Stony Brook Psychology 2020

In the fall of 2010 as part of the Stony Brook University Arts and Sciences Project 50 Forward, Dean Nancy Squires requested a statement from the Department of Psychology outlining a strategic plan for the next decade and beyond. After two initial meetings with various faculty members, current Chair Arthur Samuel and incoming Chair Daniel Klein appointed a committee including Theodore Beauchaine, Hoi-Chung Leung, Sheri Levy, and Suparna Rajaram to produce a vision statement. Our committee convened for several extended meetings, from which this document was drafted. Drs. Leung, Levy, and Rajaram all have many years of service at Stony Brook, and are therefore well acquainted with department governance, University administrative organization, and previous conversations about the future of Stony Brook Psychology. Dr. Beauchaine, who was recently recruited from the University of Washington, brings 10 years of experience at a top-ranked psychology department, including two years as Associate Chair.

Psychology at Stony Brook

History

The Psychology Department at Stony Brook was founded in 1961. Initially, we had four training programs, including Biopsychology, Clinical Psychology, Cognitive/Experimental Psychology, and Social Psychology. A fifth training program in Developmental Psychology was added several years later. Early on, the department established excellent national and international reputations, with prominent faculty members making major contributions to research in several areas, including but not limited to learning, motivation, physiological psychology, animal behavior, behavior therapy, and stress and coping. In the early 1980s, Health Psychology, which at the time was a cutting edge line of research focused on the interface between psychology and medicine, was added as a focus of research, making our department among the first in the country to merge Social and Health Psychology. Beginning in the 1980s, the department also developed a strong representation in cognitive experimental research, thereby mounting a very effective response to the cognitive revolution that swept Psychology.

By 1983, the faculty reached its historical maximum size of 43. Since then, state and local funding environments have not permitted retiring and departing faculty to be replaced at nearly the rate of attrition. This is in part responsible for the decision in 1987 to disband the Developmental area, which had shrunk to three faculty lines. Currently, our faculty size is 28 (65% of our historical maximum)—a number not seen since our founding years. Review of past Self Study Reports demonstrates clearly that losses incurred during periodic budget crises over the past 30 years have not been restored in better economic times. Nevertheless, Psychology makes very strong contributions to the undergraduate and graduate teaching missions of Arts and Sciences, and maintains a strong national reputation in the quality of our research.

Psychology 2010

Although national rankings are not perfect metrics for judging the full scope of strengths and weaknesses of a department, they do provide some sense of how we stand relative to psychology departments at peer institutions, and how we are viewed by faculty at those institutions. In the most recent US News and World Report rankings (2009), Stony Brook Psychology was tied for 50th. In sub-discipline rankings, the Clinical area was ranked 9th. We would like to see the department rise further in national stature. Given that Stony Brook is the *flagship* institution of the SUNY system—as Berkeley is to the California system—we believe strongly that our department should be ranked among the top 10-15 in the US. We also believe that with strategic infusion of critical resources, we possess the requisite momentum and drive to achieve this goal. In this report, we (1) provide a brief critical evaluation of Stony Brook Psychology, juxtaposing ourselves with publicly-funded psychology departments currently in the top 25; (2) outline a strategic plan for improving our standing relative to this group; and (3) identify structural and cultural barriers to executing our plan.

At present, our department composition reflects nearly the same area structure that has more or less existed since our inception in 1961 (Biopsychology, Clinical, Cognitive/Experimental, Social & Health). Although there is widespread agreement, both here and in other top psychology departments in the US, that traditional area structures such as this no longer serve the scientific mission of psychology given strong trends toward increased within- and across-department collaborations, shared research methods, and common research questions, our department and other departments have retained area structures mainly for graduate training purposes. Several thriving and newly emerging collaborations among our faculty attest to the cross-area and cross-departmental interdisciplinary themes evolving in our research. The strategic plan outlined in this document capitalizes on these transformative changes.

At present, our greatest strengths lie in our productive and collaborative faculty, and our graduate training program. Many faculty members have received prestigious national and international honors, including the Society for Psychotherapy Research Distinguished Career Award, the International Association for Relationships Research Distinguished Career Award, and the Joseph Zubin Memorial Fund Award for Research in Psychopathology, among others. Our faculty are and have been well represented as editors and associate editors of top scientific journals in psychology and neuroscience, including *Biological Psychology*, *Brain and Cognition*, *Discourse Processes,* the *Journal of Consulting and Clinical Psychology*, the *Journal of Experimental Psychology*, the *Journal of Memory and Language,* the *Journal of Personality and Social Psychology*, the *Journal of Social Issues, Personality and Social Psychology Bulletin, Memory Cognition, Psychological Bulletin, Psychological Science*, *Psychonomic Bulletin and Review*, and *Psychophysiology*. Finally, our graduate training program is among the most successful in the nation. Former graduate students and postdoctoral fellows currently hold faculty positions at some of the top academic institutions in the US, including Columbia University, Harvard, the University of Southern California, Washington University, Northwestern University, the University of Chicago, the University of Washington, the University of Connecticut, the University of Massachusetts, and Michigan State University, among others. In 2000 the Clinical Program was ranked first in

the nation by *Clinical Psychology Science and Practice* in placing graduates in tenure track faculty positions.

Though we do not wish to overlook our strengths, our department lags behind the top 25 programs in two important ways. First, although we have a number of well respected neuroscientists on our faculty, we have not mounted an effective instrumental response to the neuroscience revolution that has swept the discipline and now dominates the research portfolios of the National Institutes of Health and the National Science Foundation. In their highly publicized Strategic Plan, the National Institute of Mental Health (NIMH) calls explicitly for interdisciplinary research on brain circuitry, genetic and neural mechanisms of psychopathology, identification of biomarkers of illness, and mapping the developmental trajectories of mental disorders *using imaging technologies*. NIMH is the primary source of funding for research conducted in US psychology departments (followed by NSF). Of particular relevance, almost all top-ranked departments in the US in the past 10 to 15 years have established sophisticated neuroimaging centers—either run by their departments or immediately available to them—that integrate multiple brain imaging technologies including structural and functional magnetic resonance imaging (MRI, fMRI), electroencephalography (EEG), transcranial magnetic stimulation (TMS), magnetoencephalography (MEG), and positron emission tomography (PET), among others. Researchers using such technologies are poised to tackle some of the most longstanding questions about human learning and behavior. How do genes affect personality? Where are memories stored? What are the brain bases of cognition? What neural responses give rise to emotions? How does psychopathology develop? Most of the top-ranked departments also accommodate animal research groups, providing for important and highly fundable experimental and translational research spanning neural anatomy, pharmacology, cellular mechanisms of behavior, etc.

Table 1 lists US psychology departments in the top 25, according to 2009 rankings by US News World Report. Included are embedded links to neuroimaging centers at each institution. The availability of multiple and integrated imaging technologies (e.g., fMRI, EEG, MEG, TMS, etc.) at peer institutions contrasts sharply with the current situation here at Stony Brook, where such technologies—to the extent that they are available (several are not)—are (a) dispersed widely, (b) operated by independent investigators and therefore unavailable to all or even most faculty, and (c) unsupported by technical staff. As a consequence, it is very difficult for faculty without expertise to be trained in and use cutting edge neuroimaging technologies, and technical support is now duplicated inefficiently across several labs. Such inefficiencies are having far-reaching consequences, severely compromising our abilities to compete for federal funds, produce groundbreaking research, and recruit the very best graduate students and faculty.

Table 1. State-funded psychology departments ranked in the top 25 according to US News and World Report, 2009.

Rank	*Department*	*Faculty*	*Neuroscience Center*
2	Berkeley	41	Helen Wills Neuroscience Institute

4.5	UCLA	68	Staglin Center for Cognitive Neuroscience
4.5	Michigan	?	Center for Molecular Neuroimaging
7	Illinois	54	Beckman Institute Biomedical Imaging Center
9	Minnesota	40	Center for Magnetic Resonance Research
9	Wisconsin	35	Waisman Laboratory for Brain Imaging and Behavior
14.5	UNC	44	Biomedical Research Imaging Center
14.5	Texas	47	University of Texas Research Imaging Institute
14.5	Washington	50	University of Washington Integrated Brain Imaging Center
18	Ohio State	58	College of Arts and Sciences Brain Imaging Center (newly established; no website available)
18	UCSD	30	UCSD Center for Functional MRI
25.5	Indiana	52	Indiana Institute for Biomedical Imaging Sciences
25.5	UC Davis	45	UC Davis Imaging Research Center
25.5	Virginia	34	

Second, many of our peer departments have developed integrated sets of research foci that transcend traditional area boundaries, encourage interdisciplinary collaboration, and address emergent questions in the field. For example, although the University of Wisconsin—the top-funded psychology department in the US and a department close in size to ours—retains a traditional area structure, faculty across areas collaborate in their research in nine formalized research foci: aging, brain imaging and human psychophysiology, depression, developmental psychopathology, emotion, infant development, language, memory, and health and human behavior. Similar situations exist at Berkeley, Minnesota, and UCLA, among other top-ranked programs. Although the collaborative atmosphere at Stony Brook is strong (see elsewhere in this report), at present we lag behind many top 25 programs in our formalization of cross-cutting research areas. This is likely an impediment to faculty productivity and graduate student recruitment.

It is our belief that without improved access to and support for an integrated neuroscience center and an interdisciplinary collaborative research agenda, our department will be unable to compete successfully with our peers for federal research dollars in the upcoming decade. Although establishment of the SCAN Center at Stony Brook is an important first step toward contemporizing our department and its research agenda, it is just that—a first step. A significantly greater investment will be needed if we wish to make the initiative fully functional and compete with top-ranked departments in

the 21st Century. Accordingly, we provide recommendations below toward accelerating the formalization and development of collaborative research foci.

Psychology 2020: Transforming Ourselves into a Top-Tier Department

Given the background issues articulated above, and based on both current directions in federally-funded research and the existing strength of our faculty and graduate training programs, our vision for Stony Brook Psychology is to expand and invest in three specific areas that are likely to garner international recognition within our discipline in 2020 and beyond. These include (1) an interdisciplinary center for human neuroscience research, (2) a collaborative lifespan research initiative addressing biological, psychological, and environmental influences on both normative development and the emergence of psychopathology, and (3) a collaborative research initiative on diverse social relationships, spanning contexts from familial to cross-cultural. We also propose a faculty hiring plan to support the three research initiatives. It is important to state at the outset that these initiatives are highly interdependent, and that establishing an integrated neuroscience center (Initiative 1) will increase the innovation and visibility of our lifespan and social relationships research (Initiatives 2 and 3). Indeed, some of the most exciting emergent work in psychological science involves developmental and social neuroscience. At the same time, the success of a neuroscience center will depend on innovative work by lifespan and social relationships researchers. Thus, we envision a psychology department in which common resources and interests create a fully collaborative research consortium. We reiterate that, it is critical that we engage in a very deliberate hiring plan to support Initiatives 1-3, which are otherwise likely to fail.

Initiative 1: Establish an Integrated Psychological and Brain Sciences Center

Our department has had a visible neuroscience component since its early days. Currently, faculty across different areas examine the neural bases of human cognition, personality, learning and memory, social and affective behavior, and psychopathology. We also have a small group of researchers studying animal models of stress, neurodevelopmental disorders, and Alzheimer's disease. In 2009, we took a major step forward in our neuroscience portfolio by acquiring a state-of-the-art MRI system for studying structure and function of the human brain. The system was funded through a Major Instrumentation Grant to our department from NSF, and through supporting funds from the Provost's office. This is a shining example of strong administrative support for Psychology research. We see this as a firm foundation for establishing a sophisticated neuroscience center that includes multiple imaging technologies and staff supports, such as those available to all but one of the top 25 departments (see above). To compete with these departments for dwindling federal resources, it is critical that we integrate existing but scattered resources and obtain additional necessary imaging components to bring SBU psychological and neuroimaging research to the same level as major imaging centers at other public institutions.

Among top-ranked departments, Wisconsin provides a particularly useful example with which to compare ourselves when considering the development of neuroscience research. With 35 faculty, they are among the smallest departments in the top 25. Nevertheless, they have been incredibly successful in their neuroscience research mission. In fact, since establishing their Waisman Neuroscience Center in 2000,

Wisconsin has received more extramural funding than any other psychology department in the US. The Waisman Center is a centralized facility that includes a state-of-the-art 3T MR scanner dedicated solely to research; extensive visual, auditory and gustatory stimulation capabilities, online eye-tracking; a PET scanner; a 256-channel EEG facility for stand-alone and combined electrical and hemodynamic imaging studies; and dedicated computing facilities, among other technologies. Their center now provides interdisciplinary and centralized research space for 10 research scientists, 8 postdoctoral fellows, 23 graduate students, and 28 staff members. Perhaps more importantly, over a dozen faculty members in psychology use Waisman resources to address cutting edge questions in psychological science. This contrasts sharply with the situation here at Stony Brook, where our neuroimaging technologies are widely dispersed, with no mechanism of support for potential users. Although we may have enough faculty who with the right infrastructure could mount sufficient research to keep our current fMRI facility afloat, in the absence of such support we are likely to sink in this effort. But to make the neuroscience initiative truly competitive, we need both infrastructure and a critical mass of faculty, achieved through additional hires, who can create the requisite synergy.

Short Term (Two- to Five-Year) Goals

Given the magnitude of investment needed to establish a competitive neuroscience center, our committee felt it appropriate to articulate both short- long-term objectives. In the short run, it is important that we establish imaging facilities in shared space that are available to all faculty, both within the department and across Arts and Sciences. Imaging technologies are being used in all areas of contemporary psychological research, yet our faculty are at a clear disadvantage in terms of access to and support of such resources. Although we are currently establishing a shared EEG facility, we are doing so in a single faculty member's research space, with no support for non-expert users. An added downside of such isolated and dispersed resources is that it puts the administrative burden of the desired multi-user model on the shoulders of individual faculty with greatest expertise and thereby dilutes the research productivity of one and all. The committee feels it is important that we identify shared space, for example, the 3rd floor of Psychology A, to accommodate research using the following technologies: (1) EEG, (2) eye-tracking, (3) transcranial magnetic stimulation, (4) cardiovascular psychophysiology, and (5) mock scanning. We feel strongly that management of and support for these technologies should be centralized and combined with management of the current SCAN center. Doing so will increase collaboration and take advantage of economies of scale—requiring fewer overall resources than are now being used in duplicating equipment and expertise across multiple labs. Although this short term plan cannot be accomplished without support from the Dean's office and/or Provost's office, our long term objective is to be self-sustaining through federally funded grants and user fees, consistent with models at our peer institutions.

Long Term (Ten-Year) Goals

Longer-term goals are to (a) build a self-sustaining center that can be maintained through National Institutes of Health funding mechanisms available to centers of

established viability (e.g., the multidisciplinary P01 Research Program Project); (2) conduct cutting-edge translational research on mental function and dysfunction that informs strategies for alleviation and prevention of severe psychopathology; and (3) establish SBU as an international leader in both basic and applied human neuroscience research. These goals cannot be realized if we continue to pursue neuroscience research in individual labs, without pooling our intellectual, technological, and instrumental resources, as other universities have accomplished with great success. A major additional long term goal is to obtain a PET scanner for the Imaging Center, which will further our capabilities (PET provides for structural and functional studies of specific neurotransmitter systems, which cannot be accomplished with MRI or fMRI), thereby enabling us to compete with our peers in conducting cutting-edge neuroscience research. By achieving our short term goals, listed above, we will be in a strong position to expand into PET imaging through federal mechanisms.

Initiative II. Collaborative Lifespan Research

Stony Brook faculty have conducted pioneering lifespan research for several decades. In our early years, we had a separate Developmental training program, which was later integrated into the Social area, in large part due to the attrition noted above, but also in response to the shift in research approaches where developmental issues began transcending all four other training areas. A lifespan approach continues to shape research across all areas of the department. For example, in ground-breaking work on attachment, members of our department have demonstrated the importance of early life experiences with caregivers in predicting the quality of later romantic relationships, including marriage. Others have identified early biological vulnerabilities to and social risk factors for later development of debilitating mood disorders. In recent years, we have been strengthening our lifespan research through within-department collaborations and the use of new state-of-the art techniques. For example, our faculty are now conducting longitudinal research with undergraduate students as they maneuver through the transition to college and beyond using cutting-edge experience sampling methods (e.g., computer-assisted diary methodologies).

It is important to emphasize that federal funding for lifespan research is growing rapidly. As noted above, in their highly publicized Strategic Plan, the National Institute of Mental Health (NIMH) calls explicitly for "interdisciplinary research on brain circuitry, genetic and neural mechanisms of psychopathology, identification of biomarkers of illness, and mapping the *developmental trajectories* of mental disorders using imaging technologies" (italics added). Furthermore, there is increased interest in studying the early roots of health and social behavior through prenatal and childhood research, and increased interest in studying later life issues (e.g., normal and pathological cognitive decline, retirement, relocation, caregiving, widowhood) among growing aging populations. Researchers in our department have been long-standing contributors to these research foci. For instance, some of us have conducted pioneering work showing that women who are less optimistic during pregnancy deliver lower birth weight infants. Researchers in our department are also examining the psychological and health benefits of helping others among older adults. Still others are investigating the role of social interactions on memory and beliefs about memory in normal aging. Indeed,

cognitive aging is among the highest priority areas for federal funding in this nation, as attested to by the NIH program announcements attached to these links.

We believe it is both timely and important to formalize our lifespan research agenda, encouraging cross-area collaborations and seeking new hires who conduct life-span developmental research across multiple levels of analysis (e.g., psychological, familial, biological, social, cultural). By using newly available imaging technologies (see above), both current and new faculty conducting lifespan research will increase visibility of Stony Brook Psychology and create synergies for new collaborations both within our department and with other departments on and off campus. Lifespan developmental research is already well funded where supported at places such as the UCLA's Center on Aging, Indiana University's Center for Aging Research, and the University of Wisconsin-Madison Institute on Aging.

Importantly, two of the most exciting areas of lifespan research are the study of biological factors in aging, and biological contributors to the development of psychopathology. In advancing our research in these areas, establishment of the Psychological and Brain Sciences Center will be instrumental. We cannot overemphasize that almost all of our peer institutions are using integrative neuroscience centers in their work on aging. For example, the University of Michigan's graduate training in aging is closely connected to the department's Neuroscience Center, providing for cutting edge research addressing. Without such resources, we are at a competitive disadvantage in our contemporary approach to lifespan research, which heretofore has been a strength of our department.

Initiative III. Collaborative Research on Diverse Social Interactions

Social interaction continues to be a fundamental topic of study in Psychology, cutting across all areas of the discipline. Our research in this area has been recognized internationally throughout our history, including ground-breaking research on parent-child, romantic partner, and intergroup relations. For example, faculty and graduate students in our department have conducted innovative research on interpersonal dynamics, which has advanced the field several steps forward in our understanding of and prevention of violence and psychological abuse in close relationships. As another example, researchers in our department have uncovered the critical role of early attachment relationships in developing trusting social and romantic relationships in adulthood. In addition, faculty and graduate students in our department have conducted pioneering research on the role of friendships with members of other ethnic groups in reducing intergroup prejudice. Others are investigating how social interactions and inferred intentions and actions can shape perception, attention, communication, comprehension, learning and memory, knowledge representation, stereotyping, and decision-making. We are actively using cutting edge techniques such as digital recording to precisely study dyadic and group interactions, and experimental approaches and technological tools to measure the effects of interaction.

A common and noteworthy thread running through this research is also particular attention to issues of diversity including culture, race, ethnicity, social class, gender, and

sexual orientation. Increasingly researchers, administrators, policy makers, and the public recognize the importance of examining the role of diversity in social interactions and outcomes. Although we have conducted top-notch cross-cultural research as well as nationwide research, we also have been fortunate to contribute to diversity science through our research with SBU members. SBU is a model university of the 21st century known for its richly diverse students, faculty, and staff. For example, some researchers in our department have uncovered the belief systems that promote greater comfort and more positive social interactions among students of different backgrounds, and others are conducting interdisciplinary social and cognitive psychological research on how the consequences of out-group status related to race and gender on learning and performance as well as physiological stress. Research on social interactions, thus, has a critical impact on a wide variety of issues related to health and education.

Funding for research on diverse social interactions continues to be a high-priority for federal agencies. For example, the Strategic Plan for The Office of Behavioral and Social Sciences Research (OBSSR) of the National Institute for Health highlights explicitly that "exciting developments" in the next generation of basic behavior and social sciences research include work on social networks, social relationships, and stereotyping. As another example, a main priority area for the Social Psychology Division of the National Science Foundation continues to be funding research on interpersonal relations and group relations including an emphasis on cultural differences. In addition, the Division of Human Resource Development of the National Science Foundation exists solely to fund research on diverse social interactions.

Given SBU's reputation for implementing the latest innovations in science and education to embrace its rich diversity, we think it is especially fitting for us to formalize our research on diverse social interactions as a targeted initiative in our department. Formalizing our Diverse Social Interactions research agenda will allow us to achieve two interdependent goals: (1) highlight our ongoing collaborative projects and affiliated faculty, recruit new users, better utilize communal resources, and secure future top-notch collaborative work on social interactions and diversity; and (2) raise the profile of our department to that of peer institutions ranked in the top 10-15. Given our established and growing research strengths in these areas, we feel that further establishing a Diverse Social Interactions research agenda is a logical place to invest. However, these goals can be achieved only with adequate support from the administration, as outlined below.

As is the case with other areas of study, the available supportive technology is rapidly evolving and revolutionizing the way scholars conduct research on social interactions. One of the most exciting new developments is immersive virtual environment technology, which allows researchers to simulate physical and social environments. There exists both a rapidly growing interest in virtual reality by the public, and an outpouring of funding from federal agencies. Leading universities have received seed money and sustained funds from their administrations to secure this technology in their Psychology Departments, which is one of the most sought after tools for social interactive science. A notable example is the University of California Santa Barbara. Our department is currently paralyzed from conducting this cutting-edge research. We

cannot retain our current stature or raise our future stature in social interactive research unless we have the necessary tools. Notably, not all of our peer institutions have invested in this technology yet. Thus, doing so now could fast track us to be a higher ranking department. As noted earlier, this technology has also become one of the "hottest" tools for studying lifespan issues, and thus such technology would serve the needs of both this initiative and the proposed Lifespan Initiative.

Another critically important tool for studying social interactions and diversity is fMRI, which permits analysis of the neural mechanisms associated with social interactions and cultural influences. Social neuroscience is now an intense area of study, and cutting-edge research programs at institutions such as the University of Michigan and the University of Texas at Dallas are now also examining the role of culture in shaping behavior as well as its influence on brain changes and aging. The establishment of the Integrated Psychological and Brain Sciences Center at SBU, as outlined in the previous sections, including MRI, fMRI, EEG, TMS, and PET will be a significant asset to our Diverse Social Interactions research agenda to productively pursue these directions.

Implementing the Proposed Research Initiatives: Current Barriers

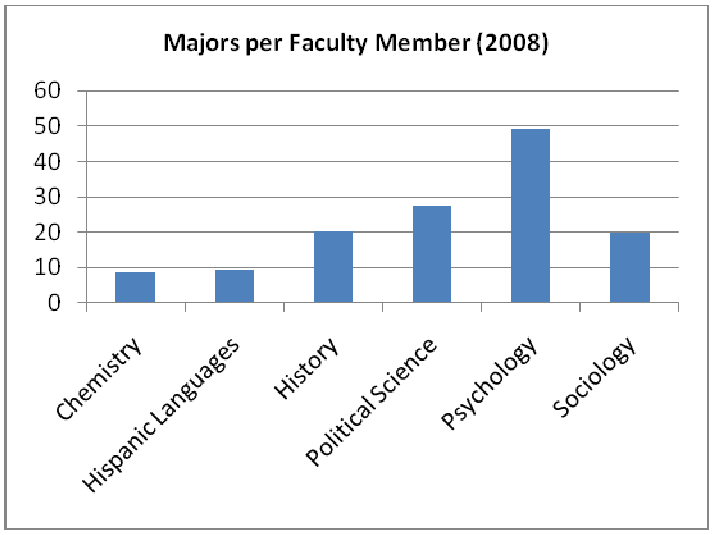
Faculty Hiring

Our ability to successfully mount these three initiatives hinges on addressing a lack of critical faculty mass needed to consolidate the emerging expertise within the department. It is important to highlight at the outset that our department is smaller than those of all psychology departments at public institutions in the 2009 US News and World Report top 25 rankings. Although department size is only roughly correlated with national standing, our faculty is small enough that we likely fall below a critical mass for executing this strategic plan and climbing into the elite ranks of psychology departments at US public institutions, without a faculty hiring initiative. Among departments in the top 25, the two smallest, Virginia and Wisconsin, have 5-6 more faculty members than we do. The consequences of having so few faculty are striking. Table 2 provides a comparison of undergraduate majors and student loads among public psychology departments, as reported by Virginia Tech in April, 2010. As the last column in the table reveals, the student-to-faculty ratio at Stony Brook is higher than at all other departments reported. In fact, our student-to-faculty ratio is nearly double the peer average. In 1994, the student-to-faculty ratio at Stony Brook was 25:1, and has more than doubled since. Furthermore, enrollment in research courses, which require considerable investment of faculty time and effort, is also up sharply. In just the past two years, enrollment in these courses has increased by 33%.

Table 2. Comparison of undergraduate majors and student per faculty ratios loads at top public psychology departments, 2010.

Department	*Faculty*	*Undergrad Majors*	*Undergrads per Faculty*
Berkeley	41	800	21

UC Davis	41	1800	38
Colorado	45	2300	46
Florida	31	1550	47
Illinois	55	1300	22
Maryland	30	1200	40
Michigan	70	1800	25
Michigan State	49	1600	32
Minnesota	40	1250	29
Missouri	34	1212	35
NC State	32	811	25
Ohio State	46	1600	30
Stony Brook	28	1800	60
Texas	52	1500	23
Wisconsin	35	1300	32
Average	42	1455	34



As shown in Figure 1, the student-to-faculty ratio in Psychology is also considerably higher than all other academic units in the Arts and Sciences. In fact, the number of majors per faculty member in Psychology is nearly double that of Political Science, the next closest department. ***Dwindling faculty size and burgeoning student-to-faculty ratios place the Psychology Department in an imminent state of crisis, and will undermine any attempts to improve our national standing and achieve the vision described in this document.*** The disparity in the number of undergraduate psychology majors and the psychology faculty seriously undermines the Department's and the University's mission to provide the needed course and research experience to majors. The desire to nonetheless deliver these services has put tremendous strain on faculty as they simultaneously direct top-notch research programs and graduate training. Department faculty have made extraordinary efforts to rise to this challenge in the short run but this is an unsustainable situation in the long run. Our ability to continue to deliver on all fronts and compete with the best research programs in the nation is critically dependent immediate expansion of our faculty.

Proposed Needs for Faculty Hire: In light of the longstanding downward trend in faculty size, combined with our tremendous potential for reaching international prominence in contemporary research themes, we believe strongly that at a minimum of six faculty hires are needed. This number would barely bring us close to the smallest psychology

departments in our comparison pool outlined earlier, and as such, comprises the minimum impetus needed to advance our new initiatives. Among these six hires, two may be envisioned as neuroimaging specialists (one senior) and two as lifespan specialists (e.g., developmental psychopathology, cognitive aging) to provide centers of gravity within each initiative. A similar approach with additional two hires would bring together the proposed Diverse Social Interactions Initiative. Importantly, we will seek faculty who conduct research that cuts across at least two of Initiatives 1-3.

Additional Critical Resources Barriers

The concerted effort of the Psychology faculty to launch collaborative research addressing cross-cutting themes is timely but is now in a highly vulnerable state. In addition to the issues noted above (dispersed resources, minimal technical support, and our very small faculty), additional resource barriers exist that must be addressed for the department to capitalize on our emerging efforts to modernize our research in psychological science. As already noted, increasing faculty size through strategic hires is critical. However, other issues including improved graduate lines and stipends, increased staff support for collaborative research, and availability of small research funds to develop and strengthen communal and interdisciplinary research resources. Furthermore, reductions in graduate lines undermine both the research and teaching missions of the department. These barriers to the growth of psychology department vis-à-vis its 2020 goals are described below.

Graduate teaching assistantships. A key obstacle in educating a growing number of undergraduate majors is the simultaneous drop in the graduate teaching assistantship lines. This has increased class sizes, reduced the number of 300-level courses the department can offer, and dramatically reduced the department's ability to offer needed laboratory courses in psychological science. The shortage in laboratory courses limits the size of the department's B.S. program, which in turn reduces the competitiveness of psychology undergraduates in securing admissions in acclaimed graduate and other professional programs.

Duration and amount of graduate assistantships. Among the biggest challenges for the department's mission to compete with the best research programs is its lack of financial competitiveness in recruiting and supporting the graduate students. Because of the high caliber of the faculty, the Department is able to attract the best applicants who receive offers from programs such as Yale, Columbia, NYU, and Stanford. However, the Department's assistantship offers are too short in duration (only four years with no guaranteed summer support) compared to many other programs and certainly too short for the average number of years needed to complete a Ph.D. in psychological science (5-6 years). This problem is worsened by the amount of our stipend (***state the amount), which is among the lowest among our peers (*** name the Universities and their stipends here***). Low graduate stipends are especially debilitating when recruiting graduate students in behavioral neuroscience research, where the comparison group of programs offer especially large stipends (e.g.,). Overall, our inability to recruit the best graduate students despite attracting them in the first place is

not only frustrating and demoralizing for the faculty, but seriously undermines the department's efforts to be considered among the best in the nation.

Staff support for communal labs and collaborative research. Despite major resources constraints, the Psychology faculty have made significant strides toward modernizing the Department's research portfolio. This transformation is taking place through the pursuit of two key goals—a selection of cross-cutting themes in various ongoing collaborations and the use of modern techniques (see the Introductory section). However, this effort is now at a precarious stage because of lack of staff to support the rapidly growing technical and managerial needs. Such needs often remain intangible at the beginning stages of new ventures but become necessary with a rise in larger-scale studies, grant application preparations, development of new research directions, and day-to-day laboratory maintenance and supervision. Technical support is a full time job that requires both specialized skills and considerable time. Managerial support may be readily implemented by hiring on dedicated lines post-baccalaureate research assistants who have the requisite background. Faculty and graduate students cannot spend their limited time resources on these nonetheless essential tasks but the completion of research studies as well as grant success critically depend on the availability of such support. In brief, the department is at a critical stage where it is poised to successfully compete in the practice of modern psychological science but its success depends on hiring technical and managerial support to maintain and grow communal labs and collaborative research programs.

Time-sensitive need for small research funds. This is also a critical period for the growing collaborations across cross-cutting themes in terms of seed financial support. Preliminary data and graduate training in such advancing areas require funds but are also needed in the first place to compete for and secure funds. There is currently no mechanism for supporting these collaborative efforts. The Provost's funds (MIG) require inter-departmental collaborations or collaborations with BNL (both of these collaboration themes are highly valued by the department but do not constitute an exhaustive list of exciting collaborative opportunities that have emerged within the department across traditional areas). Therefore, small funds that can provide, for example, 1-2 years of academic year support or graduate support to help students spend dedicated hours of training and research in the emerging collaborations, summer support to graduate students, seed funds to faculty to support the research needs in new collaborations (e.g., subject payment, equipment needs), and seed funds for high-risk/high-reward intra-departmental or inter-departmental projects will significantly enhance the department's ability to seek federal funds.

In light of the increasingly tough funding environment, the Department faces yet another need to maintain and increase its extra-mural funding, namely, the provision of interim small grants to support the faculty who are between grants. Such small internal grants are critical toward sustaining ongoing research when faculty find themselves competing for renewals, can provide the much needed graduate support for students who are involved in previously-funded projects, and in general help the department maintain its funding competitiveness.

Space. A great number of the components for the collaborative research initiatives

already exist. There are state-of-the-art human brain imaging facilities (e.g., SCAN center) and there are advanced animal research facilities (Psych A third floor labs). Yet the very nature of psychological science, and the challenges and opportunities that are before us, necessitates a cohesive and programmatic center for the Integrated Psychological and Brain Sciences Initiative. Central space is necessary to house imaging facilities (EEG, TMS, eye-tracking, mock scanner, etc.) develop technologies, conduct experiments, teach, and nurture collaborations. It would serve to develop synergy among investigators here or across local institutions. In essence, such a centralized effort would be both the synthesis of many disparate SCAN programs, providing a foundation for the development of unique research and education programs, and becoming a resource for recruitment, retention, and collaboration.

Implementation: The implementation of a centralized Psychological and Brain Sciences initiative requires significant fiscal, physical and intellectual resources. To establish this swiftly and to fully capitalize on the potential of this initiative to secure funding from State, Federal and Private agencies, it will require the commitment and attention of the administration. Our existing and emerging collaborative efforts are at a highly vulnerable stage for lack of some essential infrastructure support. The space, financial, administrative and intellectual hurdles which fall before the implementation of a solid research center demand progressive commitment and immediate attention. The opportunities are enormous, but the challenges are very real. It is critical that, at the very least, the following issues be addressed:

1) Additional technical support for the SCAN center
2) Technical support for ERP and eye tracking
3) Recruitment
4) Pilot funding for collaborative research
5) Immediate funds for speaker series on
6) We identified that the third floor of Psychology Building A can serve as home for the Integrated Psychological and Brain Sciences Initiative. This space can house the communal resources and house new labs to enrich the center. In addition, the existing animal lab spaces can attract scientists to complement our strengths in clinical research and develop clinically relevant animal models. This space provides a natural environment where faculty, scientists and students can interact and conduct interdisciplinary research and develop translational research projects.

Conclusion

In conclusion, we want to note that this is a very exciting period for the Psychology Department where the faculty are poised to embrace the next revolution in psychological science, namely cutting-edge research that transcends traditional area boundaries, builds upon the specialized research from each subspecialty, and asks integrative questions. This growth is also marked by vulnerability in making a transformational leap because of the resource barriers that we have outlined in this document. We thank the administration for giving us the opportunity to share this excitement and to request the infusion of financial and administrative support that will enable the Psychology faculty to realize the goals of placing the SBU Psychology Department among the top 10-15 rankings.