
Memorandum of Understanding

University at Stony Brook
and the
State University of New York



December 2000

CONTENTS

Market Niche/Distinctiveness	1
Projected Institutional Position and Benchmarks of Success	2
1.0 Enrollment/Admission Selectivity	2
1.1 Enrollment growth.....	2
1.2 Student mix	3
1.3 Recruitment.....	4
1.4 Level on selectivity matrix	4
1.5 Comparisons with selected benchmark institutions	6
2.0 Student Outcomes	7
2.1 Student life	7
2.2 Graduation/Retention rates	7
2.3 Student/Alumni satisfaction	9
2.4 Post-graduate success	9
2.5 Assessment planning.....	10
3.0 Faculty Development and Scholarship	11
3.1 Faculty recruitment	11
3.2 Faculty review, promotion, and tenure	11
3.3 Quality and quantity of scholarship	11
3.4 Comparisons with benchmark institutions	13
4.0 Intercampus Collaboration	13
4.1 Joint academic programs	13
4.2 Articulation.....	14
4.3 Other cooperative activities	15

5.0 Academic Program Directions	15
5.1 Undergraduate	15
5.1.1 General education	16
5.2 Graduate	16
5.3 Health Science Center	18
5.4 Responsiveness to local/regional/state needs.....	20
6.0 Infrastructure and Technology	20
6.1 Facilities	20
6.2 Academic technology.....	21

Market Niche/Distinctiveness
Campus role within SUNY System

The University at Stony Brook was originally established in 1957 as a college for the preparation of secondary school teachers of mathematics and science. In the early 1960s, Governor Rockefeller and the Chancellor and Trustees of the State University designated Stony Brook as one of four SUNY University Centers and charged it with pursuing national prominence. In just over 40 years, Stony Brook has grown in quality, intellectual breadth and stature to the point where its aspiration is to be a world-class, student-centered research university analogous to “flagship” state university campuses across the United States. By several measures it has already achieved this desired status. For example, the National Research Council’s 1995 Assessment of Research Doctorate Programs ranked Stony Brook as the leading public research university in the northeast (§3.4).

The University strives to integrate research into its programs at all levels, providing an undergraduate education that is distinctive from that at liberal arts colleges. Students attend Stony Brook because of its excellence as a research university, and more than a third of all undergraduates engage in research activities across the disciplines during their collegiate experience.

At the master’s and professional certificate levels, Stony Brook’s focus is local and regional; emphasis is placed on the health, biotechnology, information, financial and computer industries in order to respond to New York State needs—in particular the shift in Long Island’s industrial base from defense to technology-intensive businesses. The University attracts a substantial number of self-supporting master’s students and seeks to increase these totals.

At the doctoral level, Stony Brook’s focus is national and international, although its graduates help fill regional needs for faculty and research leaders. Four of Stony Brook’s doctoral programs are the only ones available at a public university in New York State: Astronomy, Biomedical Engineering, Materials Science and Engineering, and Oceanography. Management of the Brookhaven National Laboratory places Stony Brook in the company of research universities such as Berkeley and the University of Chicago. Through its health science center, Stony Brook conducts the latest biomedical and clinical research to advance the science of medicine and related disciplines, and to support world-class patient care. Specialized mission components in Stony Brook’s medical and life sciences enterprise include a Lyme Disease Center, a Cardiac Center of Excellence, the Centers for Molecular Medicine and a Cancer Institute.

Projected Institutional Position and Benchmarks of Success

Over the last forty years, Stony Brook's emphasis has been on building a great research university *ex nihilo*. This effort has been remarkably successful, though of course more remains to be done to achieve this goal fully. Stony Brook's plans for increasing the number of undergraduate students and being known as a student-centered research university are compatible with its capacity and "market forces." More important though, these plans reflect recognition of the importance of undergraduate education, the desire to realize beneficial links between scholarship and teaching at a research institution, and an understanding of the impact of undergraduate students on the current life and future strength of the campus. Stony Brook's aspiration is to be ranked among the top five public universities in the nation in terms of faculty productivity.

Unlike many other state university systems the State University of New York has never designated a single "flagship" campus. However, Stony Brook's values, culture, and aspirations make it comparable, and require that it be viewed as analogous to, flagship institutions in other state systems. Obviously the financial ramifications of the State University system not designating a sole "flagship" present challenges to Stony Brook in living up to its ideals; parallel challenges are also presented to the State University in helping Stony Brook reach its aspirations.

The overarching need, which cuts across—and can potentially block the attainment of—Stony Brook's aspirations, is money. As discussed throughout this Memorandum, raising faculty salaries, improving the competitiveness of graduate student stipends, devoting additional funds to student recruitment, enhancing the undergraduate experience, and providing start-up packages for researchers that will enable them to compete successfully for federal funding are all expensive propositions. Accordingly, beyond seeking additional funding from the legislature whenever possible, Stony Brook looks to System Administration for:

- continued adherence to and support for a budget model that permits the campus to plan rationally and rely upon predictable consequences from meeting enrollment and sponsored research targets.

1.0 Enrollment/Admission Selectivity

1.1 Enrollment growth

Stony Brook has increased its freshman enrollment by 27% from 1996 to 1999. Applications have increased 16.5% during this same period. The University is now close to its current capacity for undergraduate students.

In the next five years, Stony Brook seeks to recruit aggressively students who fall within the "Most Selective" category (§1.4) from the University's traditional markets in Long Island and

New York City (particularly Queens, Brooklyn and Manhattan) and from new markets within and outside of New York State. To reach recruitment and enrollment goals, Stony Brook recognizes the need to increase the central campus resources allocated to recruitment efforts so that staffing and concomitant recruitment activities are on par with peer institutions.

As detailed below, the University plans some modest further growth in undergraduate enrollment. Stony Brook's projected enrollment (including the Health Science Center) is:

	Fall 1999 (actual)	Fall 2000 (approved)	Fall 2001 (planned)	Fall 2002 (planned)	Fall 2003 (planned)	Fall 2004 (planned)
Undergraduate						
FT first	2,248	2,250	2,300	2,325	2,350	2,375
FT transfer	1,432	1,400	1,400	1,405	1,410	1,415
FT Cont/Ret	7,739	8,057	8,264	8,431	8,576	8,696
Total FT	11,419	11,707	11,964	12,161	12,336	12,486
Total PT	1,271	1,272	1,272	1,272	1,272	1,272
Total Undergraduate	12,690	12,979	13,236	13,433	13,608	13,758
Graduate						
FT	3,045	2,845	3,154	3,317	3,509	3,624
PT	3,404	3,763	3,880	3,969	4,037	4,159
Total Graduate	6,449	6,608	7,034	7,286	7,546	7,783
Total Headcount	19,139	19,587	20,270	20,719	21,154	21,541
Total AAFTE	16,154	16,369	16,993	17,401	17,800	18,122

Note: Enrollment goals may be affected by external factors such as changing economic conditions, tuition increases, and fiscal constraints. Official enrollment targets that are the basis for the University's budget model are set annually through dialogue between campuses and System Administration, and may differ somewhat from the above.

- Additional flexibility and faster response time from the System's Application Processing Center will help Stony Brook achieve its planned enrollment growth. System will work with the campus to effect such improvements.

1.2 Student mix

Stony Brook's undergraduate student body is highly diverse with respect to ethnicity and socioeconomic status. 22% of the students in the 1999 entering freshman class were immigrants (with permanent residency status); 22% came from families earning less than \$20,000 per annum; and another 20% came from families earning between \$20-40,000 per annum. That same class included 29.1% Asian (including Asian-American) students; 10.6% African-American students; and 8.5% Hispanic students. Stony Brook regards this diversity as one of its major strengths.

Over the next several years, student demographic characteristics are projected to remain relatively stable with two exceptions: a likely increase in out-of-state undergraduate students (§1.3) and an increase in the proportion of students who initially enroll and then continue at Stony Brook. The University will continue to provide access to quality public higher education for students on Long Island who seek transfer opportunities.

1.3 *Recruitment*

The University's academic reputation (rated among the best universities in the country), vast academic, co-curricular and social opportunities, and location—particularly its proximity to New York City—make Stony Brook an attractive, viable option for students who reside outside New York State. Stony Brook will also become more attractive to both out-of-state and in-state students as its overall selectivity increases (§1.4).

Out-of-state recruitment: Stony Brook has studied the feasibility of launching an out-of-state recruitment effort. The University will endeavor to increase visibility and name recognition through strategies such as student searches, advertising, direct mail, telemarketing, participation in college fairs, and involvement in guidance counselor association activities.

- Recognizing that increasing the number of students from targeted out-of-state markets is likely to require several years of aggressive recruitment before significant and sustained growth occurs, Stony Brook aims to double its enrollment of out-of-state students from 95 in 2000 to 190 by 2003. Out-of-state recruitment will be focused on contiguous and neighboring states (Connecticut, New Hampshire, New Jersey, Massachusetts, Pennsylvania, Rhode Island).

International recruitment: Stony Brook's diverse student body and world-class academic programs should be highly attractive to international undergraduates. Stony Brook is training a second admissions counselor to work with international applicants, and has hired an additional international student advisor to focus on the special needs of such students. Enhanced technology will also enable Stony Brook to recruit more successfully internationally (particularly through the University's web site, electronic inquiry response, and on-line applications).

- Stony Brook seeks to double its enrollment of freshman international students from approximately 40 in 2000 to 80 by 2003.

1.4 *Level on selectivity matrix*

Stony Brook currently falls within the "Highly Selective" level (Group 2) of the undergraduate admissions selectivity matrix. However, the University intends to move to the "Most Selective" level (Group 1) by 2005.

The University's aspiration is to become a national model for undergraduate education in a research university setting, with strong connections between faculty scholarship and student learning, and increased attention and commitment on the part of faculty to undergraduates and their instruction. To this end, Stony Brook will continue and expand recruitment initiatives and yield strategies targeting superior, independent students who can best take advantage of a research university environment. The University has substantially expanded its merit scholarship program, offering more money to more—and better—students. Stony Brook will

continue to increase its merit scholarship pool through both private fund raising and grant support for specific student cohorts (e.g., Honors program; Women in Science and Engineering programs).

The diverse composition of the University's freshman class, particularly the large number of students for whom English is a second language (§1.2), affects the average SAT score of entering Stony Brook students. For example, students admitted to Stony Brook for fall 1998 averaged a 37-point difference between SAT math and verbal scores, as compared to only a 7-point difference for all students across New York State. The campus believes that the math scores of Stony Brook students are better indicators of their ability because verbal scores are so sensitive to the test taker's first language. Furthermore, in its admission decisions the University tries to view selectivity within a broader context that extends to (and tries to measure) the impact of a Stony Brook education on students' intellectual abilities and subsequent careers.

- In order to help achieve its selectivity goals, Stony Brook's five-year plan calls for increasing the mean SAT composite score of incoming first year students by 10 points per year from 1126 in 1999 to 1156 by 2003.

While Stony Brook wants to attract more high achieving undergraduate students, it also seeks to grow several of its student support programs. In particular, the University would like to double the size of its Language Enhancement Program (LEP) from 100 to 200. This program is aimed at students who have strong high school GPAs and SAT math scores but considerably lower SAT verbal scores because English is their second language. The LEP has been quite successful to date, with a large majority of participants consistently making the Dean's List.

Stony Brook's detailed undergraduate admissions selectivity projection (reflecting first-time, full-time enrollees by selectivity group) follows:

		Selectivity Group	Fall 1999 (actual)	Fall 2000 (planned)	Fall 2001 (planned)	Fall 2002 (planned)
Regular Admits who have an SAT Score and a High School Average	Total		100.0%	100.0%	100.0%	100.0%
	In Group 1		24.3%	26.0%	27.0%	30.0%
	In Group 2		41.0%	44.0%	45.0%	46.0%
	In Group 3		29.3%	26.0%	25.0%	22.5%
	In Group 4		4.8%	3.5%	2.5%	1.2%
	In Group 5		0.6%	0.5%	0.5%	0.3%
Special Admits (EOP or Other Risk) as a Percent of Total First-Time Full-Time			11.0%	13.3%	15.0%	15.0%

- Stony Brook also seeks to improve the quality of the graduate (in particular doctoral) students that it enrolls as measured by GRE (or other comparable) scores, national draw, and other appropriate indicia. The campus will work with System Administration

to develop meaningful criteria of progress in this endeavor. Stony Brook hopes to achieve a higher yield among the best students admitted to its graduate programs. Both the campus and System Administration recognize, however, that achievement of the foregoing goals will depend in large part on the availability of more generous stipends.

1.5 Comparisons with selected benchmark institutions

Comparisons with selected benchmark institutions, based on data from the College Board Survey for the 1999-2000 academic year, are shown in the table below:

	SUNY Stony Brook	University at Buffalo	SUNY Binghamton	New York University	Rutgers	Penn State	U Calif San Diego
FT Undergraduate Enrollment	10,917	13,256	9,134	15,161	10,321	32,482	15,837 ³ (FT + PT)
Acceptance Rate	54% ¹	71%	41%	35%	49%	47%	48% ³
SAT (25/75 Percentile)	1000-1220	1010-1230	1120-1310	1230-1400	1100-1310	1101-1310	1070-1290
HS GPA % > 3.0	85%	48%	98%	--	--	95%	100%
% Fulltime faculty	73%	73%	65%	51%	85% ³	88%	91%
Freshman Retention	83% ²	82%	92%	88%	90%	93%	93%
Graduation Rate (6-year)	54% ²	60%	82%	71%	77%	80%	78% ³

¹SUNY IR Application, Acceptance, and Enrollment Profile, Freshman Applicants, fall 1998 (Report 22-99)

²SUNY IR Attrition and Retention Survey, fall 1998 (Report 98-10)

³US News 2000

Within the State University, Stony Brook competes for undergraduate students primarily against Binghamton, Albany, and Buffalo (in that order). Stony Brook has solid data on its competitive position vis-à-vis these institutions. However, many of its admissions rivals are selective private colleges and universities in New York and elsewhere exhibiting similar student profiles.

- Stony Brook will track its competitive position vis-à-vis private and out-of-state public institutions (e.g., number of mutual applicants; the University's "win" rate for cross-admitted students; reasons proffered by students who chose to go elsewhere) by participating in the College Board's Admitted Student Questionnaire.

2.0 Student Outcomes

2.1 *Student life*

At a campus-wide level, larger enrollments (especially graduate enrollments) and new programs will require more—and more modern—residence halls, reconfigured classroom and teaching laboratory space, and high-tech classrooms. Stony Brook recognizes the need to improve the quality of campus facilities, and has made this one of its major funding priorities (§6.2).

- To accommodate increases in residential students, by fall 2001 the University will complete its renovation of existing residence halls (which will add 500+ beds) and the construction of a 500-bed garden apartment complex. With these new units, students will no longer be denied on-campus housing, be forced to commute from long distances to attend Stony Brook, or be assigned to triple-occupancy rooms (or converted lounge areas). The University can also reinstate or expand living-learning options (e.g., a residence-based Intensive English program).
- By 2001, Stony Brook plans to increase its proportion of residential students from its current level of 52% to 58%.

Stony Brook's move to Division I athletics is consciously designed to help achieve education, public service, and campus-life goals. The University is committed to monitoring the effects of this ambitious move and whether these goals are reached. For example, Stony Brook will identify goals for student attendance at games (an indicator of athletics adding vibrancy to campus life), alumni participation, publicity gained, and community involvement. It will also evaluate whether Division I athletics enhance the University's name recognition and success in attracting out-of-state (and otherwise more diverse) students, and will carefully track the academic progress of athletes vs. non-athletes.

- The campus will submit a five-year report (by 2004) to System Administration documenting the costs and benefits of Division I athletics at Stony Brook

2.2 *Graduation/Retention rates*

Stony Brook's retention and graduation rates have been lower than those of many current and aspirational peers (although they are comparable, and even somewhat higher, than the rates at schools of similar selectivity across the country). Stony Brook recognizes that there is considerable room for improvement in this realm, and this is a major priority. Numerous recent and planned initiatives will help to increase student satisfaction and success:

- Enrolling students who are better prepared academically will enhance retention and graduation rates.
- Stony Brook's Center for Academic Advising has added new staff (including an

Engineering advisor) and improved its Mentor, Peer Advisor, and Achievement Support Programs. Better early placement and advising should help direct students to programs of study that match their abilities and career interests.

- New “drop down” courses (lower-level courses that run in parallel with higher-level ones) and refined introductory course sequences will encourage student persistence, and the University will also seek to strengthen departments that attract large numbers of undergraduate majors.
- In accordance with the University’s new dismissal policy, students who are experiencing academic difficulty are required to meet with an advisor.
- Stony Brook will press ahead with its Learning Communities project as a means of enhancing undergraduate education. Learning Communities bring students together in shared smaller courses and linking seminars designed to draw connections between the fields they are studying. The primary goals of this project—the achievement of which will be monitored by the University—are to equip students with the special skills needed to flourish in a research university setting, including an extra level of intellectual independence and eagerness to take advantage of research and creative opportunities, and to provide an academic “home” within the larger University.
- Whenever appropriate, Stony Brook will continue to encourage parents to become active partners in their children’s educational experience. A Parents Relations office is being established as a single point of contact for parents and a locus for encouraging their involvement in the University.

Stony Brook’s retention rates reflect key characteristics of its student body (e.g., many enrollees are from low-income families and hold regular or weekend jobs), as well as the fact that students easily transfer to and from nearby community colleges and CUNY campuses. The University’s latest (2000) retention plan calls for an annual increase of 2% in its freshman-to-sophomore and its sophomore-to-junior retention rates, in order to match the rates of other highly selective universities.

Stony Brook’s goals for undergraduate retention and graduation are as follows:

	Current	3-year goal	5-year goal
First year retention rate	83.43% ¹	85%	88-90%
Second year retention rate	67%	73%	77%
4 year graduation rate	32.41% ²	38%	44%
6 year graduation rate	53.93% ²	60%	64%

¹Fall 1997 cohort; ²Fall 1992 cohort.

System Administration acknowledges that achieving these goals is directly linked to raising student selectivity.

2.3 *Student/Alumni satisfaction*

Stony Brook participates in SUNY-wide student and alumni satisfaction surveys. The last Student Opinion Survey (administered in 1997) revealed that Stony Brook ranked below the University Center average on most measures (e.g., for Overall Impression Stony Brook was at 3.87 compared to a SUNY average of 3.97). Both campus and System leadership expect that Stony Brook's scores will improve in subsequent administrations of this instrument as the initiatives described throughout this Memorandum come to fruition. Particular improvement will be sought in areas where Stony Brook lagged farthest behind sister institutions such as general condition of buildings and grounds, class size relative to course type, condition of residence halls, and student sense of belonging.

- Stony Brook expects student satisfaction in these problem areas to rise significantly with the 2000 administration of the survey.

However, the results of the 1998-99 SUNY Undergraduate Alumni Outcomes Survey, which sampled 50% of the classes from 1991 to 1994, reveal that Stony Brook's alumni are generally satisfied with their undergraduate experiences. The overall rating of the University of 3.99 on a five-point scale (5 being the highest) is positive, though just below the average of 4.06 for University Centers. Stony Brook fared well in several specific areas surveyed on both an absolute scale and relative scale. For example, the campus exceeded the average for University Centers in areas such as the quality of instruction within the major (4.03 vs. 4.01), cultural diversity (4.41 vs. 4.18) and availability of cultural /fine arts/speakers (3.55 vs. 3.47). Stony Brook alumni responded less favorably when rating opportunities for student/faculty interaction (3.13 vs. 3.11), and sense of individual belonging on the campus (2.79 vs. 2.89). Perhaps most significant, though, is that when Stony Brook '91 and '94 alumni were asked whether they would recommend the University to someone who asked their opinion, 95% said they would do so.

2.4 *Post-graduate success*

As Stony Brook becomes—and is recognized as—a student-centered research university graduates' careers should receive a significant boost from the distinctive educational opportunities available at the University. Stony Brook will seek to ascertain whether this is occurring, so that positive results can help reinforce its undergraduate recruitment, retention and development efforts.

Currently, more than 5,000 Stony Brook students have on-campus jobs that connect them to the University and help them develop useful skills. Stony Brook's expanded Career Center provides internship opportunities to undergraduates as well as job prospects for graduates.

The 1998-99 Alumni Survey provides information on the proportion of Stony Brook's graduates who continue their education at the graduate level—one indicator of post-graduate success. At the time of the survey, more than 40% of the '91 and '94 alumni respondents indicated that they had completed a master's or professional degree (M.D., J.D., etc.). Over 75% of undergraduate alumni identified obtaining a graduate degree as a lifetime goal, with 35% planning to obtain a doctoral degree.

To gauge the success of its graduate students, the campus will also begin to collect systematically post-graduation data on Ph.D. and masters' students. Stony Brook will then utilize such placement and career data to inform its academic and enrollment planning and quality reviews.

- Stony Brook will explore with System Administration whether modifications to SUNY's Alumni Survey can meet this need or whether it would be fruitful for SUNY's research universities to develop jointly indices of graduate student outcomes.

2.5 *Assessment planning*

Stony Brook is currently involved in a number of efforts to assess student learning outcomes. Course grades are of course the primary means of assessment. The growing numbers of undergraduates who do research with faculty (§5.1) receive individual evaluations of their intellectual contributions. The Learning Communities program (§2.2) includes a rigorous assessment component, and the campus' Center for Excellence in Learning and Teaching is deeply involved in determining what students actually learn and what are the most effective modes of instruction.

- Stony Brook's Office of the Provost is developing an assessment program to gauge the effectiveness of its Diversified Education Curriculum (DEC) and other pedagogical initiatives. The campus' assessment efforts will be learner-centered, seeking to determine whether students are changing and learning in desired ways through their collegiate experience.

Stony Brook's Office of the Provost conducts regular (currently every seven years) reviews of academic departments and programs. These reviews routinely use scholars in the relevant discipline from other institutions who assess the currency of undergraduate and/or graduate offerings and the quality of program planning, and who identify vulnerabilities and possible directions for enhancement.

- Stony Brook will continue to conduct these periodic program reviews.
- Stony Brook will endeavor to weave its various ongoing and successful assessment efforts into a comprehensive campus assessment plan.

3.0 Faculty Development and Scholarship

3.1 Faculty recruitment

In general, Stony Brook will continue to hire distinguished faculty and those who show promise as researchers and scholars. One of the institution's major funding priorities is salary adjustments to keep the quality of its faculty high. Indeed, it is critical to Stony Brook's future as a national leader in research and education that the substantial extra costs of having a nationally recognized research university located in one of the most expensive-to-live-in areas of the country be recognized in the future allocation of resources.

Stony Brook's first recruitment goal is to maintain the excellence it has already achieved with programs ranked in the top quartile or top 20 by the National Research Council (examples of programs in this category include Ecology and Evolution, Music History and Criticism, and Physics and Astronomy). Of equal priority for maintenance, and a high priority for expansion when resources allow, are programs that are ranked in the top quartile or top 20 based on faculty productivity data in the NRC study that have not yet become sufficiently well known to enjoy a reputation that matches their objective rank (examples of programs in this category are Anthropological Sciences, Computer Sciences, Hispanic Languages and Literature, and Political Science). Programs that are central to the University's overall educational mission and that have significant potential to move up in the rankings with targeted investment will be a further priority (such programs include Biomedical Engineering, Electrical and Computer Engineering, and English).

Stony Brook plays an increasingly important regional role in terms of economic development and environmental and health issues. Faculty hires in Engineering and Applied Sciences and the Marine Sciences Research Center will emphasize these elements of the University's mission in addition to a continued focus on academic excellence.

3.2 Faculty review, promotion, and tenure

As befits a top-tier research university, Stony Brook's promotion and tenure procedures are characterized by an insistence upon high standards and rigorous external reviews of candidates' qualifications and scholarship. As part of these processes, Stony Brook also uses student evaluations of teaching effectiveness. System Administration applauds Stony Brook for adhering to high standards meant to ensure academic excellence.

3.3 Quality and quantity of scholarship

Stony Brook's volume of externally sponsored funding has been steadily increasing and comprised more than 25% of SUNY's total sponsored activity (through the SUNY Research Foundation) during the last fiscal year. In 1998-99, Stony Brook's total sponsored activity exceeded \$111 million, representing a 32.8% increase in external funding over its 1992-93 level of \$84 million. According to National Science Foundation data, the University's total research and development expenditures in 1998 (more than \$141 million) placed it 61st among

all U.S. universities and colleges, and 52nd in terms of federal research expenditures. Stony Brook's 5-year goal has been 5% annual growth in funding from 1995-2000, and it expects that growth will continue at this pace or better. However, to achieve the desired growth in its research enterprise, Stony Brook must avoid faculty attrition and have the resources to attract new world-class researchers and scholars (see §3.1).

Stony Brook intends to support multi-disciplinary research initiatives, and to maintain both a royalty system that encourages invention and a Technology Transfer Office that assists investigators in bringing their inventions to the marketplace. In 1998, Stony Brook ranked 12th in the nation in royalty income.

The University's management of Brookhaven National Laboratory (BNL) is expected to result in increased stature and enhanced collaborative scholarship between researchers at both locations. A partial list of potential collaborative ventures with BNL includes: a joint Center for Data Intensive Computing (drawing on researchers from applied mathematics and computer and computational science); Structural Biology; Materials Science; Ecology; a Science Studies Forum (an interdisciplinary group of humanities and social science faculty committed to revitalizing science studies at Stony Brook); and the Cancer Institute of Long Island. Stony Brook will build as well on its current research ties with Cold Spring Harbor Laboratory.

In gauging the success of its efforts to strengthen the quality and reputation of its faculty and graduate programs and thereby raise its stature as a research university, Stony Brook looks toward:

- Continued growth of 5% per year in externally funded research, so that by 2005 Stony Brook will have \$199 million in total annual research and development expenditures and \$129 million in annual federal research funding through the SUNY Research Foundation (see §3.4 for baseline)
- Continued success in national competitions for large, federally-supported research centers (currently Stony Brook has three NSF research centers)
- A substantial increase in the number of graduate programs in the top quartile of the National Research Council (NRC) rankings (§5.2)
- An increase in numbers of funded investigators, especially in the humanities and social sciences, despite limited availability of external funding opportunities in some of these fields
- An increase in the number of funded clinical research projects

In evaluating the success of its management of Brookhaven National Laboratory, Stony Brook will look to:

- BNL achieving recognition for conducting the highest quality science (i.e., an Excellent to Outstanding grade/evaluation under DOE contract)
- An increase in the number of collaborations between researchers from both institutions and joint appointments in selected areas
- Brookhaven Science Associates earning high management marks both from the Department of Energy and the local community

3.4 Comparisons with benchmark institutions

On several objective bases, Stony Brook's research and graduate education programs rank among the top ten public research universities in the nation. Thus, in addition to its strong showing in the 1995 NRC assessment of doctoral programs (§5.2), Graham and Diamond (1997) ranked Stony Brook second only to UC Berkeley among public universities on the basis of per capita faculty scholarly productivity. In a separate study using NRC data on per capita citation density, Graham and Diamond ranked Stony Brook 25th among all U.S. universities and 9th among public institutions. Stony Brook is confident that such productivity will eventually translate into heightened international reputation, but this will take some time. Comparative data follow:

Institution	Rank	Total R&D Expenditures (\$ in thousands)	Federal Expenditures (\$ in thousands)	FT Faculty	Total R & D per FT Faculty (\$ in thousands)
University of Wisconsin	4	443,695	240,513	1421	312
University of California San Diego	7	418,790	262,303	753	556
Pennsylvania State University	13	362,643	186,274	1891	192
University of California Davis	21	288,796	114,912	1069	270
Rutgers	41	197,053	69,829	1387	142
Indiana University	47	171,754	95,840	1404	122
University at Buffalo	55	151,650	76,037	956	159
University at Stony Brook	61	141,766	91,531	768	185
University of Virginia	71	133,049	93,328	1025	130
University of California Irvine	72	130,415	65,902	666	196

Sources: National Science Foundation/SRS, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1998; IPEDS/AAUP Survey, "Salaries, Tenure and Fringe Benefits of Full-time Instructional Faculty 1997-98"

4.0 Intercampus Collaboration

4.1 Joint academic programs

Stony Brook, Farmingdale, Old Westbury, and Suffolk and Nassau Community Colleges have been discussing a number of joint initiatives that would take advantage of their distinct missions and histories and combine resources to serve better the educational and business needs of Long Island.

- In the future, the Provosts of the State University campuses on Long Island will meet on a regular basis to facilitate cooperation and collaborative academic ventures.

Stony Brook has also been discussing with graduate deans throughout the System the possibility of shared teaching of specialty graduate classes, as well as means by which the State University could mount one very strong doctoral program in selected fields, rather than several undistinguished ones.

- The University is willing to engage in further discussion with sister campuses about new structures (e.g., gatekeeper campuses with shared graduate faculty) that could help strengthen Ph.D. programs.

Stony Brook is currently involved with a number of collaborative activities including, for example the SPIR program; joint semiconductor research with the University at Albany; a dual M.S.W./J.D. degree with Touro Law Center; the NSF's Alliance for Minority Participation and its new Alliance for Inclusive Graduate Education program; and EngiNet. Mission Review discussions pointed out the need to expand further Stony Brook's ties with sister SUNY institutions.

- In the coming years, the campus should begin to play an even larger role in stimulating, creating, and running cross-institutional plans and programs. One such model is the NSF-supported Long Island Center for Interconnected Learning.
- Stony Brook should seek to enhance its current connections with Nassau and Suffolk Community Colleges. This might most productively begin by having faculty and administrators seek to strengthen professional ties with their counterparts at these institutions.

4.2 *Articulation*

Stony Brook has articulation agreements in place with many SUNY community colleges, and is prepared to explore new forms of partnerships with these and other institutions, such as joint admission or on-site course delivery.

- Stony Brook has begun, and will continue, a dialogue with Nassau and Suffolk Community Colleges on how best to develop well-integrated degrees that will facilitate students' seamless transition to upper-level study.
- Stony Brook's teacher education programs will work with sister SUNY institutions (through articulation agreements and other means) to address projected teacher shortages in New York State. The University's historic strength in mathematics and science education may give it an especially important role to play in such efforts.

- In addition to retention/graduation rate goals for non-transfer students (§2.2), Stony Brook will track the retention and graduation rates of transfer students from SUNY community colleges. This information will then be shared with the relevant colleges.

4.3 *Other cooperative activities*

The University will continue to explore with other Long Island-based SUNY institutions (i.e., Farmingdale, Old Westbury, Nassau and Suffolk Community Colleges and Maritime) possible sharing of academic support services, joint business contracts and residence life development.

5.0 **Academic Program Directions**

5.1 *Undergraduate*

New program initiatives with a strong undergraduate component include Environmental Studies and Asian Studies, both of which are motivated by strong student interest, faculty strength in these areas and potential synergies. The proposed Environmental Studies major features an interdisciplinary curriculum designed to integrate principles and methodology from the social sciences, engineering, the natural sciences, and the humanities. The development of this program reflects an increase in student demand for such training and responds to concerns raised in Stony Brook's 1994 Middle States Accreditation Report which (especially given Stony Brook's resources and location) identified this as a programmatic gap. The Asian Studies initiative fits well with the Charles Wang \$25 million gift to Stony Brook for an Asian-American Cultural Center. Responding to student and industrial demand and research opportunities, the College of Engineering and Applied Sciences has embarked on a program to double the size of its undergraduate programs over the next two to four years. The need for this growth is evident from the fact that the Long Island region produces very few engineers per capita in comparison to other high technology regions in the nation. Increased size might include the creation of departments of Industrial, Chemical, Civil and Environmental Engineering (and an undergraduate major in Biomedical Engineering). System Administration is generally supportive of each of the foregoing undergraduate program initiatives.

Stony Brook's recent reorganization of programs in the Humanities and Fine Arts was designed to focus resources on areas of excellence, to expand existing strengths, and to tailor course offerings to meet the needs and interests of students. Positive programmatic changes that have resulted include a new Cinema and Cultural Studies major (with faculty from Art, English, Comparative Literature, Philosophy, and Foreign Languages); a new American Studies program (with similarly broad interdisciplinary participation including several social science departments); and the reorganization of the French & Italian and Germanic & Slavic Departments into the Department of European Languages, Literatures, and Cultures with a focus on undergraduate language and literature instruction and teacher training at the undergraduate and master's level. Currently underway is a major restructuring of the Writing Program, including plans for both (1) improving and extending the teaching of writing in the

disciplines and (2) closer links to the English as a Second Language program for students who are not native English speakers.

The University's new Professional Education program was created to provide leadership and focus for teacher education at Stony Brook. The University plans to obtain NCATE accreditation for its teacher education program by 2004.

Any new academic programs Stony Brook develops will be reviewed for consistency with mission, demonstrated market need, and evidence of academic quality. As the University adds new programs it will continue to review existing programs for relevance and enrollment strength. When appropriate, Stony Brook will consider deactivation and/or discontinuance of programs.

Consistent with its mission as a research university, Stony Brook encourages student research at the undergraduate level. Having undergraduates work and learn directly from faculty who are active researchers is hallmark of a Stony Brook education and provides a critical distinction between the University and other, less research-intensive, institutions. Indeed, Stony Brook was one of only 10 research universities in the nation that received in 1997 the NSF's Recognition Award for the Integration of Research and Education. Stony Brook already collects annual data on research activities at the undergraduate level through exit surveys—including, for example, numbers of students participating, their level of involvement in research projects, and subsequent authorship of papers or making academic presentations.

- Over the next five years, Stony Brook plans to increase the number of undergraduate students involved in such research or scholarship activities from its current level of 41% to 50%.

5.1.1 General education

Stony Brook has been working with the Provost's Advisory Council on General Education in developing a general education curriculum (i.e., its DEC) that meets the requirements of the Board of Trustees' Resolution 98-241, and will have this program in place for first-time students entering in Fall 2000. Independent of such requirements and as a matter of good educational practice however, Stony Brook faculty will continue to review periodically general education requirements to strengthen content and coherence.

5.2 Graduate

Stony Brook anticipates growth in certain doctoral programs where current faculty resources are sufficient to accommodate more students and the programs in question have external funding to support students after the first one or two years. The campus believes that current intellectual resources can support an expansion of about 25% in doctoral enrollment—particularly in the Basic Health and Life Sciences, the Physical Sciences, and some Applied Science programs. Graduate research opportunities in the sciences will be enhanced by

initiatives such as the Cancer Institute, and by increased cooperation between Stony Brook faculty and Brookhaven National Laboratory research staff.

Nine of Stony Brook's doctoral programs were rated in the top quartile in the 1995 NRC *Survey of Research Doctorate Programs in the United States*: Biochemistry, Cell and Developmental Biology, Ecology and Evolution, Genetics, Mathematics, Music, Pharmacology, Physics, and Psychology. Two programs were rated in the top 10 in the nation: Oceanography (#8) and Ecology and Evolution (#10). Nineteen of the 30 Stony Brook doctoral programs evaluated by the NRC were ranked the best program available at a public university in New York State, and 22 of these programs received the highest ranking within SUNY.

- One of Stony Brook's goals is to increase the number of research doctoral programs ranked in the top quartile in the next NRC ranking. The University's (admittedly ambitious) target is to have 15 top quartile programs. Programs with the highest potential to rise to this rank include:
 - Anthropology
 - Applied Mathematics
 - Chemistry
 - Computer Sciences
 - Electrical and Computer Engineering
 - Materials Science and Engineering
 - Mechanical Engineering
 - Political Science

Other programs that may rise to this level of ranking include Biomedical Engineering, Geosciences, Linguistics, Neurobiology and Behavior, and Physiology.

- Stony Brook also looks for further recognition in even more select categories. Mathematics (if evaluated as the combination of Mathematics, the Institute for Mathematical Sciences, and Applied Mathematics) could be designated a top 10 program. Stony Brook would like to add two more top 20 programs (to its total of four) in the next NRC rankings. Its programs in Astrophysics, Astronomy, Biomedical Engineering, Comparative Literature, Computer Sciences, Hispanic Languages, Linguistics, Materials Science and Engineering, and Physics are strong candidates for such recognition.

It is important to recognize as well that Stony Brook has several smaller, more focused graduate programs with strong international reputations in their sub-fields of specialization that are not reflected in the NRC reputational ratings. According to NRC data on faculty scholarly productivity (external funding; publication and citations in the sciences and social sciences; prestigious awards in the humanities) several Stony Brook programs rank quite highly, including: Anthropology, Astronomy, Chemistry, Comparative Literature, Computer Sciences, Hispanic Languages, History, Linguistics, Mechanical Engineering, and Political Science.

Stony Brook expects that as the NRC refines its ranking metrics these programs will receive more recognition for quality and increased stature.

Stony Brook's new MBA in Technology Management will draw extensively on expertise in Operations Research, Management, Information Systems, Communications, Technological Systems, and Health Technology and Management, as well as the more traditional supporting disciplines of Economics, Math, Sociology, Psychology, and Political Science. With its extensive scientific and technical infrastructure, the University is uniquely positioned in the downstate metropolitan area to offer this technology-focused MBA program.

The fact that a substantial proportion of Stony Brook's graduate and professional programs are nationally recognized as top quality, and that many of these stellar programs are in fields with high operational and facilities expenses, bears directly on faculty salaries. This challenging cost structure—coupled with the University's understandable desire to maintain strength in these fields while enhancing it in others—creates intense and ongoing financial pressure.

A major funding priority for Stony Brook is graduate student support. During mission review sessions Stony Brook made a compelling case to System Administration representatives about its inability to offer competitive stipends to the best graduate students. As possible responses to this problem:

- Stony Brook will continue to award different level stipends in different fields.
- System Administration also recognizes its responsibility to help make an even more compelling case for stipends and to try to find ways of making additional funds available. Avenues that will be explored in coming months include (1) review of how Graduate Assistant/Teaching Assistant and other fellowship funds are allocated across the System, with the intention of awarding funds based on program quality and student outcomes, and (2) possible earmarking of System funds for stipends.

5.3 *Health Science Center*

Stony Brook's presence as a major center of biological science research and its role as a key provider of health care in Suffolk County are and should continue to be defining characteristics of the University.

A satisfactory resolution of SUNY hospital funding issues (including the revenues from clinical earnings directed to home campuses and the overall State University budget) and the associated establishment of stable and smooth hospital operations is a predicate to quality Health Sciences Center educational programs.

Beyond this most urgent need, goals for HSC academic quality and enhanced strength include the following:

- The new Cancer Institute will become an NCI-designated cancer center by 2003, and will be an important step towards Stony Brook's acquiring a national reputation in this field. System Administration notes with approval the intellectually compelling case made by Stony Brook's leadership in support of the Cancer Institute.
- The HSC intends to increase its research base by \$ 3-5 million of external funding per year.
 - Creating a vibrant regional health care network and securing clinical trials funding are crucial steps in growing this base.
 - Greater coordination of efforts between Stony Brook and BNL will lead to growth in medical research. For example, research within the Cancer Institute on radiopharmaceuticals, radiation therapies (both pre-clinical and clinical), and imaging sciences will be expanded through ties to BNL, which has strength in each of these areas.

Perhaps most fundamentally, Stony Brook will promote the expectation that all HSC faculty will be engaged in some kind of research. Currently the departments of Molecular Genetics and Microbiology, Physiology, and Pharmacology all rank in the top 20 based on total research grant funding. Expanding research to develop other areas of excellence is a major goal, and reflects the institution's plans to gain pre-eminence as a medical research center.

Enrollment prospects for units of the Health Science Center are very positive. The School of Social Welfare is the only public professional social work school available to the [3 million] residents of Long Island and will continue to serve both them and residents of metropolitan New York. The School of Nursing distance learning program will expand its enrollment of students from all regions of the country who do not have access to advanced professional education. The School of Health Technology Management (HTM) expects to attract high quality applicants from all parts of the state due to its fine reputation and low tuition compared to private universities. Its Physical and Occupational Therapy programs will shift from a baccalaureate to a M.S. degree program over the next few years in order to meet the profession's new entry-level requirements. It will also introduce a B.S. in Health Sciences from which students may flow into masters' programs and a Speech Language Pathology program offered jointly with Linguistics. The Schools of Medicine and Dentistry will continue to draw well across a statewide applicant pool, while Stony Brook's National Institute of Health-funded Medical Scientists Program (M.D./Ph.D.) will attract highly qualified students from across the nation.

Across the HSC, academic programs will place increased emphasis on the training of health care providers in ambulatory care settings. As part of this effort, primary care education and services will expand. The HSC's innovative core curriculum will continue to be emphasized as multi-disciplinary health delivery models become pervasive.

5.4 *Responsiveness to local/regional/state needs*

The University has many specialized education and outreach and community service activities, including: programs to attract students (especially students from underrepresented groups) to science, mathematics, engineering and medicine; business incubators (and training programs aimed at industry) that make Stony Brook a linchpin of economic development on Long Island; a wide range of adult education programs offered through the School of Professional Development; and exciting cultural programs and performances open to the local community, many of them housed in the campus' Staller Center for the Arts. Of course, a key function of the University's Health Science Center is meeting the health care needs of Suffolk County and environs.

6.0 Infrastructure and Technology

6.1 *Facilities*

Stony Brook has recently completed many projects designed to support the educational and research activities of the University, while at the same time creating a more welcoming environment for its students, faculty and staff. These include:

- Major renovations to its libraries, such as the installation of additional computer work stations with Internet access, better lighting, and improved organization of collection materials.
- The completion of the Center for Molecular Medicine and the Biology Learning Laboratories, which provide state-of-the-art space for research, teaching, and collaborative learning.
- The Student Activities Center, which opened in 1997 and is currently being expanded, provides meeting space for student organizations and draws students, faculty, and staff together for programming.
- Study lounges and outdoor seating areas have been created and/or upgraded.
- The Academic Mall has undergone a transformation, and is now a favorite meeting place in the heart of the campus, with extensive seating, landscaping, and a showcase fountain.
- Rehabilitation of residence hall facilities, which will provide housing for 7500 students.
- Major improvements to the utilities and other infrastructure systems have been made to ensure continued service to the campus.

Significant future physical improvements planned at Stony Brook include:

- Continued landscaping and campus beautification projects.
- Adding computer-based and “smart” classrooms across the campus (§6.2).
- The Charles Wang Asian American Cultural Center, which is scheduled to open in summer 2001.
- A 7,500 seat stadium for USB’s Division I sports program is due to open in fall 2001.
- As noted in §2.1, a 500-bed garden-style apartment complex for students is under construction, and is scheduled to open in fall 2001.
- A new campus daycare facility is under construction. When completed in fall 2001 it will increase the number of slots available for the children of students, faculty, and staff.
- The design is currently being finalized for the Humanities Building Annex – The Center for Language, Communications, and Culture Studies. Construction is scheduled to begin in spring 2001.

6.2 *Academic technology*

Over the last several years, Stony Brook has been expanding undergraduate residence hall network access as part of its dormitory program. It has added and renovated a substantial number of classrooms for computerized, multimedia instruction, expanded its audio-visual services, and established a computer-funding program to enable faculty to purchase or replace their office machines. Future academic technology plans include:

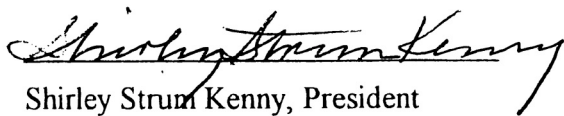
- Upon completion (in fall 2000) of wiring all undergraduate residence halls for Internet access, doing the same for graduate student dorms.
- Adding additional computer-based classrooms and “smart” classrooms (containing the latest instructional equipment) across the campus.
- Using the Center for Excellence in Learning and Teaching to assist faculty and graduate students in developing instructional materials.

Stony Brook intends to support and be intimately involved with several broad-based academic technology initiatives, including the Long Island Center for Interconnected Learning and SUNYConnect. As part of this latter initiative, in fall 2000 the University will be one of six sites testing the library management software that will eventually be used across the entire SUNY system.

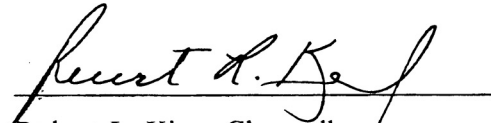
- In the next few years, the University's School of Professional Development plans to offer a full Master of Arts in Liberal Studies degree program and advanced graduate certificates in Educational Computing and School Administration online.
- Stony Brook will also increase the number of undergraduate courses it offers through the SUNY Learning Network (SLN). Its goal is to have 12 such SLN courses by spring 2003.
- Finally, Stony Brook will work with Suffolk Community College to develop joint A.A./B.A. programs that make substantial use of distance learning.

* * * *

This Memorandum of Understanding was developed jointly by Stony Brook and the State University of New York System Administration to provide guidance for planning the campus' future and a framework for gauging the achievement of its goals. Recognizing that individual institutions and the State University as a whole must be able to respond to changing circumstances, both Stony Brook and System Administration will work together to realize the goals and objectives articulated in this document.



Shirley Strum Kenny, President
University at Stony Brook


Robert L. King, Chancellor
State University of New York

**Addendum to the University at Stony Brook
Memorandum of Understanding**

June 28, 2001

7.0 Mission Review Funding—Stipend Award

Based on the merits of its competitively evaluated proposal, the University at Stony Brook has received a \$1,062,000 Mission Review funding award to:

Enhance the quality and national reputation of selected doctoral programs by improving the competitiveness of its stipend awards. Specifically, the award is intended to provide additional funding—in the form of stipend toppers of \$3,000 or \$5,000 each—for a cohort of students in ten doctoral programs as follows:

- Eight (8) doctoral students in Anthropology (at \$3,000 per year)
- Ten (10) doctoral students in Ecology and Evolution (at \$3,000 per year)
- Eleven (11) doctoral students in Mathematics (at \$5,000 per year)
- Twenty-five (25) doctoral students in Molecular Biochemistry (at \$5,000 for 1 year)
- Eight (8) doctoral students in Music (at \$3,000 per year)
- Four (4) doctoral students in Oceanography (at \$5,000 for 1.5 years)
- Eight (8) doctoral students in Pharmacology (at \$5,000 for 1 year)
- Thirty (30) doctoral students in Physics (at \$5,000 for 1.5 years)
- Nine (9) doctoral students in Political Science (at \$3,000 per year)
- Eighteen (18) doctoral students in Psychology (at \$3,000 per year)

As detailed in Appendix B, this award is contingent upon the University at Stony Brook meeting reporting and other requirements. These reports will enable System Administration to better evaluate the strength and plausibility of future Mission Review funding proposals from the University.

*Appendix B***Mission Review Funding — Stipends**

Based on the merits of its competitively evaluated proposal, the University at Stony Brook has received a \$1,062,000 Mission Review funding award to:

Enhance the quality and national reputation of selected doctoral programs by improving the competitiveness of its stipend awards. Specifically, the award is intended to provide additional funding—in the form of stipend toppers of \$3,000 or \$5,000 each—for a cohort of students in ten doctoral programs as follows:

- Eight (8) doctoral students in Anthropology (at \$3,000 per year)
- Ten (10) doctoral students in Ecology and Evolution (at \$3,000 per year)
- Eleven (11) doctoral students in Mathematics (at \$5,000 per year)
- Twenty-five (25) doctoral students in Molecular Biochemistry (at \$5,000 for 1 year)
- Eight (8) doctoral students in Music (at \$3,000 per year)
- Four (4) doctoral students in Oceanography (at \$5,000 for 1.5 years)
- Eight (8) doctoral students in Pharmacology (at \$5,000 for 1 year)
- Thirty (30) doctoral students in Physics (at \$5,000 for 1.5 years)
- Nine (9) doctoral students in Political Science (at \$3,000 per year)
- Eighteen (18) doctoral students in Psychology (at \$3,000 per year)

This award will be made in three installments:

Year 1: \$549,000 Year 2: \$299,000 Year 3: \$214,000

First-year funding is contingent upon an agreed-upon Memorandum of Understanding. Second and third-year funding are contingent upon the reporting requirements detailed below.

Reporting

At the conclusion of the first year for which Stony Brook receives Mission Review funding, the University will submit a report containing, as appropriate:

- a data section describing the profile of students who have applied, been accepted, and enrolled in these doctoral programs, including appropriate comparison data from previous cohorts
- a narrative section describing how the funds improved the University's competitive position with respect to attracting the strongest possible pool of doctoral students into these ten programs, including information on the impact of enhanced stipends on the yield of accepted students

At the conclusion of the second and third years of funding, the University will submit a brief report that describes the progress and academic achievements of this cohort of students, including engagement in research and scholarship with faculty. The report will also describe companion efforts to raise the national reputation of Anthropology, Ecology & Evolution, Mathematics, Molecular Biochemistry, Music, Oceanography, Pharmacology, Physics, Political Science, and Psychology, and steps taken to secure ongoing enhanced stipend support for subsequent cohorts of students thereby demonstrating the sustainability of this effort.