revenue was close to \$280,000,000. In the 1993-1994 report, outpatient ambulatory visits numbered 232,000, compared to just under 300,000 in 1997-1998. In-patient volume rose from 23,500 to over 27,000, and emergency visits increased from 44,000 to over 50,000. In part, these increases in patient volume explain the revenue increases over the four-year period. Other reasons for revenue increase may be related to changes in rates of reimbursement; changes in accounting and charging procedures; increase in the elderly population which may account for the Medicaid increase, etc. However, three other factors should be noted. One is the decrease in the State fringe benefit amount. In 1993-1994, the State paid \$19,400,000 and in 1997-1998, there was hardly any payment. This reduction was also in force in 1996-1997. If this reduction had not been in effect, revenue would have totaled about \$350,000,000. As a result, the Hospital was forced to use its reserves and funds intended for capital improvements, for updating and replacement of equipment, and began to run a deficit. In the face of this situation, the State agreed to a significant increase in its 1998-1999 allocation to the Hospital.

A second factor stems from the changing nature of the medical market place. With the rise of managed care, health insurers looking for efficient and effective services, and doctors and patients becoming more aware of the need for collaborative and specialized services, there has been a corresponding growth in the need to provide an integrated network of medical service relationships to serve these various demands. Without a network, it is difficult to secure a base volume of patient referrals, in terms of practice and economics, to support the range of specialized services required. Recognizing these facts, the University Hospital has moved to expand its patient referral base by establishing outreach clinics such as those in Patchogue and Hampton Bays.

Figure II-5**University Hospital Revenue by Source 1993-1994 and 1997-1998**

Source	1993-1994	1997-1998	Change
Medicare-Federal Government	\$ 71,400,000	\$ 99,230,000	+\$ 27,830,000
Medicaid			
Federal Government	28,050,000	17,289,200	- 10,760,800
State Government	14,025,000	8,644,600	- 5,380,400
Local Government	14,025,000	8,644,600	- 5,380,400
Commercial Insurance	56,100,000	70,175,000	+ 14,075,000
Blue Cross	51,000,000	33,655,000	- 17,345,000
Self Payment	20,400,000	26,789,000	+ 6,389,000
Other Patient Related Revenue		49,777,000	+ 49,777,000
State Fringe Benefits	19,400,000	2,306,000	- 17,094,000
Miscellaneous Revenues	5,000,000		- 5,000,000
Other Non-Patient Operating Revenue		9,309,000	+ 9,309,000
TOTAL	\$279,400,000	\$ 325,819,400	+\$ 46,419,400

Source: University at Stony Brook, Hospital Finance Office

In addition, there is an extensive program of community services utilizing the full range of faculty and student personnel from the other schools of the Health Sciences campus. The attached list of such programs (see Figure II-6)—dealing with health education, clinical and support groups, health maintenance, and research activities, both at the University campus and in the Long Island community—points to the fact that good health care extends far beyond the doctor’s office and the operating room; that beyond the tens of thousands coming to the hospital itself, there is a community of many thousands more who are and need to be reached.

The Health Sciences Schools, the Training of Personnel, and Community Involvement

The major revenue contributions to the University come from the University Hospital and the Clinical Practice Medical Programs. Beyond the payments for tuition and fees and living expenses involved with presence on campus, the other health sciences schools are not major revenue producers. All the schools are, however, involved in regional, community, and, in a number of cases, national networks of health care provision. These relations occur directly through training of students in the schools.

Figure II-6

**University Hospital and Medical Center
Community Services Programs**

Educational Programs

Blue Waves Heart Links Project
BOCES Internship Program
Breast Education Program for High Schools
Clinical Laboratory Tours for College Students
Customer Service
Dental Outreach Program
Department of Health Care Policy and Management
Diabetes Care Center
Geriatric Outreach
Health Careers Program/Tours for High Schools
Health Fairs
Long Island Safe Kids Coalition
Medical Explorers
Neonatal Outreach Program
Patient Rights, Advance Directives
Safety Net Program (Cancer Education)
Smoking Cessation Program
Sudden Infant Death Syndrome Regional Center
Speakers Service
Suffolk Project for AIDS Resource Coordination (SPARC)
The Explorers
3,000 x 2,000 Program
Transplantation Services, Educational Outreach

University Hospital Financial Assistance Program
Women's Health Lecture Series

Clinical Programs

Adult Day Care Program, LISVH
Blood Donation Services
Cancer Helpline
Cleft Palate/Craniofacial Center
Comprehensive Pain and Rehabilitation
Dental Care for the Developmentally Disabled
Dental Phobia Clinic
Doc-to-Doc
North Brookhaven Health Center
Health Calls
L.I. Alzheimer's Disease Assistance Center
Newborn Infant Hearing Screening
Osteoporosis Center and Clinical Research Program
Pediatric AIDS Center
Pediatric Dental Infectious Disease Clinic
Pediatric Maternal HIV Services
Primary Care Initiative
Prostate Care Program
Satellite Collecting Station (Laboratories)
Stony Brook Senior Dental Program

Suffolk County Medical Control
The Sayville Project
Breast Cancer Support Group
Circle of Caring
Connections Support Group
Cystic Fibrosis Family Network Support Group
Gyn Oncology Support Group
Hope for Hearts Support Group
Low Vision Support Group
Prostate Cancer Support Group
Sudden Infant Death Syndrome Regional Center
Support Group for Parents of Children with Cancer
Wheeze with Ease

Family/Social Programs

Physical Plant Pediatrics Program
Smith Haven Mall Walking Club
The Greater Sayville Food Pantry

Research Programs

Stony Brook HIV Treatment Development Center
Women's Health Initiative

Source: The University Hospital and Medical Center at Stony Brook, *Community Services Directory, 1997*

For the School of Medicine and the University Hospital, providing good medical care involves the training of both medical students and residents. In addition to attending classes, the medical students, in their four years of training, are required to work in the hospital in several beginning capacities. They may, for example, take case histories, do examinations, draw blood, do diagnoses, and propose regimens of cure to those supervising them. As part of this training, they may spend short periods of time rotating to other hospitals with which the School of Medicine has agreements for doing similar work.

After four years of medical education, the student has a degree in medicine but is not yet licensed to practice unless—in New York State—he or she completes one year of residency at a hospital and then passes an exam which grants the license to practice. For specialists, the residency requirements vary and can be much longer than one year. On becoming a resident, unless the graduate becomes a resident at the University Hospital, the professional relationship with the University ceases. At the same time, the University Hospital is also accepting graduates from other medical schools to become residents at Stony Brook's hospital. The training of these residents may involve short rotations at other hospitals in order to provide a depth and variety of experience and exposure that cannot be secured at any one location. This rotational system also requires a system of filial agreements between Stony Brook and other medical institutions.

Much the same system of training is required for students in the School of Dental Medicine, the School of Nursing, and the School of Health Technology Management. The many students from the last two are likely to go anywhere in the country, from Maine to California, Florida to Washington. Almost all School of Social Welfare students do their training in the metropolitan area, mainly in Suffolk and Nassau Counties.

In looking at the varieties of location and of the kinds of skill involved in these training activities, some conclusions emerge. First, the impact of the University through its system of health education is far more than economic in terms of the revenue collected. Second, without the inter-related skills provided by this assemblage of training efforts, the quality of health care efforts would suffer. Third, the provision of training staff and the labor services they offer has become economically as well as professionally important to the hospital, medical centers, and welfare agencies served. Fourth, for the students, the exposure and experience gained through these training and service agreements are invaluable in terms of nurturing their education and providing new exposures to career opportunities.

Figure II-7**Clinical Practice Management Plan Revenue by Source
1997-1998**

Revenue Source	Amount
Managed Care	\$ 46,400,000
Medicare	13,200,000
Self Payment	8,000,000
Commercial Insurance	7,900,000
Other	4,600,000
Medicaid	3,690,000
Refunds	(2,300,000)
SUB TOTAL	\$ 81,490,000
Other Agreement Income	3,685,000
Interest Income	410,000
TOTAL	\$ 85,585,000

Source: University at Stony Brook, Clinical Practice Management Plan Administration Office

The Clinical Practice Management Plan

The Clinical Practice Management Plan is a professional corporation organized to compensate the faculty of the Medical School for the services they deliver to University Hospital patients. In the July 1997 to June 1998 period, the gross revenue amounted to more than \$101,000,000. However, \$15,735,000 was revenue already counted in the University Hospital's total, but transferred to the Plan's doctors for services they provided. This amount has been left in the Hospital account. Thus, the net revenue was \$85,585,000 (see Figure II-7). A component of this net was paid into the Income Fund Reimbursable account as compensation to the University for use of various services. Since this sum would otherwise be double counted, it has been deducted from the IFR total.

The School of Dental Medicine and Dental Clinic

The School of Dental Medicine and its clinic had about 43,000 patient visits in the 1997-1998 academic year, compared to 35,000 in the 1993-1994 year. The school had a total income of \$11,700,000+ (see Figure II-8). However, a good deal of that income was from accounts in which revenue had already been recorded. A large portion, \$4,635,000, was an allocation from the State purposes account which provides revenue to schools and programs throughout the University. Another \$2,170,000 came from the Research Foundation

Figure II-8**Dental School Revenues
1997-1998 Academic Year****Revenue Derived from Patient Treatment
and Use of University Facilities**

Dental Care Center	\$ 2,923,735
Dental Clinical Practice Management Plan	800,000
Medicare Component	731,040
Federal	365,520
State	182,760
Local	182,760
Dental Clinic Equipment Rental	401,211
Hospital Dental Clinic	312,024
Dental Care for the Disabled	123,856
University Fees and Fines	46,684
Dental Medicine, Summer Program	43,208
Dental Salary Recovery	38,345
Dental Photocopy	3,775
Dental Miscellaneous Fees	376
SUB TOTAL	\$ 4,693,214

Revenue Derived from Other Sources

State Purpose Allocation	\$ 4,635,581
Research Foundation	2,170,773
Stony Brook Foundation	204,772
SUB TOTAL	\$ 7,011,126
TOTAL	\$ 11,704,340

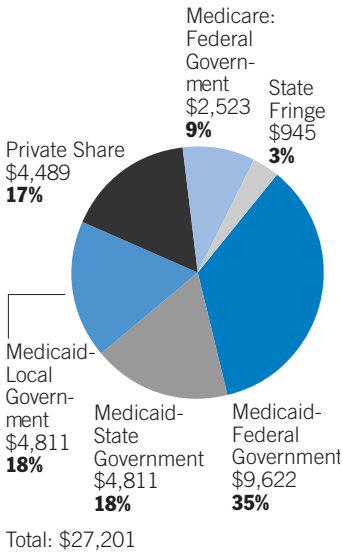
and \$205,000 from the Stony Brook Foundation. These have been recorded in the revenues for these foundations.

Most of the remaining income is from two sources of patient revenue. One source is the Dental Clinical Practice Management Plan with about \$800,000. The second source is the Dental Clinical Care Center with an income over \$2,900,000. Over \$700,000 of this income is through Medicaid. Revenue is also received from the University Hospital for dental care to its patients, and there is a dental program for care to the disabled—the only one of its kind in Long Island.

In Figure II-8, the various sources of School of Dental Medicine and Clinic revenue are listed in two groups. One group contains those revenues which are recorded in other accounts and transferred to the School of Dental Medicine, such as the \$4,635,000 allocation from the University's State Purposes revenue. The second group con-

Figure II-9

**Veterans Home Revenue (\$000)
1997-1998**



Source: Long Island State Veterans Home, Financial Reporting 1997-1998 for year ending June 30, 1997

sists of revenues brought in through faculty and student work with patients, and payments for use of the School and University's facilities. It can be said that with the inclusion of Research Foundation and Stony Brook Foundation revenues, the School is responsible for producing over \$7,000,000 of revenue through its activities. However, these foundation revenues have not been recorded as new revenues in the School of Dental Medicine account.

2. The Long Island State Veterans Home

The Veterans Home had a certified bed capacity of 350 in June 1998 and was operating at or near capacity in the 1997-1998 fiscal year.

Total revenue for the year was over \$27,200,000, with most of the money coming from Medicaid (see Figure II-9). The State share of Medicaid was over \$4,800,000. In addition, the State paid fringes of \$2,196,200. The total for all revenue came to \$27,201,000 which was nearly \$6,000,000 more than the sum shown in the report for 1993-1994.

There are two things to note about these figures in relation to the previous report. The first is the overall increase arising mainly from the rate gains for Medicare and Medicaid. The second is the much lower figure for State fringe benefits. This decrease occurred because the 1993-1994 State fringe included retroactive payments due to the Veterans Home. The 1997-1998 fringe is regarded as a normal annual share.

C. Revenues from Specific University Functions

1. Other Operating Budget Revenue

This part centers on revenue derived from specific functions which are not used by everyone at the University, although all students are required to pay an athletic fee. In the main, there are specific users of the facilities and programs shown here. For example, not all students are dormitory residents.

The Dormitory Income Fund

For the 1997-1998 school year, the Stony Brook Budget Office reported that the dormitories had a total revenue of \$23,658,696.

The Staller Center

In the 1997-1998 academic year, the Staller Center's revenue was over \$741,000. These revenues were derived from a variety of sources, with over 60% arising from performances. The remainder arose from corporate and individual contributions plus endowment interest.

The performance revenues were derived from five sources: rental fees for facility uses, main stage fee, children's programs, recital hall fees, and film revenues. The rental fees received totaled over \$121,000, and were from organizations such as the Long Island Philharmonic, Theatre Works—a Manhattan group, the Seiskaya Nutcracker, and the rest mainly from a number of Suffolk County dance organizations.

Recital Hall gross revenue totaled nearly \$220,000, with performances by the Dance Theatre of Harlem; the Romeo and Juliet Acting Company; the Sydney Dance Company; the Karamazov Brothers; and Harry Belafonte, among others. Performances for children brought in another \$18,000. Recital hall fees brought in \$21,000. In addition, films, including summer programs that were attended by many Suffolk residents as well as students, brought in over \$78,000 for the year.

Endowment interest brought in \$96,000 and fund raising was responsible for \$187,000 more of revenue. About half of the fund contributions were made by corporations in Suffolk, and individual patrons, including the Stallers, contributed the remainder.

The Sports Complex

The University's Sports Complex gross was slightly under \$400,000 and the net about \$234,000. A look at its event schedule for 1997-1998 shows that its facilities, gymnasium, pool, and athletic fields, were used by over 100 organizations. These events included computer shows, regional track meets, AAU basketball, an Amish Quilt show, and Greek Olympics. A number of organizations were repeat users, a few on a once-a-year basis and some using the facilities more than once a year. The latter included ballet schools, swimming clubs, and baseball teams.

There were more kinds of activities such as summer day camps, an NBA Big Man's event, Long Island Rough Riders soccer club, kennel club, job expositions, wheelchair basketball, an Indian cultural festival, and craft shows.

The organizations using the Sports Complex facilities were drawn largely from Suffolk County with by far the largest number coming from Brookhaven and the University itself. Organizations also came from Huntington, Islip, Smithtown, Babylon, and East Hampton. A few came from eastern parts of Nassau County—Syosset, Plainview, Bethpage, and Oyster Bay. Some of the events were organized by groups from New Jersey, the District of Columbia, Maryland, Pennsylvania, and Bayside, New York. While the revenue generated by the Sports Complex is small, the value of many of its services cannot be duplicated easily elsewhere in Suffolk County. This is especially true for many of the communities near the University.

The School of Professional Development (SPD)

The revenues for the School of Professional Development were over \$5,300,000 in 1997-1998.

In the University's accounting system, degree-credit bearing program revenues are included in tuition revenues, and the nondegree course revenues are included in the Income Fund Reimbursable account. Thus, while the revenues for SPD are included in the budget, there is no single source showing the total for this school. In the budget data treatment, total revenue for the school will be entered, with a note that the degree credit portion is not to be double counted.

There are good reasons for treating SPD separately. The significance of its work extends to much more than the revenue collected for it, in terms of career and professional development opportunities with attached relation to the economic development programs of the University, and also to the added personal enrichment opportunities offered. In both contexts this can also be judged by the number of persons reached by the program, nearly 6,600 with 4,100 of these taking degree credit courses, and close to 2,500 in programs or courses not offering credits for a degree (see Figure II-10). It should be noted that these

Figure II-10**Programs of the School of Professional Development:
Enrollment, Revenue, and Business Associations,
1997-1998 Academic Year**

Program	Enrollment	Revenue	Business Associations
Degree Granting Programs			
Online Graduate Courses	286	\$ 274,131	
Graduate Degree Programs	3,627	3,470,309	
Advanced Graduate Certificate Programs	172	659,448	
Post-Graduate Certificate Programs	31	204,693	
SUB TOTAL	4,116	\$4,608,581	
Non-Degree Granting Programs			
Career Management & Development Courses	125	\$ 156,250	3
Prof. Licensing & Certificate Programs	428	105,000	1
Center for Corporate Education & Training*	639	225,000	35
Computer Training	901	180,134	
Personal Enrichment	375	67,500	
SUB TOTAL	2,468	\$ 733,884	39
ALL SPD PROGRAMS TOTAL	6,584	\$5,342,465	39

***Center for Corporate Education and Training:**

AIL	Dayton T. Brown	LILCO
Ademco	DZUS	Microwave Power Devise
Aeroflex Target Rock	Electronic Hardware	Minn-Max
Arkwin Industries	Equine Stellar	Monitor Aerospace
Avnet	Frequency Electronics	Narda Loral
Bill-Jay	General Microwave	Norden Systems
Bridean	Gull Electronics	Periphonics
Brookhaven Hospital	Halm	Servo
Burton Industries	ILC Data Devise Corp.	Sinn-Tech
C & N	IMC Magnetics	Standard Micro Systems Corp.
Chromate	Instruments for Industry	Symbol Technologies
Collaborative Group	J'Daddario Guitar Strings	

Source: University at Stony Brook, School of Professional Development Office, Budget, and Administration

2,500 are not counted as part of the University's enrollment. With these included, the population served by the University would have been close to 21,000 and—to the extent that Summer Sessions students (about 6,600) included others who had not enrolled in University courses during the school year—that is a larger number of students.

In the accompanying table, the SPD programs have been listed in two parts—the degree granting and the nondegree granting. The degree granting programs are responsible for over

\$4,000,000 of the revenue and over 4,100 of the University's enrollment, especially in the part-time category (see Figure II-10). However, while the nondegree granting programs bring in less revenue and reach fewer people, three of them as shown in the table are the ones reaching and assisting Long Island firms. In the list of 35 firms related to the Center for Corporate Education and Training, there are some which are in the Long Island High Technology Incubator (see Figure II-10).

2. Summer Sessions Costs

There were over 7,600 Summer Sessions students, 2,300 graduate and 4,200 undergraduate in the Western campus, and another 1,100 at the Health Sciences campus. Most were taking credits for coursework, some were continuing research in their academic programs, and some were new students for the coming year doing laboratory work in preparation for academic courses. The tuition and fees revenue for these courses came to \$5,455,096.

In the 1993-1994 study, these costs were multiplied by another 126.6% to secure their estimated living expenses attributable to attending the University. For this study, it is believed that this percentage was too high, as tuition and fee costs at the University have increased at a higher rate in the four years than the cost of living. Accordingly, as a rule of thumb, it has been estimated that a doubling of the tuition and fee costs would be more appropriate. This brings Summer Sessions costs to \$10,910,192.

D. Non-Operating Budget Revenues

This section deals with two revenue-producing functions that are not shown in the University operating budget. Capital construction is mainly State supported. In addition, there are fringe benefits, all State paid, which do not appear elsewhere in the operating budget.

1. Capital Construction

A list of University projects for a five-year capital plan, all State supported, was secured. The total came to \$103,099,700. There was, in addition, money donated by Charles B. Wang, Chairman and CEO of Computer Associates, for construction of the Asian-American Cultural Center, with cost estimated at about \$30,000,000. A bicycle path for \$1,500,000—\$300,000 from a Federal Department of Transportation grant and the remainder private money—also had to be added. This brings the total to roughly \$135,500,000. As noted in the earlier study, it is reasonable to divide this total by five to secure a yearly average revenue, which in this case comes to \$27,100,000.

This average is lower than the 1993-1994 total of \$37,500,000. The main reason for this difference is that the earlier study included a capital expenditure of \$94,000,000 for construction of a cogeneration power plant. Expenditures for this power plant no longer appear in the University's capital programming.

2. Fringe Benefits Not Reported Elsewhere

The operating budget lists the total revenue allocation by object among the administrative revenue sources, including salaries and wages. For a number of the revenue sources from which these salaries and wages are drawn, the University does not pay the fringe benefits for employees; the State does. However, different rates are paid by the State for the Long Island Veterans Home employees, for the hospital employees, and for the other employees of the University.

The problem of the fringe payments for hospital employees was discussed earlier. The payments for the Veterans Home were reported in the material on that section. With these noted, the State's fringe payments for other employees still has to be reported. The University's accounting office gave this information. These other salaries and wages came to \$154,443,880. At a rate of 32.65%, the fringe payment came to \$50,425,862. This amount is about the same as shown in the 1993-1994 budget.

PART III: OTHER REVENUES

In this section, two sources of revenue derived from the University's presence, but not part of its budget, are shown. One source is the additional money that parents, students, relatives, and friends must contribute beyond the expenses shown as University revenue. The second source is income derived from University retirees who have continued to live on Long Island. Although the analyses for both of these are complicated and a bit uncertain, the sums involved are important for students as their economic ability to secure a University education is involved. Consequently, it is advisable that some picture of the costs of education be presented.

A. The Costs of Education

Analysis of the costs of a University education to students is significant on at least two levels. On one level, beyond the costs already embodied in University revenue totals, there are added monies needed by the students to pay for their daily existence. The availability of these funds and how they are secured relates to the students' attendance—full-time or part-time, to the time and energy given to studies, to the financial burden on their families, and on themselves—if they have to borrow money. On a second level, the total of these additional costs for all the students is an amount that must be counted in estimating the economic impact of the University.

Calculation of the total of costs and the additional funds needed by students requires the assemblage and relation of several types of data. They are as follows:

1. The cost calculations for education and living expenses per student, depending on whether they were graduate, undergraduate, medical, or dental students; full- or part-time; lived on campus or commuted to it; had a geographic origin in New York State or elsewhere. The University Financial Aid Office supplied these data.
2. The assemblage of data on the number of students in each of the cost categories shown in the Financial Aid data. The number in each category

Figure III-1

**Geographic Origin of Students
Attending University at Stony Brook by Campus,
Graduate-Undergraduate and Attendance
Status and Residence, Fall, 1998**

Health Science Campus	Geographic Region					
	Suffolk	Nassau	New York City	Other New York State	Other United States	Foreign
Medical and Dental Students:						
Dormitory Residents						
Full-Time Graduates	13	9	49	14		2
Full-Time Undergraduates						
SUB TOTAL	13	9	49	14		2
Commuters						
Full-Time Graduates	170	85	138	83		1
Full-Time Undergraduates						
SUB TOTAL	170	85	138	83		1
MEDICAL AND DENTAL TOTAL	183	94	187	97		3
Non-Medical and Dental Students:						
Dormitory Residents						
Full-Time Graduates	13	3	22	8	4	15
Full-Time Undergraduates	28	21	83	18	15	1
Part-Time Graduates	1	1	1			
Part-Time Undergraduates						
SUB TOTAL	42	25	106	26	19	16
Commuters						
Full-Time Graduates	297	63	42	40	73	21
Full-Time Undergraduates	240	62	27	9	10	2
Part-Time Graduates	396	102	60	42	70	7
Part-Time Undergraduates	107	16	7			1
SUB TOTAL	1,040	243	136	91	153	31
NON-MEDICAL AND DENTAL TOTAL	1,082	268	242	117	172	47
HEALTH SCIENCES CAMPUS TOTAL	1,265	362	429	214	172	50

was then multiplied by the cost of the category to secure a total cost. When all categories were summed, the total of student costs was achieved.

3. The amount of student costs already shown as University revenue, such as tuition, fees, dormitory costs, and meals is then added. This amount is subtracted from total student costs to determine how much more must be secured to pay for their education. This added amount is also an addition to the revenue impact of the University.

Figure III-1 (Cont.)

**Geographic Origin of Students
Attending University at Stony Brook by Campus,
Graduate-Undergraduate and Attendance
Status and Residence, Fall, 1998**

Western Campus	Geographic Region					
	Suffolk	Nassau	New York City	Other New York State	Other United States	Foreign
Dormitory Residents						
Full-Time Graduates	43	8	31	18	32	452
Full-Time Undergraduates	831	925	3,337	545	159	182
Part-Time Graduates	10	1	7		2	61
Part-Time Undergraduates	16	10	35	9	1	1
SUB TOTAL	900	944	3,410	572	194	696
Commuters						
Full-Time Graduates	760	70	76	89	116	316
Full-Time Undergraduates	3,196	515	496	106	31	142
Part-Time Graduates	1,804	187	91	129	28	192
Part-Time Undergraduates	855	97	84	23	4	13
SUB TOTAL	6,615	869	747	347	179	663
WEST CAMPUS TOTAL	7,515	1,813	4,157	919	373	1,359
UNIVERSITY TOTAL	8,780	2,175	4,586	1,133	545	1,409

Source: University at Stony Brook, Institutional Research

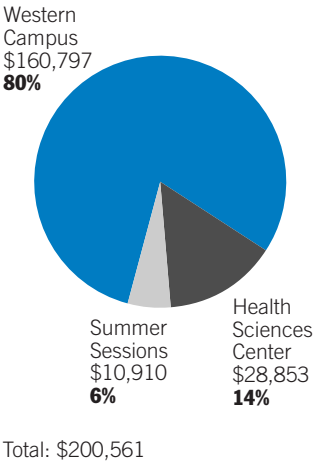
- At this point, the question is posed: how do students pay for their education? Data were secured on tuition aids, and grants from Federal and State government and from private sources through the Research Foundation, the Stony Brook Foundation, and through University awards. Data on loans through Federal programs also were secured. Finally, data were secured on earnings and the number of undergraduates working part-time at the University.
- The amount of student aid derived from Federal, State, and University grants of one kind or another.

1. Tuition, Required Fees, and Other Basic Student Costs

Data from the University's Financial Aid Office were made available for 1998-1999, showing tuition, fees, and basic living costs. These costs are roughly equal to those in the preceding academic year. The costs reflect a variety of factors as each applies to specific students, such as being a

Figure III-2

Total of Estimated Combined Education and Living Costs for Students, University at Stony Brook, 1997-1998 Academic Year (\$000)



Sources: Derived from data provided by University at Stony Brook, Institutional Research, and Student Accounts

graduate, undergraduate, or medical student; a New York or out-of-state resident; living in a University dormitory or being a commuter; etc. These factors were, with some modifications, applied to students characterized by combinations of the various factors. Three modifications were made in the data. The cost of \$1,500 for commuter students living at home was not used. Transportation costs were also lowered for many commuter students since most of these students live in Suffolk County and many are near Stony Brook, and car costs cannot be completely ascribed to University purposes. Third, for Summer Sessions students, tuition and fee costs are assumed to be one-third of the academic year, and costs for these are based on the assumption that credits taken are in the same ratio.

Costs per student can vary dramatically. Tuition and fees for a full-time New York resident undergraduate are less than one-half those for a full-time out-of-state undergraduate. At the graduate level—full-time—there is a \$3,300 difference in costs for tuition and fees between a New York State resident and a student from out-of-state.

2. Student Enrollment

The next step in cost calculation was to secure data on student enrollment with regard to geographic origin and other characteristics shown in Figure III-1. These enrollment data were then used as shown in the following section to develop the total student costs for education at Stony Brook. In terms of geographic origin, the data here go beyond the categories required for assembling the estimate of overall tuition costs. There are major reasons for this. With the data as shown in Figure III-1, the educational importance of Stony Brook to Long Island, New York City, and the State can be seen, and the pull of its graduate schools in attracting students from all over the country and from abroad can also be measured.

In the Fall of 1998, the University had an enrollment of 18,628 students taking courses for credit. In addition, there were over 2,000 people in the School of Professional Development taking noncredit courses. Summer Sessions had an enrollment of over 7,600. Many of these Summer

Sessions students were holdovers from the regular academic year doing research, or taking extra credits, or makeup credits. Others were new students, such as teachers taking credits in order to get salary increases, or entering students in the program for Health Technology Management taking laboratory courses before the new school year started. In sum, well over 20,000 persons, the large majority being credit-taking students, were enrolled in the University.

Data were secured on the 18,628 credit students with regard to geographic origin, western campus and Health Sciences Center distribution, graduate or undergraduate status, full- or part-time attendance, and whether they were living on campus or commuting. These are shown in the accompanying tables.

Almost 8,800 of the students (59%) were from Long Island—with 47% from Suffolk County, and another 2,200+ from Nassau. Almost a fourth of the students were from New York City, roughly 4,600. There were another 1,100+ from other areas of New York. Foreign students totaled over 1,400, and those from other areas of the United States numbered 545.

The medical and dental schools had an enrollment of 564, with almost all from New York State and 464 of them from Suffolk, Nassau, and New York City. There were—outside of the medical school and dental programs—about 2,600 full-time graduate students, with 1,100 from Suffolk County and 800 foreign students. The part-time graduate students numbered almost 3,200, with 2,200 from Suffolk County.

When the 2,000 noncredit course students in the School of Professional Development are added along with the Summer Sessions' thousands, the following picture emerges. The University is the major higher education center for Long Island in terms of number of students—providing advanced educational training, including highly significant research, and part-time career advancement education for thousands of hard-working employees of Long Island companies and governments. Further, because of the high quality of its scientific research, hundreds of

students from all over the world have come to the University. With almost 4,000 students, including a third of the medical and dental school enrollment, from New York City, the regional importance of the University is emphasized as well.

A major reason for attendance at the University is economic. Many of those attending could not afford or would have trouble paying private school costs. In this picture, the high quality of many of the University's offerings and its significant research reputation cannot be overlooked. If the University were not here in its present character, families in and outside of Long Island would suffer greatly, as would New York City's higher education system, due to the subsequent demands that would be placed on it.

3. Total Student Costs

Figure III-2 shows that the total of student costs for educational and living expenses at Stony Brook is over \$200,000,000. The detail shows that the per student costs can vary greatly. A full-time undergraduate student living at home may have to spend \$8,000 a year. Depending on where the student lives, and on being a New York State resident, etc., full-time undergraduate costs can run to roughly \$12,000, \$15,000, and \$19,000 a year. Graduate costs show similar variation. Medical and dental student costs can vary from a low \$20,000 to over \$35,000, but these higher costs are exceptional as very few of these professional students are New York State residents. Even part-time attendance costs can amount to over \$8,000. When the Summer Sessions costs are added, as discussed in Part II-C, the total student costs amount to over \$200,000,000.

4. How Do Students Pay for Their Education?

Tuition Aids, Loans, University Employment, Family, and Other Help

The comment is often made that public higher education is much more affordable than private university costs. This may be so, but reference to the data just shown, with the least expensive cost at almost \$8,000 for a Long Island commuter student living at home and, with most students paying considerably more, testifies that even public higher education is not inexpensive.

How do the students get money to pay for their education? There are some known sources and amounts of money coming from each. There are tuition aids from Federal and State governments, plus graduate grants and University awards. There are loans. There is undergraduate employment at the University. Beyond this point, savings for college, family, other employment, and other sources must be used to secure the needed monies. While the total of this additional needed money can be estimated, the contributions from various sources are not known.

Analysis of these data will allow one added fact to emerge. Knowing that student costs are at \$200,000,000+, estimation and subtraction of the components of these costs that are already in the University budget data, shows the additional monies that must be brought in by the students. This addition adds to the revenue stream brought in by the University.

Student Aid

Students receive money from and because of their University attendance in many ways. At the graduate level they may get it in terms of fellowships, as research, teaching, and graduate assistants. At the undergraduate level there are a number of Federal and State scholarship grants. Within the University there are many types of awards, and there are a number of Federal Work Study programs. However, when the sources of these funds are examined, relatively little of the money has not already been counted among other revenues that the University has received.

In 1997-1998, graduate students received almost \$13,200,000 in various forms as Figure III-3 shows. The appropriations for fellowships and teaching and graduate assistants were part of the State appropriation to the University. Practically all the research assistant funds came out of grants, monies that were in Research Foundation accounts. Thus the University revenue for these positions had already been counted.

There was another \$21,756,000 in undergraduate aid secured through Federal and State scholarships and grants, a variety of Federal Work Study programs and other Federal aids, plus a number

Figure III-3**Student Financial Aid and Loans,
University at Stony Brook, 1997-1998****Paid to Undergraduate Student Account**

State Scholarship/Grants	\$ 10,422,406
Federal Scholarship/Grants	9,557,801
University Institutional	558,952

SUB TOTAL **\$ 20,539,159**

Paid to Undergraduate Student Directly

Federal Work Study	1,019,184
Other Federal to Student	118,608
Miscellaneous Student Earnings	79,256

SUB TOTAL **\$ 1,217,048**

Graduate Salary/Stipends

Teaching and Graduate Assistants	\$ 6,982,200
Research Assistants	4,691,800
Fellowship	1,512,800

SUB TOTAL **\$ 13,186,800**

STUDENT FINANCIAL AID TOTAL **\$ 34,943,007**

STUDENT LOANS TOTAL **\$ 28,048,395**

Sources: University at Stony Brook, Financial Aid Office and Graduate School Finance Office

of University institutional grants. Of these, only the Federal Work Study income and revenue of another minor program consisted of money paid directly to the students and not to the University. More than \$20,500,000 of this revenue had already been recorded in the revenue received from the State or counted with the tuition revenue received or were part of funds received through the Stony Brook Foundation, etc.

When the total of the student aid that the University receives directly is subtracted from the total credited to the students, only \$1,200,000 remains that has not already been counted among the revenues as shown in Figure III-3.

Student Loans

As Figure III-3 also shows, loans to students through various Federal programs totaled over \$28,000,000.

Student Employment

With well over 20,000 persons taking courses at the University, what does it take in staffing to support the large variety of course offerings and

services provided? In looking at this, note that not only students are involved, but the thousands of patients who come to the Hospital, the hundreds of business firms and personnel assisted, the government organizations at Federal, State, and local government levels who contract and work with the University, nonprofit organizations, and other universities as well.

In the fall of 1997, a personnel snapshot of the University showed almost 11,300 persons on the State and Research Foundation payrolls; 7600+ full-time and 3,600 part-time (see Figure III-4). There were, in addition, during the 1997-1998 academic year, another 550 persons employed through the operations and University service contracts of the Faculty Student Association. The total came to almost 11,850. A residential origin survey of those on the State payroll showed that 90% lived in Suffolk County, with small percentages in Nassau County and New York City (see Figure III-5).

In these data the employment for graduate students and their resulting income was seen in terms of tuition aid for research assistants, teaching assistants, graduate assistants, etc. Refer to Figure III-3. What was not seen was the number of

Figure III-4

Number of Employees on State and Research Foundation Payrolls, Campus Location and Full- and Part-Time Status, University at Stony Brook, Fall 1997

General Campus	State Payroll			RF Payroll			State & RF Total		
	Full-Time	Part-Time	Sub Total	Full-Time	Part-Time	Sub Total	Full-Time	Part-Time	TOTAL
Faculty	665	324	989				665	324	989
Staff	1,957	375	2,332	393	319	712	2,350	694	3,044
Graduate Students		868	868	6	430	436	6	1,298	1,304
SUB TOTAL	2,622	1,567	4,189	399	749	1,148	3,021	2,316	5,337
UH/LISVH									
Faculty	561	132	693				561	132	693
Staff	3,273	705	3,978	806	351	1,157	4,079	1,056	5,135
Graduate Students		23	23	4	106	110	4	129	133
SUB TOTAL	3,834	860	4,694	810	457	1,267	4,644	1,317	5,961
TOTAL	6,456	2,427	8,883	1,209	1,206	2,415	7,665	3,633	11,298

Source: University at Stony Brook, Institutional Research
 Note: RF: Research Foundation, UH: University Hospital, LISVH: Long Island State Veterans Home

Figure III-5

Number of State Paid Employees by Residential Location, University at Stony Brook, Fall 1997

Residential Location	Frequency	Percent
Suffolk	8,262	92.4
Nassau	277	3.1
Queens	83	.9
Manhattan	66	.7
Brooklyn	47	.5
Bronx	12	.1
Staten Island	2	.0
Other	188	2.1
TOTAL	8,937	100.0

Source: University at Stony Brook, Institutional Research

undergraduate students employed in various capacities throughout the University and their earnings.

Further inquiry resulted in the discovery that there were over 1,400 undergraduate students employed in the University, earning over \$5,000,000 a year (see Figure III-6). The undergraduates employed through State and Research Foundation payrolls appeared in the total of those employed in Figure III-4. However, their earnings were not given in that table and now are shown in Figure III-6. The FSA data also were not shown in Figure III-4, but are now shown in Figure III-6.

5. Added Student/Family Revenue

There are three results that emerge from these data. First, with total student costs at \$200,000,000+, and \$137,000,000+ of these already embodied in the University budget, students, their families, and their relatives needed another \$63,000,000 to pay for University education in 1997-1998. This amount is 34% higher than the indicated need in 1993-1994. In part, this increase arose from the larger number of students, but as shown in the sections dealing with student costs, a large part arose from increases in tuition, fees, and housing costs.

Second, this \$63,000,000 is an increase in the amount of revenue generated by the University's presence. Whether it comes from loans to students—which have to be paid back over time—or work that students do, or from family or personal sources, is immaterial.

Third, in terms of dealing with the total of \$167,000,000—\$200,000,000 total cost less \$33,000,000 in grants, scholarships, and awards—the students, through their own efforts and assumptions of responsibility, raised over \$34,000,000 with loans and work at the University. Undoubtedly many worked at other times and places, during intersessions and summers, to make more money for this purpose, but information thereto was not readily available.

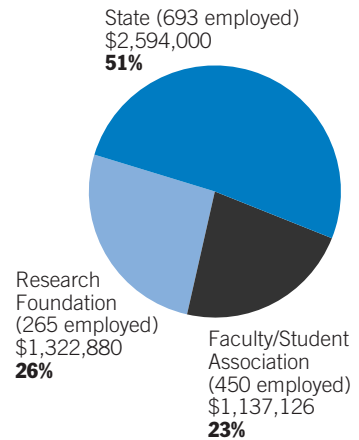
B. Stony Brook Retiree Income

For 1997, State and local government employment in Nassau and Suffolk Counties averaged 157,300. In November of 1997, the number of full- and part-time employees at the University at Stony Brook was 11,300, slightly over 7% of the State and local government total. While many Stony Brook employees were not members of the State civil service and/or pension system, this was also true of employees in the other colleges and universities in the State system and for many employees in local government. For example, many teachers employed by the Boards of Cooperative Education in both counties are only part-time workers and not members of the State retirement system. Yet the relatively large proportion of part-time employees at Stony Brook, about 32% of total, indicates that 7% would be too large a figure on which to base estimates of the amount of pension and Social Security income contributed by resident Stony Brook retirees to the Long Island economy.

Conversely, use of only Social Security and the State pension income constitutes an understatement of retiree income. Most faculty and Research Foundation retirees are members of the TIAA-CREF system which, at least in the 1990s, provided higher benefits than the State retirement pensions. Further, many retirees had other income supplements from investments and part- or full-time jobs that are not reflected in Social Security and State pension data. Given these unknowns and variables, the choice was either saying nothing about Stony Brook retiree income contribution to the Long Island economy, or of using known data to provide an estimate of such

Figure III-6

Undergraduate Employment and Earnings by Payroll Source University at Stony Brook, 1997-1998 Academic Year

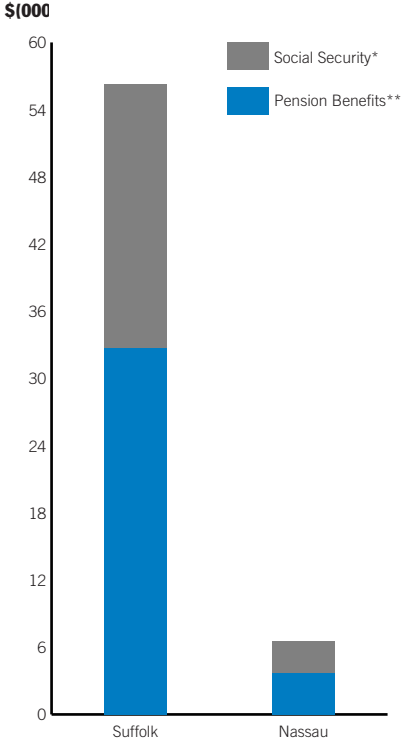


Total Employed: 1,408
Total Earnings: \$5,054,006

Sources: University at Stony Brook, Payroll Office and Faculty Student Association

Figure III-7

Estimated New York State Pension Benefits and United States Social Security Payments to University at Stony Brook Retirees in Nassau and Suffolk Counties, 1997



Total Benefits: \$62,816,742

Estimated Nassau Retirees: 261

Estimated Suffolk Retirees: 2,348

Source: University at Stony Brook, Center for Regional Policy Studies

* Source: United States Social Security Administration, Office of Research, Evaluation and Statistics, OASDI Beneficiaries by State and County, 1997

**Source: Derived from New York State Comptroller, New York State and Local Retirement Systems, 1998 Annual Report

contribution. On consideration, it was felt that the probable overestimate of the proportion of retirees from the University would be somewhat compensated by the underestimate of total retiree income due to omission of investment and job income for these retirees, in addition to the omission of the higher benefits provided for TIAA-CREF members. Thus, while the results reported here cannot be gauged as completely accurate, they are nevertheless plausible.

Using this rationale, the results are as follows. University data show that roughly 90% of Stony Brook's employees are Suffolk residents. This percentage was applied to the 2,609 estimated retirees, yielding 2,348 from Suffolk and an assumption that the remainder essentially were from Nassau and New York City.

Data furnished by the New York State Comptroller's office and the United States Social Security Administration yielded the following results when combined with the data on retiree numbers. There were 37,276 retirees receiving State pensions living in Nassau and Suffolk Counties. Seven percent of this figure provides an estimate of 2,609 retirees from the University.

The total State pension benefits come to more than \$36,400,000. The Social Security payments come to more than \$26,400,000. The combined total is more than \$62,800,000.

This figure is roughly 42% higher than the 1993-1994 total of \$44,116,000. In part, the difference arises from higher Social Security payments. It also arises from increases in length of life, plus higher salaries earned by retirees of the State pension system as a basis for pension payments. As noted, the number of retirees imputed to the University may be somewhat high. Since no other income is imputed to the retirees or included in this total, this is a reasonable datum to use in estimating Stony Brook retirees' contribution to the bi-county economy.

PART IV: UNIVERSITY ECONOMIC DEVELOPMENT PROGRAMS

In the past decade, while the defense industrial effort has had a major decline as a mainstay of the regional and State economy, five important economic development efforts have been centered at the University. These programs have begun to make measurable contributions—to the State, the region, and the University—that far outrun their costs, and are developing market potentials that can have a much larger impact.

The five successful economic development programs at the University are:

1. The Small Business Development Center
2. The Long Island High Technology Incubator
3. The Center for Biotechnology
4. The Strategic Partnership for Industrial Resurgence (SPIR)
5. The Center for Agile Sources of Parts

The fundamental reason for these development efforts is that private industry wants to use, interact with, support, and be supported by the scientific, research, and other expertise is provided by the University.

The dynamics of this interaction should be clearly understood. The University, through its faculty and its students, is a readily accessible resource center. To the extent the faculty are capable and creative, and the students trained to be so, private industry does and will utilize them.

Very often this is done through a joint University-private sector arrangement. Ultimately, these mutual efforts are seen in profits for industry, the creation of jobs, increased earnings for faculty and students, and increased tax revenues for New York State and county and local municipalities.

The Office of the Vice President for Research at Stony Brook estimates that about 70 faculty product or process developments come through its offices each year for exploration with regard to patents, licensing, industrial development, and marketing possibilities. The successful ventures have the potential for substantial returns.

The development of such products and processes to a stage of market introduction and profitability does not occur overnight. Pharmaceutical products, for example, can take years from a development stage through Food and Drug Administration testing, until a marketing stage is reached, and then full uses and product markets may have to be developed further. Thus, an important requirement is continuity of effort from research and analysis through development and marketing.

A sixth opportunity for significant economic growth is the recent creation of the second Center for Advanced Technology (CAT). The first was created in 1982 at the Center for Biotechnology. The University will receive \$1 million annually for ten years to establish this CAT.

The College of Engineering and Applied Sciences (CEAS) has been designated to host the Center for Emerging Electronics, Materials, and Photonic Technologies for Diagnostic Tools and Sensor Systems, with the University at Albany's Center for Advanced Thin Film Technology as its partner in the project. The Center will expand opportunities for New York State businesses to create numerous high-technology jobs on Long Island and around the State, and is expected to develop new technologies and products that will lead to the creation of 1,500 jobs and \$75 million in new business opportunities.

The overall 1997-1998 results of these economic development programs are shown, as information was available, in Figure I-4. There were close to 260 firms involved. A business volume of over \$180,000,000 was produced, with 2,900 jobs created and another 300 saved. Known investments in business from the private sector were over \$22,200,000. State investment in business was \$2,700,000+. The cost to the University for sponsoring these activities was \$2,220,000, with almost all of it coming from State sources.

A. The Small Business Development Center

The Small Business Development Center at Stony Brook is one of over 20 such centers in New York State, with strategic sites located at each of the

Figure IV-1

**State of New York Business Development Center,
Stony Brook Center, Counseling Statistical Summary
Between 12/1/88 and 10/27/98**

Funding/Investment	Amount
Banks/Commercial Lenders	\$ 23,300,664
Equity Cash	16,280,558
Small Bus. Admin.	12,229,758
Equity Collateral	10,078,067
Private Investor	8,784,007
SBA DELTA Loans	1,100,000
Government Contracts	1,057,500
Venture Capitalist	775,000
Local Dev. Corp.	442,100
Voc. Educ. Svcs. for Ind. W/Dis.	285,630
NYBDC	200,000
Surety Bond	150,000
UDC - Minority RLF	105,000
Indus. Dev. Agency	60,000
Econ. Dev. Admin.	38,400
Technology License	26,000
HUD Dev. Block Grant	0
Farmers Home Admin.	0
Science and Technology Foundation	0
Job Development Authority	0
Urban Development Authority	0
Employee Skills Grant	0
Revolving Loan Funds	0
Indus. Rev. Bonds	0
Excelsior Linked Deposit Programs	0
D.O.T. Loan/Bond Programs	0
Other	3,900,165
TOTAL	\$ 77,712,849

Job Impact

Jobs Created	1,814
Jobs Saved	671
TOTAL	2,485

Areas of Counseling	Clients
Start-up	3,031
Business Plan	1,531
Sources of Capital	1,023
Marketing	522
Financial	145
International Trade	107
Business Expansion	67
Accounting	49
Invention Assessment	23
Procurement	21
Personnel	17
Technology Transfer	13
Computer	10
Engineering	9
Home-Based Business	9
Legal	9
Business Sale	8
SBIR	5
Inventory	2
Other	93
TOTAL CLIENTS	6,694
COUNSELING HOURS	59,054.3

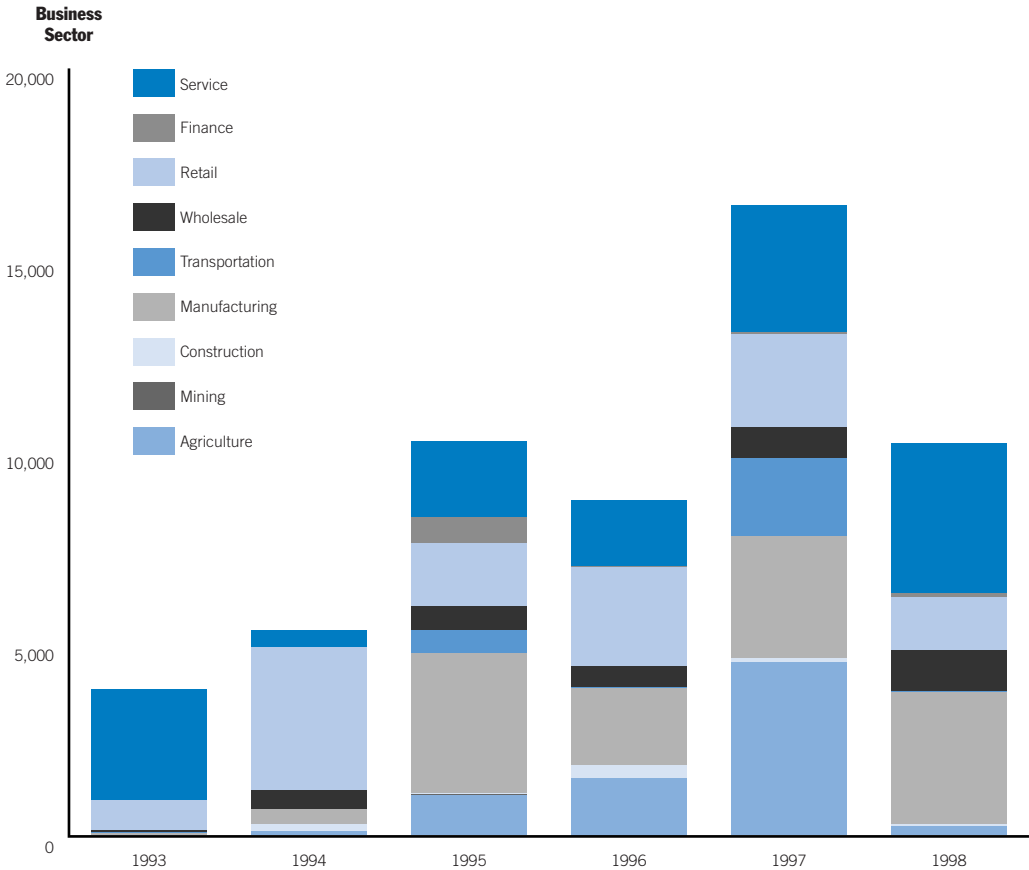
Source: University at Stony Brook, Small Business Development Center

four State Universities. It has existed at Stony Brook since 1988 and provides no-cost counseling on business plans, sales prospects, management, securing funds, etc., for those intending to start small business enterprises or expand existing ones. The Center estimates that in the ten years of existence, its activities have helped in saving 671 jobs and creating 1,814, a total near 2,500. This

Figure IV-2

Funding Impact of Stony Brook Small Business Development Center by Business Sector, Calendar Years 1993-1998 (\$000)

Business Sector	Year					
	1993	1994	1995	1996	1997	1998
Agriculture		\$ 92	\$ 1,020	\$ 1,485	\$ 4,494	\$ 215
Mining			45			
Construction		202	25	323	106	66
Manufacturing	\$ 50	366	3,646	2,010	3,176	3,452
Transportation	11	17	593	38	2,049	5
Wholesale	55	481	630	537	786	1,068
Retail	798	3,725	1,645	2,586	2,433	1,406
Finance			673	5	45	85
Service	2,889	465	1,989	1,735	3,308	3,910
TOTAL	\$ 3,803	\$ 5,348	\$ 10,266	\$ 8,719	\$ 16,397	\$ 10,207



Source: University at Stony Brook, Small Business Development Center at Stony Brook

amount is a notable increase over the 1993-1994 total of approximately 700. The overall level of investment involved with these activities in the past decade is estimated at more than \$77,700,000 (see Figure IV-1).

The intensification of Center activities in the last few years is evident during 1997-1998. In that year, 90 jobs were saved, 476 created, and more than \$21,500,000 was invested. Analysis shows that from 1995 to 1998, there has been a sustained rise in business investment with the largest components in manufacturing and business and personal services (see Figure IV-2). Of the monies invested in 1997-1998, more than \$18,350,000 came from private investment, \$3,000,000 from the Federal government, \$50,000 from New York State, and \$60,000 from local governments (see Figure IV-3).

The Center received \$165,000 from the Federal Government and \$196,000 from the State in 1997-1998. In addition, the salary of the Director is paid by the University. If the entire SBDC budget is regarded as a government investment, the amount of business investment generated from all sources is close to 50 times the agency's budget. The private investment component alone has generated investments of almost 42 times the agency's budget.

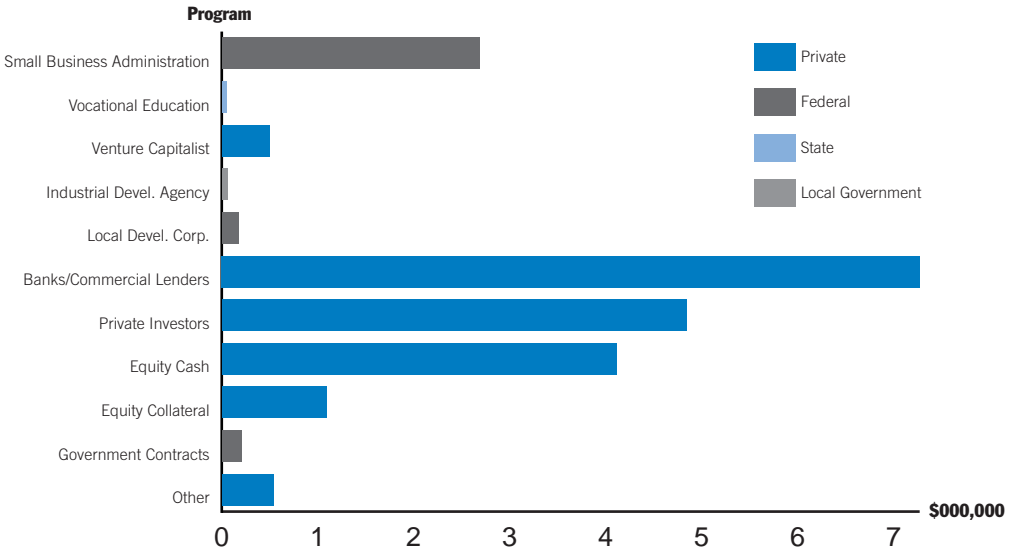
B. The Long Island High Technology Incubator

The Long Island High Technology Incubator program was started in 1987 utilizing available University space. Subsequently, with the aid of State grants, a loan from the Urban Development Corporation, a bank mortgage, and a private manufacturing grant, facilities were built on University grounds in 1992. The Incubator is now a self-sustaining operation on a budget of about \$1,000,000 a year, paying the University for power, and for its mortgage principal and debt and operating costs.

The importance of the Incubator is its provision of below market rental space combined with easy access to and for University staff, and the use of its conference and meeting room and business equipment. These conditions provide a more affordable environment for researchers and individuals trying to develop a business.

Figure IV-3

**Sources of Information for Small Business
Administration Clients by Program and Source
July 1, 1997 - June 30, 1998**



Total Private: \$18,355,428
Total Federal: \$3,071,050
Total State: \$50,000
Total Local Gov't.: \$60,000

Source: University at Stony Brook, Small Business Development Center

Since the time of its inception, five types of opportunity have been developed between the Incubator and tenants. The first is for tenants who need space for initial product research and development. A second consists of tenants who are not physically located in the Incubator, but are on University grounds. A third type consists of anchor tenants who have started in the Incubator and then elected as graduates to stay on campus with a long-term relationship. A fourth consists of Incubator Without Walls tenants, who are mainly persons attempting research, perhaps at home or in other small quarters, but wish to make use of facilities and equipment. A fifth consists of graduates, those who started in the Incubator and have since left and gone on to develop successful businesses.

The Incubator and campus tenants currently have about 100 employees. The graduates, including

the anchor tenant have 415 employees, and those in Incubator Without Walls status consist of about ten people. The graduates report an annual revenue of \$115,000,000 from their business operations.

Remaining in the Incubator are a number of other small tenants, 37 in all, with 72 employees. There are another seven companies on campus with roughly 25 employees and perhaps ten more employees among those in the program for Incubators Without Walls. In summary, after the loss of 350 jobs with the move out of Creative Technologies staff, the Incubator effort has resulted in the creation of an equal number of new jobs. At this time, nine of the Incubator tenants have received aid from the Center for Biotechnology, and a number have also been working with the Strategic Partnership for Industrial Resurgence (SPIR).

C. The Center for Biotechnology

The Center for Biotechnology (CFB) provides a vital link between the biomedical industry and a statewide network of research, business development, and educational resources. The CFB is funded by the New York State Science and Technology Foundation (NYSSTF) in partnership with the University at Stony Brook, and supports innovative biomedical research projects in cooperation with the biotechnology industry in New York State.

In the 1993-1994 Economic Impact study, the Biotechnology Center was listed as providing over \$5,400,000 in investments with \$970,000 coming from State funds, resulting in the creation of over 500 jobs. For the 1997-1998 academic year, the level of investment was lower, about \$4,500,000 in total, again with \$970,000 coming from the State. The number of jobs created since the Center's inception as a result of its activities has risen to 1,500, with more than half (842) in New York State.

Corporate revenues related to Center initiatives exceeded \$134,000,000 for the 1997-1998 fiscal year. These arose from initiatives related to both the Center and uses of Long Island High Technology Incubator services. About 70 companies with

approximately 100 projects were involved in such initiatives. This combination of Incubator tenancies and use of research services through the Center for Biotechnology has also saved about \$15,500,000 for these companies.

The importance of these activities for the future of Long Island and the State was revealed in a recent study administered through the Center, *New York's Evolving Bioscience Technology Industries*, prepared by Kevin Willoughby. A further indication of the CFB's impact is seen in the increase in the number of biotechnology firms in New York State from 90 to 140 in the last five years, an increase of 55%. The impact on Long Island has been even more pronounced. The number of biotechnology firms has increased from 28 in 1991 to 47 in 1996, an increase of 68%. Furthermore, the Long Island region is home to 31% of all biotechnology firms in the State, the largest share of any region. Seven patents and five license agreements resulted from Center-funded projects in 1997-1998. Total direct employment by biotechnology firms within New York State is estimated to be just over 6,500 jobs. Ignoring employment multiplier effects, this represents greater than 60% growth in direct industrial biotechnology jobs over the last five years.

The successes, in part, are attributed to the creation of the CAT for Medical Biotechnology in 1982, making the University the only campus in New York State with two CAT Centers.

D. The Strategic Partnership for Industrial Resurgence (SPIR)

In 1994 the SPIR program at Stony Brook was in its infancy. It was established as part of a four-campus statewide effort—at Stony Brook, Buffalo, Binghamton, and New Paltz—to use the engineering resources of the SUNY system for helping State industries compete more effectively. In its first year at Stony Brook, the program, with a State investment of \$450,000, had 42 projects involving faculty support and research for private industry, resulting in an increase in business volume of \$65,600,000 and an employment gain of about 500 jobs, and the retention of another 50 jobs.

Figure IV-4

**SPIR Project Activity
University at Stony Brook 1997-1998**

Activity	
Companies	66
Projects	129
Industrial/Federal Funding Contributions	
Federal Funding of New Business	\$ 31,400,000
Federal Funding of Projects	6,533,359
Industry Cash	1,898,147
Industry Equipment	556,537
Industry In-Kind	495,850
TOTAL	\$ 40,883,893
Job Impact	
Jobs Created	1,090
Jobs Retained	135
TOTAL	1,225

Source: University at Stony Brook, SPIR Strategic Partnership for Industrial Resurgence, Final Report July 1, 1997 to June 30, 1998

In the 1997-1998 year, there were 129 projects operating through SPIR involving 66 New York State companies. The job creation totaled almost 1,100 with another 135 jobs retained. These results were achieved with an \$815,000 State investment. The development of these projects was enhanced by the SPIR faculty and students at the University who were successful in securing Federal funding of more than \$6,500,000, plus industry investments of close to \$3,000,000. These SPIR activities generated new business funding of \$31,400,000 supplied to Long Island companies by the Federal government (see Figure IV-4).

The current and potential importance of these activities to Long Island is best seen by providing two added perspectives: the cumulative impact of SPIR since its inception, and examination of the networks of University functions and business relations in which SPIR operates. There were over 430 projects conducted with over 100 different companies from inception through the four-year period. New Federal funding to New York State, aside from the Federal funding of new business, totaled over \$45,500,000. Industry provided a \$7,363,000 investment. The State investment through SPIR totaled \$3,185,000. The potential

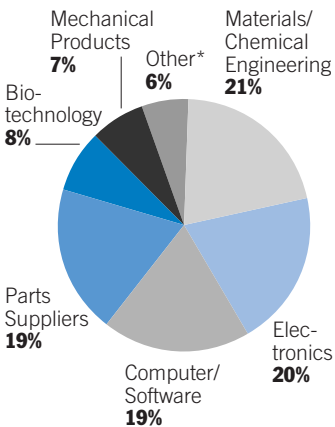
jobs created were over 3,900 and jobs retained were over 700. In view of the loss of many thousands of jobs and millions of dollars in Federal support for Long Island's economy associated with the winding down of defense spending on Long Island, especially the loss of Grumman's aerospace activities, these SPIR activities take on added importance.

These accomplishments are in very large measure derived from the function of the University as a whole, in interactions with many of its components: the research initiatives of the faculty funneled through the Research Foundation, as they are successful and find their way partially through University economic development operations; the licensing and patent operations of the Office of Technology Licensing and Industry Relations to protect the intellectual property rights of inventors and the licensing rights of business organizations; the Long Island High Tech Incubator providing a nurturing environment in which further research and/or developmental operations can move ahead. And SPIR has been involved with many of these Incubator projects and with some of those at the Center for Biotechnology as well. Faculty in the College of Engineering and Applied Sciences have formed partnerships with New York companies or consortia to develop proposals for Federal and other funding, in addition to providing technical assistance for many of these companies. Top students in the University have worked on the cutting edge of engineering and applied science problems related to these enterprises and often receive internships which led to postgraduate employment as well.

In many ways these activities are at the forefront of relations between science and the business community. The importance of this fact should not be underestimated, and the following is one proof. In the attempt to secure information on the economic development program, the statement was made that it was difficult to classify the ongoing research-industrial relations activities because the United States Census Standard Industrial Classification system did not adequately

Figure IV-5

Industrial Classification of SPIR Projects, University at Stony Brook 1997-1998



* Includes Educational Technology, Energy and Environmental Engineering

Source: University at Stony Brook, SPIR Strategic Partnership for Industrial Resurgence, Final Report July 1, 1997 to June 30, 1998

describe, separate, and classify the kinds of activities going on. Shortly after this statement was made, a new industrial classification system, called the North Atlantic Industrial Classification System for the United States, Mexico, and Canada, was delivered to the University Library. This new system centered on manufacturing categories, which numbered 20 in the old system. In the new system, they have increased to over 30.

Examination of the industrial classifications of projects in the SPIR program shows the extent to which they were representative of these new types of industry (see Figures IV-5 and IV-6).

To achieve these results of supporting the attempts of Long Island business to stay on the competitive edge of the economy, it was necessary to support SPIR, the Center for Biotechnology, the Small Business Development Center, and other activities with faculty, students, buildings, and equipment. Without this support, the effort could not have been made.

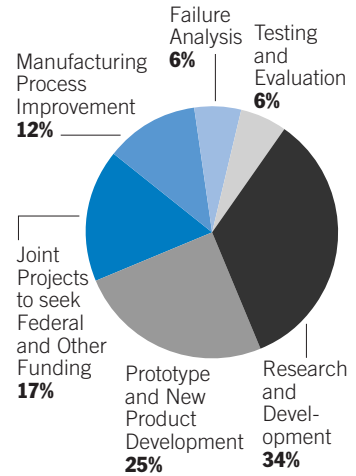
Further, while the popular impression of progress centers on computers, information communication networks, and big business acquisitions, these data point to a panorama of projects dealing with the great variety of activities through which the effectiveness and efficiency of the nation's business is being advanced. These range from genetics, health products, procedures, and equipment to materials testing and research, from information processing to environmental protection, and more. Stony Brook stands as an emerging focus of such effort, with a combination of institutional, organizational, and personnel resources that no other single agency has. While the leadership of the University has made this possible, State support has been and continues to be essential.

The following start-up companies have been assisted by the SPIR program and, in many cases, have been introduced to the Long Island High Technology Incubator since the inception of the SPIR program:

- Alchemetal Corporation
- AM-Saras, Inc.
- Argonaut Group

Figure IV-6

Classification of SPIR Projects by Type of Activity, University at Stony Brook 1997-1998



Source: University at Stony Brook, SPIR Strategic Partnership for Industrial Resurgence, Final Report July 1, 1997 to June 30, 1998

Brookhaven Technology Group, Inc.
Flame Spray Industries
Integrated Fiber Optics Systems
Luxwell Corporation
Medicine Rules, Inc.
Multivariate Decision Processes
Nanoprobes, Inc.
Omni Corder Technologies
OmniTek Research & Development, Inc.
Photonics Industries International, Inc.
Plus Ultra Technologies
Poly Therm Corporation
Powercell Corporation
Quantum Research & Technologies
TNT Information Systems

E. The Center for Agile Sources of Parts (CASP)

The Center for Agile Sources of Parts began in 1996 as a SPIR project collaboration between the Computer Science Department and Dayton T. Brown, Inc., which provided the start-up funding. The reason for the program was as follows.

The demise of major defense contractors on Long Island resulted in the loss of important information about the suppliers of many military parts still essential to the Armed Services. Through CASP, the Computer Science Department developed innovative programs in data cleaning and data mining to help locate hard-to-find spare parts. CASP catalogs and matches the interchangeable parts produced by different companies and also matches the characteristics of a rare part with the manufacturing capabilities of participating companies. Other programs allow engineers to collaborate in the design of tools over the Internet. “Workflow management” programs promote the efficient operation of this largely Internet-based “virtual organization.”

Over 70 local companies now work with the Center. The manufacturing work brought in through CASP has given a needed boost to small and medium-sized companies that lost a substantial amount of business as the major defense

contractors downsized or left the Island for other areas of the U.S.

As a result of this program, in the last year the Department of Defense has bought over \$18,300,000 worth of spare parts from Long Island companies. The continued use of these companies for producing and supplying spare parts to the military has helped a bit in softening the blow from the demise of major defense contractors on Long Island. Below is a list of companies involved in this effort.

Action Machined Products Inc., Copiague, NY
Advanced Aerospace Machining, Farmingdale, NY
Aerodyne Controls Corp., Ronkonkoma, NY
Aeroflex Laboratories Inc., Plainview, NY
Aerospace Avionics, Inc. (AAI), Bohemia, NY
Aero Specialties Corporation, Deer Park, NY
Alken Industries, Inc., Ronkonkoma, NY
Alnitak Corporation, Sarasota, FL
Ark, NY Inc., Speonk, NY
Arkwin Industries Inc., Westbury, NY
B&B Precision Components, Inc., Brentwood, NY
Beryllium Manufacturing Corp., Amityville, NY
BH Aircraft Co., Inc., Farmingdale, NY
Bill Jay Machine Tool Corp., Ronkonkoma, NY
BJG Electronics, Inc., Ronkonkoma, NY
Catalina Instrument Corp., Plainview, NY
CDM Dynamics, Inc., St. James, NY
Central Machining Specialties, Inc., West Babylon, NY
Centroid, Inc., Syosset, NY
Controlled Castings Corp., Plainview, NY
CPI Aerostructures, Inc., Edgewood, NY
Davis Aircraft Products Co., Inc., Bohemia, NY
Dayton T. Brown, Inc., Bohemia, NY
Decimal Industries, Inc., Copiague, NY
Dorne & Margolin, Inc., Bohemia, NY
Dunrite Systems, Inc., Ronkonkoma, NY
East/West Industries, Inc., Ronkonkoma, NY
EMS Development Corporation, Yaphank, NY
Ferraro Manufacturing Inc., Farmingdale, NY

Frequency Electronics, Inc., Uniondale, NY
Frisby Aerospace Inc., Freeport, NY
Gap Instrument Corp., Yaphank, NY
General Mechatronics Corp., Farmingdale, NY
General Microwave, Amityville, NY
Hicksville Machine Works Corp., Hicksville, NY
Howe Machine & Tool Corp., Bethpage, NY
Hughes-Treitler Mfg., Corp., Garden City, NY
Image Analytics Corp., Hauppauge, NY
Inscom Electronics Corp., Freeport, NY
J.A.M. Precision Metal Products, Inc.,
Copiague, NY
Kinemotive Corporation, Farmingdale, NY
Krug Precision, Inc., Port Washington, NY
Lockheed Martin Microwave, Hauppauge, NY
Marks Polarized Corporation, Hauppauge, NY
Metavac Inc., Holtsville, NY
Micro Hybrids, Inc., Medford, NY
Minutemen Precision Machines,
Ronkonkoma, NY
Monitor Aerospace Corp., Amityville, NY
Motor Magnetics Corporation, Farmingdale, NY
NAASCO Northeast Corp., Shirley, NY
Norco Tool Grinding Inc., Farmingdale, NY
North South Machine Shop, Inc., Hempstead, NY
P&G Aerostructures, Inc., Bay Shore, NY
Parker Hannifin Corp., Smithtown, NY
Philip L. Stanger, Malverne, NY
Precision Gear Incorporated, Corona, NY
PV Tools Co., Westbury, NY
Richard Manno Company Inc., West Babylon, NY
Rodale Electronics Inc., Garden City, NY
Russell Plastics Technology Co., Inc,
Lindenhurst, NY
SAS Industries, Inc., Manorville, NY
Select Controls, Inc., Bohemia, NY
Stydd Systems Inc., Greenport, NY
Superior Electromechanical Component
Services, Inc., LIC, NY
Tek Precision Co., Ltd., Deer Park, NY
Telephonics Corporation, Farmingdale, NY

Tempo Instrument Inc., Commack, NY
TRP Machine Co., Ronkonkoma, NY
Unexcelled Castings Corp., Hauppauge, NY
US Air Tool, Ronkonkoma, NY

F. The Technology Learning Center

The Technology Learning Center works in collaboration with the University at Stony Brook's SPIR program. The Center offers state-of-the-art programs of graduate instruction and professional study tailored to the specific needs of domestic and international industry. It operates on campus and also conducts teaching seminars and courses at company locations on Long Island. A great deal of its work is computer-related, and it offers graduate programs in the College of Engineering and Applied Sciences. About 50 students per year have been placed in companies involved with the Center, and another 50 students are involved in Center programs at the University. Seminars and conferences are also held at the University. Since inception of the program, the Center has developed contacts with major Asian companies, which have sent executives and other staff to Center programs and meetings. In recent years, three such groups from China have come to the Center and a fourth is expected this year. The Center is self-supporting with a budget of about \$200,000 a year. There is no State investment in the Center's activities.

PART V: CONCLUSION

Four years ago, Stony Brook and the State University system were faced with the possibility of a 30% cut in State aid. A study of Stony Brook's economic impact showed that the results would have been catastrophic in many ways. The University's educational system and research efforts would have been cut to pieces. Thousands of students in Suffolk, Nassau, and New York City would have been adversely affected by reductions in university seats available because of reduced financing. New York City's higher education system would have felt the effects because of increased demand from city students no longer able to attend Stony Brook. University Hospital services and patient care programs would have been curtailed or not undertaken. Stony Brook's economic development efforts, and its faculty contributions to New York State and Long Island business, would have been greatly diminished by losses in leading faculty, in research programs, and in the staffing necessary to assist in development efforts. With these losses of jobs and development, Long Island's economy would have suffered, and its ability to provide surpluses for financing upstate education and government would have been seriously reduced.

Four years later, another study shows that there has been increasing efficiency in the use of resources, accompanied by increases in use of the University's enrollments and the Hospital's medical services and patient loads. In the face of these gains in University operations, there has been a reduction in State aid, without any account taken of an inflationary rise of almost 10% in costs.

The difference in efficiency can be seen by comparing the totals of revenue collected in State aid for 1997-1998 and 1993-1994. All revenue generated by the University from all sources in 1993-1994 were in a ratio to State aid of 3.76. In 1997-1998, they were 5.1. All University campus revenues to State aid ratios were respectively 3.10 and 3.90. The operating budget ratio for 1993-1994 was 3.18 compared to 3.83 in 1997-1998 (see Figure V-1). With this increase in staff and faculty efficiency, as the data show, student costs rose from \$175,000,000 to over \$200,000,000, a 14.5%

rise. The number of students enrolled for credit rose from 17,600 to 18,600, a 5.7% increase.

The overall picture is that the University faculty and staff—including Health Sciences personnel and researchers—plus students and their families were working harder to help the University do its jobs: provide education and medical services, train medical professionals, do research and increase knowledge, add cultural and recreational resources to Long Island that are not otherwise easily accessible, and—looking to the future—provide a strong institutional base for linking research and industrial development to promote Long Island and the State’s economy. In the face of this laudable effort, the State’s response was to pull back on its support.

Figure V-1

Comparison of Ratios of Total Revenue Generated to University at Stony Brook State Aid, 1993-1994 and 1997-1998

	1993-1994			1997-1998		
	Revenue	State Aid	Ratio	Revenue	State Aid	Ratio
Revenue Generated by All Sources	\$ 886.2	\$ 278.4	3.18	\$ 1,047.0	\$ 273.1	3.83
Total University Revenue	795.1	256.1	3.10	922.5	236.7	3.90
Operating Budget Revenue	707.5	188.0	3.76	845.0	165.2	5.12

Source: University at Stony Brook, Center for Regional Policy Studies

This study has brought out facts showing that the University has a major economic role for Long Island and the State. With almost 12,000 employees, it is outranked among nongovernmental organizations by only a few, such as the North Shore-Long Island Jewish Health System—with its eight hospitals—and the Archdiocese of Rockville Center. The University’s contribution to replacing lost aerospace defense jobs has been modest to date, but it has been growing. The list of firms in contact with and using the technical capabilities of faculty and staff involves some of the State’s largest and most productive companies. Thus any long-term deterioration of the University’s position can adversely affect both Long Island and the State’s economy.

An erosion of quality would be felt in loss of first-rate graduate students who come from

abroad and other parts of the country. If University revenue is reduced relatively or absolutely, first-rate faculty are hard to recruit and retaining those who are here is more difficult. The loss of the best is accompanied by loss of the research money they attract, the programs they offer, and the students who come to them.

This loss would be especially devastating in the Health Sciences. The Hospital would suffer with regard to patient care and the development of new programs to take advantage of medical advances. Since the great majority of University Hospital patients are Suffolk residents, the quality of their care is most at risk if there is underfunding.

With the resources available, the University has reached deeply and interactively into Long Island institutions and communities. Health Sciences students, as both trainees and graduates, are in the agencies throughout Long Island and elsewhere in the State. Doctors, nurses, and medical technicians trained at Stony Brook are almost entirely from New York State, and largely from the metropolitan area. The networks of research funding are nationwide and the results thereof are used nationally and at all levels of government. This is a record of achievement with a dwindling base of State support, both absolutely and relatively. Because of this diminution, the record of achievement has been constrained; negative consequences are here now, and will be felt more unless the State's attitude towards the University changes.

Discussions with faculty and staff specifically indicate key areas in which the lack of adequate aid is constraining University operations. A large reduction in fringe benefit payments for the University Hospital has been noted. The Hospital is now about 20 years old, as is much of its equipment. In Radiology, for example, there is dire need of equipment upgrading. A plan for doing this had to be abandoned when the lowering of the fringe benefit payments depleted financial reserves and the Hospital began to run a substantial deficit. The lack of funds for investment also affects the establishment of a better economic foundation and more efficient and effective operations. New programs for home care and rehabili-

tation would diversify and enlarge the revenue base, allowing a fuller range of services. This would not only make the Hospital more competitive with other networks expanding into Suffolk County, but give it a greater degree of economic self-sufficiency. Additionally, given the large expansion in outpatient visits (see page 28), there is need for facility expansion. In addition, there is a proposal for a combined cancer care/emergency service facility which, as yet, does not appear in the University's five-year capital program.

These decisions to defer maintenance and new program investments can be viewed as strictly economic matters in relation to State budget concerns. Still, such withholding can be very costly. Repairing property that is poorly maintained and badly deteriorated is much more costly than practicing proper maintenance in the first place. As the State pays for capital construction, if it wishes to invoke such costs by deferral of expenditures, it can and does do so. This is evident as its budgeting does not provide for depreciation at the Hospital. However, while building and equipment depreciation costs can be deferred if one is willing to pay a future price for doing so, how does one defer the maintenance of health without paying an irredeemable price? This is a question that the State has not answered.

The second key concern centers on the economic development programs at the University. These programs involve faculty, students, research programs, and firms on the leading edge of a highly competitive and rapidly changing economy. The Incubator has a waiting list of would-be tenants. With more investment in space and State aid on mortgage terms, it could accommodate much of the demand, be more selective of tenants, and, perhaps on a selective basis, provide better investment terms to help candidates more likely to succeed.

The Small Business Development Center has expanded its bases of operations with satellite centers. However, some areas of the county are not close to the University, and these are not well served by SBDC. Establishment of additional satellite centers in the southern and southwestern

parts of Suffolk County could fill these gaps. In addition, at all levels, for all programs, investigation could be undertaken on ways to provide more management expertise, especially in relation to securing investments and for marketing products.

The Stony Brook Center for Biotechnology has given eloquent testimony to the importance of State support for the academic development of technologies for use in industry. The Center cited a survey by the Association of University Technology Managers showing:

- \$30 billion dollars of economic activity and 250,000 jobs attributed to academic invention
- 333 new companies formed to commercialize University technologies
- 83% of these new companies located in the region in which the technology was discovered

In a request to expand current programs, the Center provided evidence of how State support of the University of California has spurred growth.

There are now reports, expressions of hope, that State aid to the Hospital will increase and that there will be more money for economic development efforts. Yet, even as such reports circulate, it seems that much of what the State might provide with one hand, will be taken back with the other. In 1993-1994, the tuition fee plus the college fee, the student activity fee, and other required fees for a New York State resident at Stony Brook totaled \$2,995. In 1997-1998, they totaled \$4,140.50, a 38% increase. Now, as hopes for a restoration of aid to the University Hospital circulates, the State budget carries proposals to reduce tuition aid to students, especially to those who do not complete their education in four years. For many students, the reason they do not complete their education in four years is that they are obliged to work to pay their costs for school and for living. Should they be penalized for this?

How does all of this add up? Basic State education charges increased 38% in four years. The amount that parents and students contribute, beyond the charges shown in the University budget, has grown from \$47,000,000 to \$63,000,000,

a 34% increase. Inflation has been responsible for a 10% rise in living costs. The State's budget surplus is projected at \$1.8 billion, and there are arguments that it will be larger. The Governor is quoted as saying, "There is no cut in education spending. . . the SUNY and CUNY budgets are the same as they have been." If this is the case, restored aid to the University Hospital, for example, would be paid in some measure by reduction in aid to students.

Beyond the concern with immediate personal costs, there is another alarming element. The growth of the State University system in the last 40 years was the result of many acts of vision by political and education leaders that brought New York State well into the 20th century. Imagine the State today without the SUNY system. What acts of vision will carry us into the new millennium? A seemingly "stand pat" position—the State University's expenditure being the same—in the face of inflationary costs, is really a formula for gradual retrenchment and slow fiscal starvation. Other states, such as Michigan, are advertising on New York radio about the advantages provided for industry and business. Texas has poured hundreds of millions of dollars into its universities. The evidence of the role of publicly supported higher education in spurring California's growth has been cited above. Can we afford to do less?

ACKNOWLEDGEMENTS

Without the help of the many persons listed below, this study could not have been done. Many have responded repeatedly to requests for information and provided explanations on how things work. They have been patient and informative, and it has been a pleasure to work with them. Several should be mentioned for their special contributions.

Ann-Marie Scheidt has worked with us from the beginning, and repeatedly opened doors so that information could be gathered. Jane Yahil of the Health Sciences Center paved the way so that key people were informed of the study and met with us. Bernard Cooke of the University Hospital Accounting Office responded to many questions about revenue and finances, as did Derinda Pell of the School of Medicine. University Budget Director Mark Maciulaitis came through with key data and explanations. Eileen Dellaposta from Institutional Research provided a wealth of data on students and pointed to others who could give more. In the University Accounting Office, Lyle Gomes and Kathleen Diehl, with unfailing good humor, went through the mysteries of the Income Fund Reimbursable accounts and were equally helpful on other matters. As usual, Robert Schneider was a fount of information and suggestions on where to get more information. As they did four years ago, the persons closely involved with economic development programs, Clive Clayton, Diane Fabel, Jim Finkle, and Judith McEvoy provided insight and explanations as well as information.

Certainly many others deserve thanks, and, to all, this is offered. The list that follows is intended to name all who helped. We apologize for any inadvertent omissions.

—March 1999

President's Office

Stony Brook Foundation

JoAnn Daniels, Senior Accountant

Strategic Planning and Analysis

Daniel Melucci, Associate Vice President

Institutional Research

Emily Thomas, Director

Eileen Dellaposta,
Reporting Coordinator

Budget

Mark Maciulaitis, Director

Marianne Gardner, Assistant Director

Physical Education and Athletics Division

Richard Laskowski, Dean

Kay Don, Managing Director,
Sports Complex

Provost's Office

College of Engineering and Applied Sciences

Yacov Shamash, Dean

Clive Clayton, Director, Strategic Partnership for Industrial Resurgence (SPIR)

Lawrence Noonan, Director,
Budget and Special Projects

Tian-Lih Teng, Director,
Technology Learning Center

Li Shen, Staff Assistant

Small Business Development Center

Judith M. McEvoy, Director

Lucille Wesnofske, Assistant Director

School of Professional Development and Continuing Studies

Paul Edelson, Dean

Jane O'Brien, Assistant Dean

Joyce Wellinger, Budget and Administration

Frank Melville Jr. Memorial Library

Nathan Baum, Technical Services-
Digital Resources Librarian

Jyoti Pandit, Head, Government
Documents Section

Elaine R. Hoffman, Associate
Librarian

Richard Feinberg, Coordinator,
Library Instruction

Graduate School

John P. Schmidt, Assistant Dean,
Finance

Financial Aid and Student Employment

Ana Maria Torres, Director

Staller Center for the Arts

Alan Inkles, Director

Barbara Wien, Financial Director

Summer Sessions

Megs Shea, Director

Research

Center for Biotechnology

Diane Fabel, Deputy Director

Office of the Vice President for Research

Gail Habicht, Vice President

Ann-Marie Scheidt, Director of
Economic Development

Robert Schneider, Director, Infor-
matics and Research Compliance

Office of Technology Licensing and Industrial Relations

John C. Petersen, Director

Health Sciences Center

Norman H. Edelman, Vice
President, Health Sciences
Center/Dean, School of Medicine

Jane Yahil, Assistant Vice President

Maureen Burns, Financial
Administration

Derinda Pell, Associate Vice
President for Finance

Glenn Itzkowitz, Staff Associate

John Riley, Staff Associate

Patricia Marsicano, Administrative
Assistant

School of Medicine

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Graduate Medical Education and
Veterans Affairs

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Chair, Surgery

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Clinical Practice Management Plan

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Lisa Kneisel, Assistant Director,
Financial Affairs

Laurie Norwick, Principal Medical
Practice Plan Administrator

University Hospital

Michael A. Maffetone, Director
and Chief Executive Officer

Dennis Mitchell, Chief Financial
Officer

Jane E. Franz, Associate Director,
Strategic Planning and Business
Development

Arlene Nolan, Senior Planning
Associate, Strategic Planning and
Business Development

Bernard Cooke, Hospital
Accounting Director

Patricia Schery, Supervising
Financial Analyst

Dental Care Center

Carol Sloane, Assistant Dean

Long Island State Veterans Home

I. Bernard Hirsch, Executive
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Jay Thakral, Chief Financial Officer

Administration

Finance

Karol Kain Gray, Assistant Vice President and Controller

Accounting

Lyle P. Gomes, College Accountant

Kathryn A. Larsen, Associate University Financial Analyst

Kathleen M. Diehl, Senior Staff Associate

Property Control

Nancyann Liotta, Administrative Assistant

Facilities and Services

Gary Matthews, Assistant Vice President

Facilities Design and Construction

David R. Kelly, Campus Civil Engineer

Human Resource Services

Kathy L. Griesbeck, Assistant Director

Victoria McLaughlin, Supervisor, Research Payroll

Alexis Swiatkowski, Benefits Manager

Mary Blaszkzy, Administrative Assistant

Andrew Kirsh, Programmer Analyst

Procurement

James W. Fabian, Director of Procurement

Student Affairs

Campus Housing

Alan DeVries, Assistant Director, Housing Administration, Campus Residences

Off-Campus Housing Service

Godfrey Palaia, Supervisor

University-Wide

Faculty/Student Association

Ron Willa, Controller

Warren Wartell, Associate Director, Student Staffing, Marketing

Long Island High Technology Incubator

Carl E. Hanes, Interim President

James Finkle, Associate Director

Other Organizations

United States Social Security Administration

Barbara Lingg

New York State Comptroller's Office

Jeffrey Gordon

Yolanda Meleco

New York State Labor Department

Gary Huth, Associate Economist

New York State Retirement System

Gregory Childs, State Pension System, Director of Member Services

Suffolk County Planning Department

Roy Fedelem

Peter Lambert

**For more information about
the University at Stony Brook,
please contact:**

The Info Center

The University at Stony Brook
Stony Brook, New York 11794

Phone: 631.632.INFO

E-mail: *infocenter@sunysb.edu*

**For more information about this
report, please contact:**

The Center for Regional
Policy Studies

The University at Stony Brook
Stony Brook, New York 11794

Phone: 631.632.9020

Visit the Stony Brook Web site

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Yvette St. Jacques, Assistant Vice
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Howard Gimple and Toby Speed,
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