

The Working Group on Graduate Education

Final Report
May 2008



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INTRODUCTION

Brown's reputation depends on its research prominence and the excellence of its faculty and graduate programs. Recently a number of institutions have catapulted into the top ranks by making strategic investments in research and graduate education. Brown is poised to make a similar shift in reputation, but its choices must be strategic, and they must be accompanied by a culture change in which research is recognized as being central to the enterprise of the University. This is particularly true given Brown's recent initiatives to foster international connections. Non-U.S. universities seeking partnerships and exchanges typically want to make these connections in ways that expand the capacity and breadth of their research. Brown's goal should be to have the very best graduate programs – ones that attract the best students, partners, and faculty. Our Graduate School should be competitive not only nationally but globally.

Brown's commitment to strengthening graduate education, supported by the Plan for Academic Enrichment, has allowed the University to begin this process. Although advanced-degree training has been taking place at Brown for more than a century, the national and international visibility of the University's graduate programs has improved dramatically in recent years. The Graduate School is receiving record numbers of applications (over 7,150 in 2008). Not only the quantity but the quality of graduate applicants has risen. Oversight and administration have also been improved in order to ensure that graduate students' academic experiences are positive, and that they are receiving clear advice and direction regarding their courses of study, their research, and the successful completion of their degrees. In short, Brown's Graduate School has made many much-needed improvements that establish a solid and supportive base for excellence in its students and programs.

With this base secured, the deans of the Graduate School deemed it important to reconsider the current and future scale – and scope – of graduate education at Brown. Of necessity, this reconsideration entailed the assessment of advanced-degree programs individually and in the larger context of graduate education at Brown.

CHARGE

The Working Group on Graduate Education was convened by the dean of the Graduate School in the fall of 2007. Composed of faculty, faculty-administrators, and graduate students from the four areas of graduate education at Brown – the humanities, and social, physical, and life sciences – the Group was charged to “address immediate needs and long-range plans for graduate programs at Brown... focusing principally on the size and scope of the Graduate School and on the critical role of research in graduate training and support.” The Group spent the fall semester reviewing doctoral programs, and turned its

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attention to master's programs in the spring. The Working Group met intensively all year, thirteen times in all.

ASSESSMENT OF THE GRADUATE SCHOOL AND ITS PROGRAMS

The Graduate School was well poised to embark on a process of program review, having recently completed the institutional response to the NRC (*National Research Council Survey of Research and Doctoral Programs*) in the spring of 2006, and a successful application to join the national *Ph.D. Completion Project* administered by the Council of Graduate Schools (spring 2007). The Graduate School also participated in the *New England Association of Schools and Colleges* (NEASC) accreditation process during the academic year 2007-08. Each of these projects required elaborate data collection and analysis, and all have been carried out in the midst of Brown's transition to a new student information system (SCT Banner). Using what they had learned from each of these projects, the deans and staff of the Graduate School began compiling data and assembling descriptive statistics and graphs for the Working Group. In addition to the quantitative measures, the Graduate School circulated a series of narrative questions for department chairs and directors of graduate study regarding the qualitative aspects of their programs, as well as their visions for the future of their doctoral programs.

WORKING GROUP REVIEW PROCESS

The Working Group spent some time discussing recent literature on doctoral and master's education nationally and internationally. The Group also considered comparative data from other institutions, although access to comparative material was hampered by the thrice-delayed release of the NRC data (originally previewed for November 2007, and now projected for October 2008). The Working Group review process was organized so that programs were evaluated individually and in reference to other programs in their area. Complete reports containing a range of data and narrative descriptions from programs were compiled and reviewed by each member of the Working Group. Members evaluated each doctoral program as excellent, satisfactory, or problematic on rating dimensions including **Vision:** Narrative responses from program representatives regarding their program's past and potential future. **Academic Milestones:** Information regarding degree completion requirements. **Admission:** The numbers of applications, offers of admission, and matriculants for each program for each of the last three academic years. **Demographics:** Admission data cross-referenced with ethnicity and gender information of applicants. Also included was each program's self-reported diversity and recruitment plan as well as the demographic composition of each program's current students. **Financial Support:** The types and proportions of student appointments in fall 2007 (TA, RA, fellowship, etc.), and the funding sources that supported these appointments. **Instructional Support:** Average course enrollments and faculty-student ratios. **Completion:** Time-to-degree data by cohort from 1993 to 2005. **Placement:**

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Data provided by each program regarding the employment outcomes of their graduates over the last five years (academic, governmental, domestic or international, etc.).

The point of this review was not to produce a ranked list of programs, but to familiarize the Working Group members with the range of programs, funding, and challenges within the Graduate School, and to identify specific areas of excellence and concern based on consistent data. In addition, the data for each program were shared with the chair and Directors of Graduate Study for each graduate program in the regular fall meetings at the Graduate School.

In February a preliminary report, based on the review of data from doctoral programs, was released by the Working Group. The dean presented this report to the members of the Brown Corporation during their February meeting. During this meeting, the Corporation endorsed the principle of growth for the Graduate School. The dean immediately contacted chairs and Directors of Graduate Study, inviting them to be part of the planning process for this growth. The dean asked them to respond, this time to provide information of the areas of recent or envisioned growth in faculty or specific subfields, and to present to the Working Group a preliminary rationale for the desire and capacity for growth in their graduate programs. These responses were tabulated and reviewed in one of the April Working Group meetings.

During the spring semester, the dean and members of the Working Group met with various faculty and student groups to present the Working Group data and to discuss the recommendations contained in the preliminary report. The dean also met with the Graduate Student Council and, together with the Provost, made a presentation at the December 2007 faculty meeting. Four open fora were held in March 2007 to present data and to gather input from graduate students and faculty. This report, then, is the result of the Working Group's year-long efforts *and* of information gathered from our surveys and meetings with faculty and students.

SUMMARY OF FINDINGS AND RECOMMENDATIONS:

The Working Group's review of Brown's graduate programs revealed that there are issues that concern all programs at the University, others that are area specific, and still others that are unique to individual programs. In addition to the recommendations contained in this brief document, the Group has prepared a summary description of the current and past history of master's and doctoral programs at Brown. It has also prepared a list of "best practices" gleaned in the course of its review of programs, and a bibliography and selection of sources relevant to graduate education. Finally, all of the data that have been collected will be made available on the Graduate School website in the late summer and will be discussed with Departments in the fall meetings.

The six recommendations advanced by the Working Group are listed below:

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1. GROWTH: The Working Group recommends *in the strongest terms* the need for growth of the Graduate School.

Brown's Graduate School and many of its individual programs are too small to accomplish their training and research missions. There are currently 1,750 graduate students at Brown: 400 of whom are in master's programs (22.8%). Our closest parallel is to Princeton where there are 2,350 graduate students, with 300 in master's programs (12.8%). Yale's School of Arts and Sciences enrolls approximately 2,500 graduate students, 150 in master's programs (6%).

The issue of scale is particularly critical in the laboratory sciences where graduate students play an important role in supporting and collaborating on faculty research. The needs going forward are dual: the University must support the "right-sized" graduate student cohort for faculty laboratories, and faculty must in turn deliver external funding to support their share of graduate student stipend and tuition support.

While faculty in the humanities and some social sciences typically do not have access to the same levels of external funding as their colleagues in the sciences (and the external funding they can secure often does not provide graduate tuition or stipends), the issue of scale is also keen in those fields. The Working Group noted that the humanities at Brown are characterized by many small graduate programs. Many of these programs admit only 2 or 3 students a year, making the opportunities for cohort formation and peer learning extremely limited. The small size of humanities graduate programs is matched proportionately across our peers, but is made critical by our reduced scale. Despite this issue, Brown's humanities programs represent 25% of our graduate population. We thus have an opportunity to make a mark on the formation of humanities fields in the twenty-first century – work which has already begun. In March, the Graduate School won a grant for \$571,000 from the Mellon foundation to support dissertation-writing workshops for students in the humanities and social sciences. Together with the Cogut Center for the Humanities, the Graduate School will continue to lead efforts to foster programs that create critical mass and cross-training among our graduate students (see below).

Is there a magic target number? The dean and Working Group have resisted choosing an ideal size for the Graduate School, recognizing that growth must be strategic and that the mechanisms for growth will follow different strategies (and will have different attendant costs, depending on the field.) Nonetheless, an increase of approximately 300 new graduate students across the next five years, coupled with the ability to accommodate new programs and fields as they develop, is a fair estimate of the scale of growth that is required.

The Group recommends that the rate and specific locations of growth should take their cues from two sources:

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- I. Changes in faculty that have come through the Plan for Academic Enrichment. The addition of 100 new faculty makes growth of graduate programs imperative. The University needs to maximize the gains made through the Plan. The need for growth is especially keen for new, young faculty in the laboratory sciences who depend upon graduate students to attract external funding and to accomplish the research they are undertaking as they move toward tenure, and in our smallest departments—primarily in the humanities--where entering cohorts of 2 to 3 students are too small to allow collegial exchange.
- II. A set of incentives structured specifically to attract external funding. As a guide to such an incentive plan, the Group recommends that for every 3 to 4 students supported by external sources, a fellowship be provided. Since such a model will privilege the physical and life sciences, the Group recommends that student-won support also be considered in this structure.

The Group thus recommends that consortial models to enhance critical mass and to encourage collaborative research, especially in small humanities and social science programs, be developed.

The Group further recommends that a discretionary budget for new programs be established so the dean and Graduate School can respond more flexibly to sound and innovative proposals for new programs or initiatives. It endorses the request made by the dean that earlier approval for the admissions season be given (spring approval for the fall process) and that a mechanism for longer-range budgetary planning be made possible.

2. FUNDING: The Working Group recommends an increase in summer and conference travel funding for graduate students, as well as the continuation of policies that both encourage timely completion and recognize the need for fieldwork and language training in some fields.

The Working Group recognizes the strides in funding for graduate students that have been made through the Plan for Academic Enrichment. Nonetheless they note two areas of acute need:

- Summer funding provided by the Graduate School is limited to three years and to \$2500 (less than Brown pays an undergraduate UTRA.)
- Conference travel is woefully inadequate to cover increased demand by Brown's increasingly active and productive graduate students.

The Working Group also recognizes the need for timely completion, and applauds the Graduate School's efforts to work with programs to monitor student progress and provide clear signals about milestones for the degree. The Group also recognizes the Graduate

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School's efforts to support students who face the challenges of fieldwork and language preparation in their degrees. They recommend the continuation of incentive programs to encourage and reward external funding won by students, and the expansion of "pre-doctoral" opportunities like the Brown/Wheaton Faculty Fellows Program that have the potential to support students beyond the five-year guarantee.

3. DIVERSITY: The Working Group recommends the creation of an Early Start program for incoming graduate students. This program would position incoming students (particularly international and minority students) for success, would help to limit attrition, and would aid in timely completion. It would also send a powerful signal about Brown's commitment to diversity.

In its review of attrition data, the Working Group was struck by the patterns of attrition among minority and international students. The dean has proposed an Early Start program that would welcome all interested incoming international graduate students to campus on July 15 for English-language training, cultural immersion and orientation to the American higher education system. It would also provide a structure for all interested incoming minority students or students coming from non-research institutions, enabling a summer laboratory rotation, research experience or other skills training. Finally it would provide a coordinated venue for departmental training sessions and for summer language training for all students.

4. INSTRUCTION: The Working Group calls for the establishment of an Instructional Committee headed by the deans of the Graduate School, College, and Faculty to coordinate instructional resources with course sizes and limitations. It also calls for the creation of mechanisms to plan more effectively for instructional support across departments and programs. Lastly, the Group endorses a revitalized TA program that would place renewed emphasis upon the professional development of graduate students in addition to the needs of undergraduate students and faculty.

The Working Group devoted much time to discussing the challenges of delivering adequate support for undergraduate instruction, and the corresponding pressures faced by our departments. The quickest and clearest of the Group's conclusions was that resolving these issues were not only beyond their purview, but that they were of an exceedingly complex nature. There could be no simple recommendation or formula for changes, only a collection of strategies and a suggested timeline for managing what is an unpredictable and complex yet critically important issue.

The Group also noted that despite an overall increase in TA support from the Graduate School in recent years, public perception ran to the contrary – that there had been cuts in TAs. The Graduate School's decision to implement a five-year funding guarantee and give programs the primary (though not final) authority to determine how many TAs to appoint for themselves, originated, in part, with the idea that programs would be better at

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predicting and responding to their own instructional needs. Unfortunately, the implementation of this idea proved imperfect. Some programs failed to appoint enough of their own students as TAs, which resulted in a number of highly local (if more generally visible) problems. In light of this, the Graduate School has clarified the intent of its original policy: student appointments will now be processed on a per-program basis, not individually by student, and programs must provide written justifications for variances from prior-year appointment proportions.

Going forward, the Working Group recommends assessing and budgeting instructional support for academic departments in a fashion that involves multiple stakeholders. Pressures on instructional support have four principal causes:

- I. Undergraduate concentrations in areas or departments where Brown does not have a corresponding doctoral program: such as East Asian Studies, Urban Studies, Environmental Studies, and International Relations.
- II. Departments with large undergraduate enrollments and relatively small doctoral programs: such as Political Science.
- III. Fluctuations in undergraduate interest, particularly those that exacerbate I and/or II
- IV. Programs or departments with competing needs or funding structures. Many physical science programs, and all programs in the Division of Biology and Medicine move students to RAships supported by faculty grants by the second year. This is a positive aspect of student professional training, and it is also part of the structure of student funding in those departments, but it limits the timing and number of available students to act as TAs.

The Group recommends a number of strategies for resolving instructional issues. First, the Group recommends the establishment of a set of coordinated, pre-set TA appointment budgets for certain doctoral programs whereby the needs presented by items I and II (above) can be anticipated and addressed. Just as undergraduate enrollments should not dictate the size of our doctoral programs, neither should uncertainty regarding instructional support inhibit or impair the curricular offerings of the College. Non-departmental concentrations such as Urban Studies and IR should be able to plan for a certain level of TA support and build their offerings, in part, on this knowledge. In order for this to happen, related doctoral programs will need to deliver a pre-set number of TAs. The proportions and calculations for these budgets will be determined by prior-year appointments and enrollments, and other metrics to be determined. This practice is reminiscent of, though not the same as, previous Graduate School practices, which budgeted all student support by type. This new process will focus the practice into areas where there is the greatest concern, but it will not extend beyond them.

Related to the first recommendation is the Group's suggestion to increase the size of related doctoral programs. A greater number of students must be placed in graduate programs to serve the pre-dedicated slots. This solution also directly addresses the

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situations faced by programs with competing research-based resources. Without growth, meeting instructional need can be financially punitive for these programs.

The Group's third recommendation is to provide short-term relief through adjuncts, lecturers, or post-docs. This approach will be most effective for addressing short-term fluctuations as it is more efficient and less costly, especially in the context of a five-year guarantee to students (not all of which will, or should, necessarily be spent delivering instruction). Should these needs persist into the long term, a department and the relevant deans can work together to determine the best strategy for addressing them. Establishing or enlarging a doctoral program to meet instructional need is not necessarily a wise or effective strategy.

Fourth, the Group endorses the exploration of different modes of teaching experience for graduate students, including the STA (supplemental part-time TA) used by Engineering, team-teaching, and workshops. Particularly important for professional development, and with great potential to enhance Brown's curriculum, are independently taught (but faculty-supervised) courses in an advanced graduate student's dissertation area. This model has been used to great advantage by the English department.

Lastly, all of the above strategies and tools for responding to instructional pressure must come through a collaborative process involving the deans of the Graduate School, Faculty, and College who will coordinate a unified response. We suggest a timeframe along the following lines:

- November:** Continuing-student support confirmed by Dean of the Graduate School
- December:** Courses chosen by departments
- January:** Course limits recommended by departments and reviewed by the CCC subcommittee, on which a representative from the Graduate School should sit.
- February:** Requests for adjunct replacement teaching slots made by departments to Dean of the Faculty's office. Deans of Faculty and Graduate School meet to determine and assign support from sixth-year graduate students as adjuncts; costs for these students will be shared equally between the DOF and Graduate School.
- March:** TA assignment recommendations for continuing students in years 2-5 made by departments
- April:** TA assignments approved; requests for sixth-year TA appointments made and approved.

Finally, the Working Group feels strongly that teaching assignments for graduate students should be staged to respond to their professional development. Across the sciences, we wish to move as much as possible to a model that supports students as fellows in the first year, TAs in the second, RAs in the third and fourth, and RA, TA, dissertation fellow in

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the final years. Students in all fields ought where possible to TA in larger introductory-level courses at the beginnings of their careers, but have the opportunity to teach in the areas of their research specialties toward the ends of their careers at Brown. This would not only serve the professional development of our graduate students but would also enhance the curriculum with the addition of new research approaches.

5. BIO-MED: The Working Group recommends that the 2005 decision to separate the budgetary management of the graduate programs in the Division of Biology and Medicine from the Graduate School should be revisited with a goal of greater parity in faculty access to students and funding, TA support, and decreased barriers to interdisciplinary training initiatives.

Three members of the Working Group were from the life sciences. All of the members of the Group observed frequent instances of striking difference between Graduate School procedures and resources and those of the Division of Biology and Medicine. Differences in faculty access to students and funding, in instructional support, and ability to support international students are factors that concerned the Group. Bio-Med graduate programs have long faced particular challenges in staffing TAs for undergraduate biology courses, and in supporting international students on federal training grants. The Division has, however, instituted several incentive strategies that have been successful in attracting external funding and in creating a culture of accountability.

While not wishing to pre-judge the results of a review of the E&G-Division split, the Working Group recommends that the decision to separate the two budgets be reviewed with the goal of parity across graduate programs. With the advent of new interdisciplinary initiatives that cross the “divisional” boundaries (such as Biomedical Engineering), it is timely to explore the possibility of increased flexibility for interdisciplinary training.

6. DATA ASSESSMENT: The Working Group recommends that the detailed assessment data collected for the review process be a regular part of the annual review of graduate programs. It also recommends that such data not only be presented to chairs and Directors of Graduate Study but made public on the Graduate School website. It recommends that clear policies derived from these data be established to guide the creation of new programs and the discontinuation of programs that do not attain excellence.

The Working Group feels that the data-driven assessment of programs regarding admission and selectivity, funding, instructional contribution, completion, attrition, time to degree, and placement is a healthy exercise that promotes transparency. These data can and should be a source of self-reflection and review for all graduate programs. The nature of the data available has been dramatically improved with Banner, and will be

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even further enhanced with the comparative data provided by the *PhD Completion Project* and the release of the NRC Survey's findings.

The Group notes that the creation of new programs (particularly in the realm of master's education) have relied upon faculty initiative rather than a strategic University plan. Certainly any initiatives must continue to rely upon faculty interest and ability, but clearer notions of our values and goals must guide our funding and support of new programs. The Group's review – and the numbers above – demonstrate that Brown's embrace of master's programs is atypical for our peer Ivy-plus institutions, but that it mirrors a nationwide revival of the master's degree. Elsewhere, however, master's programs in STEM fields are more prominent. We need to continue to evaluate and to coordinate new efforts in master's education.

The Working Group also recommends the creation of new policies for the discontinuation of programs that are falling short on important indicators. These indicators should include: failure to attract a deep applicant pool and to matriculate top admittees; a failure to attract the kind of external funding that marks top programs in the field in question; high attrition, and weak placement. Trends should be tracked and discussed with the chair and DGS; a three-year trend should lead to a review by the deans and Graduate Council and subsequent recommendation to the Academic Priorities Committee for the closure of the program. The Group's initial review revealed problems in certain programs. Detailed assessments will be provided to each graduate program following the release of this report.

CONCLUSION

Brown's commitment to strengthening graduate education, supported by the Plan for Academic Enrichment, has allowed the University to compete with the most elite graduate schools in the world. The national and international visibility and reputation of the University depends upon our continued efforts to build and maintain excellence in this area.

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