Report of the

Task Force on Doctoral Education

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BROWN

Report of the Task Force on Doctoral Education
Executive Summary

In the fall of 2021, Provost Richard Locke appointed a Task Force on Doctoral Education, charged with developing recommendations for promoting outstanding, innovative graduate education that supports the University's aspirations for excellence in research and teaching. Central elements of the charge included identifying key components of excellence in doctoral education and developing strategies to advance these; defining effective structures of collaboration between the Graduate School and other units; and examining mechanisms for accountability and improvement for both programs and faculty. The task force consisted of eighteen faculty, students, and staff from across Brown's academic units. It drew upon extensive quantitative and qualitative data as well as studies from other institutions, and conducted multiple listening sessions with faculty and graduate students from across the University.

The task force's review has highlighted a number of strengths of Brown's doctoral programs as well as identified some areas for improvement. In terms of the most straightforward metrics, there are signs of good progress over the last decade: applicant pools are growing, admission is more competitive, and yields are improving. All three of these trends constitute important evidence for the quality and reputation of our doctoral programs. The percentage and absolute numbers of students from historically underrepresented groups have increased significantly. Average time to degree is competitive with that of peers. We also see indications of strength in the placement data, with many of our graduates moving into positions in which the degree has a transformative impact, both within and beyond academia.

At the same time, while comparative survey data points to positive student experiences relative to other institutions, more nuanced internal assessments raise some concerns, particularly regarding the experiences of students who identify as women and—to varying degrees in different divisions—of HUG students. Attrition has also emerged as an important challenge in some fields. Moreover, despite the positive aspects of the placement data, efforts to develop comparative data—though not conclusive—suggest that, among those graduates pursuing academic careers, Brown may be producing somewhat fewer field-leading scholars than are peer institutions.

In seeking both to build on these strengths and to address areas of concern, the task force has emphasized the importance of a broad, multi-pronged approach. Launching more graduates into satisfying careers in general and (perhaps especially) increasing placement into field-leading positions in academia requires sustained attention to multiple aspects of our programs rather than simply altering one or two policies or practices.

The report and recommendations are structured roughly in relation to the student life cycle: admissions and recruitment, program curriculum, advising and climate, interdisciplinarity, and professional development. Attention to the importance of diversity and inclusion runs throughout all of these sections, since the task force takes it as axiomatic that diversity is foundational to excellence in doctoral education. A final section turns to overarching considerations regarding criteria for program evaluations and infrastructure. In each of these sections, we analyze the relevant data as well as set our recommendations for action both at the level of the individual program and at the level of the Graduate School or University.

In considering this structure, two important considerations must be kept in mind: First, issues are intertwined and questions resurface in different ways. Just as improving outcomes involves attention to every phase of the student life cycle, so (for example) improving recruitment requires not only strengthening recruitment practices but also attention to program curriculum and climate. In the end, we believe that enhancing the strength of our doctoral programs requires an approach that engages the entire graduate education experience.

Second, while we frequently focus on data at the divisional level, we also noted that variations across programs within a division can be significant. It will therefore be important to attend carefully to the data on each program, recognizing, for instance, that addressing concerns about curriculum may be more urgent in one program, while expanding professional development opportunities may be more pressing in another. We regard internal and external reviews as essential moments for attention to these issues in individual programs.

In other words, one of our most important conclusions is that no one or two metrics alone are sufficient to judge the strength of a graduate program. We recommend the following questions as integral to evaluations such as external reviews and Graduate Council reviews of programs:

- How deep is the applicant pool and how competitive are admission and yield?
- Are curricular requirements robust, flexible, aligned with the state of the field, and reviewed regularly?
- How diverse is the current student population and is there evidence of a supportive and inclusive climate?
- Are advising and mentoring practices strong?
- What grant funding is available to support students?
- Are students able to take advantage of interdisciplinary opportunities (as appropriate)?
- Are placement outcomes aligned with students' aspirations for professional success?

Fostering excellence may in some cases entail increasing the size of doctoral cohorts in order to reach the sort of critical mass that creates a vibrant intellectual community and catalyzes research

productivity. Decisions about appropriate program size should be evaluated not only in relation to the factors above but also in conjunction with broader University priorities:

- Does growth align with strategic priorities and is it in an area already designated for investment?
- How does the size of Brown's program compare to that of peers, in absolute numbers as well as ratios?
- In what ways will a larger doctoral cohort contribute to expanding faculty research?
- What types of infrastructure and other investments will be required if the graduate program expands? How will these be funded?
- Is there evidence that a larger cohort can be self-sustaining, i.e., through increased grant funding?

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Overview of Recommendations

Admissions and recruitment

- Increase the use of holistic review in the admissions process.
- Ensure that admission offers are made to the strongest applicants and that policies regarding the total number of offers support that practice. Avoid "conservative" offers intended simply to increase the likelihood of matriculation.
- Improve outreach and recruiting efforts to attract a more diverse student body.
- Increase the transparency of processes for determining the number of admission offers relative to the target cohort size, as well as regarding wait lists.
- Increase coordination between the Graduate School and the Deans to provide greater alignment between graduate program size and changes in the faculty composition.
- Align doctoral program sizes with the criteria for excellence.

Curriculum

- Review the structure of the curriculum, with attention to course requirements, qualifying exams, and the timing of advancement to candidacy.
- Reconsider established reading lists and tailor them to prepare students for dissertation work.
- Make questions around the curriculum prominent in the charge to external reviewers.
- Support scholarship in emergent research areas in order to promote field-leading work and to attract diverse students.

Advising, mentoring, and climate

- Develop regular models for intervening in programs with climate challenges. OIED and the Graduate School should work together to develop teams to provide support.
- Make expectations for advising and student progress as explicit as possible:
  - establish departmental expectations or best practices for advisors
  - use advising agreements/compacts and/or individual development plans to make expectations explicit and to track progress
  - ensure that information about expectations is readily available, e.g., in handbooks.
- Recognize advising and mentoring as collective responsibilities that should not fall to a single faculty member.
- Foster a culture that values and rewards excellence in advising and mentoring
  - consider additional prizes and other forms of recognition
  - document when faculty engage in mentor training
  - develop mechanisms for accountability by strengthening procedures for addressing concerns and grievances.
- Make the establishment of a supportive culture and the provision of equitable opportunities central to program priorities
- Relevant deans (e.g., in the School of Public Health, Dean of the Faculty, and Graduate School) should develop clear guidance for departments chairs and Directors of Graduate Study for reporting concerns about advising.
- Programs should work with the appropriate deans to avoid admitting new students to work with faculty who have not adequately fulfilled advising responsibilities.

Interdisciplinarity

- Secure financial support for the Open Graduate Education program, to ensure its continuation when Mellon Foundation funding ends and to permit modest expansion.
- Increase opportunities for Doctoral Certificate participation, by providing competitive Fellowship appointments—in place of TA appointments—to free up time for the additional coursework required.
- Pilot structured opportunities for centers and institutes to fund regularized opportunities for students in related doctoral programs. For example, IBES is developing such a pilot with the Department of History to support work and students in environmental history.
- Explore models for awarding one or two semesters of fellowship funding to allow students in fields that are externally funded to pursue interdisciplinary work that could not be supported while on "typical" funding, e.g., a faculty member's research grant.
- Pursue greater alignment of policies around student funding and other student opportunities across the Graduate School, the Division of Biology and Medicine, the School of Engineering, and the School of Public Health.

Professional development

- Extend the model of scaffolded support for HUG students that has been successful in IMSD to the humanities and social sciences.
- Regularize departmental workshops on pedagogy specific to the discipline. Coordinate these workshops with offerings from the Sheridan Center on Teaching and Learning, so as to reduce duplication.
- Expand resources for students seeking career advice.
- Increase investments in centralized resources for career planning and advising for doctoral students, whether through CareerLAB (in close coordination with the Graduate School) or through a joint venture between the Graduate School and School of Professional Studies.
- Expand capacity for graduate student support in the Writing Center.

Infrastructure

- To avoid overburdening individual faculty members, programs should seek, where possible, to disaggregate the range of functions that have historically been covered by the Director of Graduate Studies.
- Expand the data collected on students' career aspirations, comparisons between our students' academic placements and those of peers, distinctions among different outcomes in the broad range of careers outside academia, and – perhaps especially – information about students' own assessments of their careers and the extent to which they are fulfilling and make use of the skills and knowledge they have acquired through their doctoral education.
- Advance planning for a graduate student center that would support social and intellectual community across graduate programs.

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In what follows, we provide a detailed analysis of the current state of doctoral education at Brown and develop strategies for attracting, training, and mentoring the very best graduate students. Many of these recommendations reflect qualities that already make Brown distinctive: a culture of interdisciplinarity, an openness to new approaches and methods, support for independent student learning in the context of a multi-generational scholarly community, and an enduring commitment to diversity and inclusion. We have a strong foundation on which to build.

Outstanding and innovative doctoral education is integral to the University's educational mission and to our ambitions as a leading research university. Our success in preparing graduates to be leaders in their fields requires a sustained commitment to advancing excellence across all its dimensions, and for all of our students.

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I. Introduction

In the fall of 2021, Provost Richard Locke appointed a Task Force on Doctoral Education, charged with developing recommendations for promoting outstanding, innovative graduate education that supports the University's aspirations for excellence in research and teaching. Central elements of the charge included identifying key components of excellence in doctoral education and developing strategies to advance these; defining effective structures of collaboration between the Graduate School and other units; and examining mechanisms for accountability and improvement for both programs and faculty.[1]

The task force's review has highlighted a number of strengths of Brown's doctoral programs and has also identified some areas for improvement, along with questions that merit further exploration. Overall, applicant pools are growing, admission is more competitive, and yields are improving. Although the absence of robust comparative data makes it difficult to be confident about Brown's relative competitiveness, all three of these trends constitute important evidence for the quality and reputation of our doctoral programs. The percentage and absolute numbers of students from historically underrepresented groups have increased significantly. Average time to degree is generally competitive with that of peers. We also see much strength in the placement data, with graduates moving into positions in which the degree has a transformative impact, both within and beyond academia.

At the same time, while comparative survey data points to positive student experiences relative to other institutions, internal data simultaneously raises some concerns, particularly regarding the quality of advising, the climate (especially for students who identify as women or HUGs), and the type of training in some programs. Attrition has also emerged as an important challenge in some fields. Moreover, despite the positive aspects of the placement data, efforts to develop comparative data—though not conclusive—suggest that, among those pursuing academic careers, Brown may be producing somewhat fewer field-leading scholars than are peer institutions.

In seeking to build on these strengths and address areas of concern, the task force has emphasized the importance of a multi-dimensioned and nuanced approach. Launching more graduates into field-leading positions requires sustained attention to multiple aspects of our programs rather than simply changing one or two policies or practices. The resulting recommendations therefore cover most phases of the student life cycle. It also bears emphasizing —for each of the issues that we address in what follows—that there are differences between individual programs and the institutional average. While the task force has necessarily focused on aggregated data, we recognize the importance of sustained attention to individual programs, particularly as challenges are identified.

[1] The full charge and membership of the task force are included as Appendix A.

Excellence in doctoral education necessarily begins within programs—but it does not end there. In recognizing the importance of differences across disciplines, we have sought to outline common challenges, provide tools and suggestions, and ask programs to develop strategies that are adapted to their specific needs. We differentiate between issues that are primarily the responsibility of the advisors, those that programs should address, and those that require changes at the level of the Graduate School or the University. We believe that there are opportunities to advance these goals by leveraging Brown's distinctive strengths, in particular a culture of interdisciplinarity and a deep commitment to diversity and inclusion.

Structure of the report

In order to organize the many elements of data and define the scope of our work, the report and recommendations are structured roughly in relation to the student life cycle: admissions and recruitment, program curriculum, advising and climate, interdisciplinarity, and professional development. A final section turns to overarching considerations about defining criteria for program evaluations and investing in infrastructure. In each of these sections, we analyze the relevant data as well as set out recommendations for action both at the level of the individual program and at the level of the Graduate School or University. Each section concludes with a summary of our recommendations in that area.

Attention to the importance of diversity and inclusion runs throughout all of these sections. The task force takes it as axiomatic that diversity is a critical component of excellence in doctoral education, and that an inclusive culture is the foundation of effective teaching and learning. A range of approaches and of lived experience contributes to a rich intellectual atmosphere in which students and faculty can learn from each other. We heard about the importance of diversity and inclusion from students and faculty alike, and the ways in which this is intrinsic to the quality of education that we are able to offer.

In reading the report, two important considerations should be kept in mind: First, the alignment between the data and the recommendations in each section is not 1:1; issues are intertwined and questions resurface in different ways. Just as improving outcomes involves attention to every phase of the student life cycle, so (for example) improving recruitment requires not only strengthening recruitment practices but also attention to program curriculum and climate. *In the end, we believe that enhancing the strength of our doctoral programs requires a broad, multi-pronged approach that engages the entire graduate education experience.*

Second, while we frequently focus on data at the divisional level, we also noted that variations across programs within a division can be significant. As we move to implement

recommendations, it will be important to attend carefully to the data on each program, recognizing, for instance, that addressing concerns about curriculum may be more urgent in one program, while expanding professional development opportunities may be more pressing in another. We regard internal and external reviews as essential moments for the attention to these issues in individual programs. The task force thus strongly recommends that external reviews of academic units place appropriate emphasis on the quality of, and support for, the doctoral program. Similarly, the Graduate Council review process—conducted by faculty, graduate students, and administrators—provides a prime opportunity to review the program's response to recent feedback in the external review and to plan for the next review.

II. Overview of the Work of the Task Force

The first of the questions in our charge, and the one to which the task force dedicated the most attention, centers on the issue of program excellence. How competitive are Brown programs in attracting and admitting the strongest applicants? How well do we train students and how effectively do we advise and mentor them? Do we foster an inclusive climate in which students from diverse backgrounds can thrive? Are our graduates successful in finding jobs that make use of their doctoral education and that provide professional satisfaction? Our discussions of these issues led us to further questions about administrative structures and whether changes to existing processes could increase efficiencies, improve collaboration, and/or remove barriers to supporting doctoral students. In terms of ensuring accountability, the task force has considered how to create incentives that not only improve the quality of training but ensure that doctoral programs contribute to overall excellence in research. At each of these levels, we have been attentive to the ways in which program quality is tightly linked to diversity and inclusion.

Brown's review in relation to other reviews of graduate education

Our review of doctoral education connects with, and reflects, attention to graduate education well beyond Brown. Across higher education, there has been extensive discussion about the state of doctoral education for several decades. Recently, much of this attention has focused on the academic job market and the precarious professional plight of many recent PhDs, particularly those aspiring to careers in academia. Professional organizations, foundations with interest in higher education, and universities themselves have all weighed in on the state of graduate education. A 2016 report commissioned by the Mellon Foundation, *Reforming Doctoral Education, 1990 to 2015: Recent Initiatives and Future Prospects*, documents a series of studies and initiatives, undertaken by a variety of foundations, to improve doctoral education. These projects collectively portray large areas of agreement regarding concerns about the current model of doctoral education and suggest the need for transformation. Despite the widespread agreement about the challenges to be addressed, the report notes with regret that graduate education has proven particularly slow to reform—so much so that a number of the foundations that had focused attention on doctoral education in the 1990s subsequently shifted their energy and funding to other areas, such as K-12 education, where they judged greater impact was possible.[2]

More recently, at least two of Brown's IvyPlus peers have undertaken major reviews of some or all of their doctoral programs: The University of Chicago released a comprehensive *Report of the University of Chicago Committee on Graduate Education* in 2019, and Yale University produced

[2] "Reforming Doctoral Education, 1990 to 2015: Recent Initiative and Future Prospects, A Report Submitted to the Andrew W. Mellon Foundation by Robert Weisbuch and Lenoard Casuto, with contributions by Peter Bruns, Johnnella Butler, and A. W. Strauss." (June 2, 2016), ii. https://mellon.org/media/filer_public/35/32/3532f16c-20c4-4213-805d-356f85251a98/report-on-doctoral-education-reform_june-2016.pdf.

the *Report of the Humanities Doctoral Education Advisory Working Group* in 2021.[3] The two reports share many common themes with the Mellon Report, and concerns about academic job markets and career outcomes appear prominently in both.

These and similar reports identify a number of recurrent issues:

- whether admissions processes are able to identify promising candidates who may not fit familiar profiles;
- program requirements, including coursework and exams, that are overly rigid, potentially dated, and not well designed for preparing students either for the next steps in the program or for a range of career outcomes;
- inconsistent advising and mentoring, despite the vital role that these play in effective graduate education;
- inadequate support for professional development and preparation for the range of careers that graduates will likely pursue;
- the quality of pedagogical training;
- high levels of attrition, with particular concern about late-stage attrition; and
- extended average time to completion of the degree.

Collectively, this body of material reinforces the sense of the task force that the challenges of supporting excellence in doctoral education are not limited to Brown, nor even to individual institutions or particular disciplines, but are in some sense systemic. And it illuminates the difficulty of bringing about changes in the structures and practices of graduate training.

Sources and input

The task force has sought to understand the form that these challenges take at Brown as well as the importance of forging responses that reflect Brown's distinctiveness. In doing so, our work has been guided by careful review of data, engagement with the community, and transparency about the process. More specifically, the task force has had three major sources of information and input. First, we consulted studies by other universities and foundations (including those cited above) that address concerns about doctoral education and sketch some possible changes. In doing so, our intention was to situate Brown in the national landscape, to assess the extent to which there are common challenges facing peer institutions, and to learn from others—but also to consider whether Brown may have unique attributes that, properly emphasized, might give us a competitive advantage in recruiting and training the very strongest PhD students.

[3] The reports are available at https://provost.uchicago.edu/reports/report-university-chicago-committee-graduate-education and https://image.message.yale.edu/lib/fe311570756405787c1278/m/1/0bfeafd2-c069-43b3-b529-bd6a7460fb89.pdf

Second, we have reviewed extensive data, both qualitative and quantitative, on Brown's doctoral programs. Where possible, we have drawn on comparative data to place our programs in the context of peers. As the following sections and the appendices highlight, engagement with this data has been central to the task force's work.

Third, we have heard directly from Brown faculty and graduate students. We held multiple meetings with Directors of Graduate Studies and graduate students as well as open forums to which all faculty were invited. The meetings with graduate students were hosted by the graduate student members of the task force in order to encourage candid input from students. Summaries of these discussions are included as Appendix B, and the key themes that arose are woven throughout this report.

From the beginning, our work has been guided by the understanding that many features of graduate education are necessarily discipline-specific and that there are important differences among Brown's doctoral programs. Our goal, therefore, was neither to conduct 51 program reviews nor to develop a suite of program-specific recommendations. Rather, the task force focused on identifying significant patterns across departments, articulating principles and questions to inform the way that faculty think about program structure and requirements, recognizing common concerns about extra-departmental sources of support and seeing how the University might address them, and determining how Brown's distinctive strengths are best leveraged to enhance the quality of education we offer to doctoral students.

In reviewing the extensive data available on our doctoral programs, we were immediately confronted with an important question: what indicators matter most in assessing the quality of our graduate programs? We quickly agreed that no one or two alone is adequate for evaluating the overall strengths and weaknesses of doctoral programs. A variety of metrics are relevant, including (*inter alia*) admission and yield rates, support for diversity and inclusion, perceptions of curriculum and climate, attrition, time to degree, and outcomes.

To focus our inquiry, the task force agreed to focus on four broad questions: 1) Are we attracting and retaining diverse and excellent students? 2) Do we foster an inclusive climate and supportive culture? 3) Are we training students well for a variety of career outcomes? 4) Are we helping them to attain professional success? We assembled substantial data in relation to each of these, reviewing Brown's PhD programs as a whole as well as data for each of the four divisions.[4]

In general, this data is presented over the course of this report, with overviews in the body of the text and more detailed data in the appendices and linked resources. For the most part, we present the information roughly in relation to the student life cycle, beginning with admissions and

[4] We should note that one limitation is the lack of comparative data that would enable us to compare Brown's programs with those at peer institutions.

recruitment and moving through the kinds of professional development opportunities that help launch students into successful careers.

However, we take student outcomes, or placements, to be a particularly significant indicator of how well we are serving our students. Outcomes are not simply the last stage of the cycle, but rather correspond to the quality of training throughout. For that reason, we present the outcome data here as a way of framing the larger effort to consider how to strengthen our doctoral programs.

Student outcomes

The question of what constitutes professional success is complex and requires an extended analysis. From early in its discussions, the task force highlighted the central question of how to define "successful" outcomes for graduates. Many recent discussions of graduate education—including among Brown's IvyPlus peers—have stressed the importance of supporting and recognizing a diverse range of career placements, including in non-academic positions, as successful outcomes. The American Historical Association and the Modern Language Association, for instance, have launched major initiatives in this area; the American Political Science Association makes an effort to highlight careers beyond academia. One of the most visible manifestations of this commitment has been Princeton's investment in career advising for doctoral students in its GradFUTURES program (gradfutures.princeton.edu), which focuses on professional competencies and connections. We also recognize that non-academic careers may be highly desirable: for example, in many STEM disciplines placements in industry are research-intensive positions that require a PhD. Thus, at the outset, we should say that the task force emphatically recognizes and supports careers both within and beyond the academy, and we respect the individual career choices that graduates make.

We view successful outcomes as those where the doctoral training and degree are essential and/or transformative for the professional position, the professional position is on a positive trajectory for a long-term career, and the position broadly aligns with the student's aspirations.[5]

However, it is impossible to contemplate questions about professional success without acknowledging the long-term decline in the academic job market. There is abundant evidence, across multiple disciplines, that the number of tenure-track positions has decreased even as the number of doctoral degrees awarded has remained steady or even grown. The Modern Language Association, for example, has for many years tracked job listings in languages and literatures other than English—fields that have been especially hard-hit by the contraction in the job market—and the data make the challenges clear. As recently as 2007–08, just before the

[5] This approach builds on work of the Working Group on the Programs in Modern Language, Literatures, and Cultures from 2020-21.

financial crisis, there were some 1500 positions advertised, of which 60 percent were tenure-track. In 2019-20, the numbers had dropped to 634 openings, of which only 43 percent were for tenure-track jobs. A similar trend can be seen for positions in English over the past decades. The University of Chicago report actually traces the beginning of the decline to the 1980s, when structural changes in the academic job market led to a decline in the fraction of faculty in tenure-stream jobs and an increase in those in part-time or short-term positions.[6]

Yet there is also evidence that many students continue to enter doctoral programs with the hope of an academic career. According to the Council of Graduate Schools Career Pathways Survey, a majority of Brown doctoral students in the humanities and social sciences aspire to careers in higher education; there is more variability in other divisions but it is still regarded as desirable by a significant number of students. See Appendix C. The task force also tried to get more detailed information from Brown graduates about their career aspirations by including additional questions on the annual Alumni Outcomes survey that is sent to PhD graduates at regular intervals. We were interested in particular about whether those who are currently in non-academic careers had initially hoped for a tenure-track position and only pursued alternatives when this did not materialize. There was some indication that this was the case for at least some: approximately one-quarter of those who have never worked in higher education report that they had sought a tenure-track position at some point. However, the number of respondents was too low to draw any firm conclusions, apart from recommending that the survey continue to assess this.

We have therefore approached the question of career success with some care and attempted to assess it in multiple ways. First, data from Academic Analytics provides an overview of current placements for graduates from 2010-2020. This includes information on the large majority of the graduates from this period (there are records for 2,133 out of 2,393, or 89.1%). Of these, the distribution in each sector of employment is as follows:

Table 1: Placement by Division

Division	Academia	For-Profit	Non-Profit	Government	Other
All (2,133)	57.8% (1,232)	31.6% (674)	4.8% (103)	4.4% (94)	1.4% (30)
Humanities (425)	80.9% (344)	8.9% (38)	6.8% (29)	1.4% (6)	1.9% (8)
Life Sciences (503)	52.9% (266)	35.4% (178)	6/6% (33)	3.8% (19)	1.4% (7)
Physical Sciences (791)	42.2% (334)	46.6% (369)	2.5% (20)	7.2% (57)	1.4% (11)
Social Sciences (414)	69.6% (288)	21.5% (89)	5.1% (21)	2.9% (12)	1.0% (4)

The first thing to note is that the majority of our graduates are in fact working in academia, though there are divisional variations that may reflect the broader range of professional opportunities available to PhDs in some disciplines as well as career aspirations in different fields, for example in the life and physical sciences.

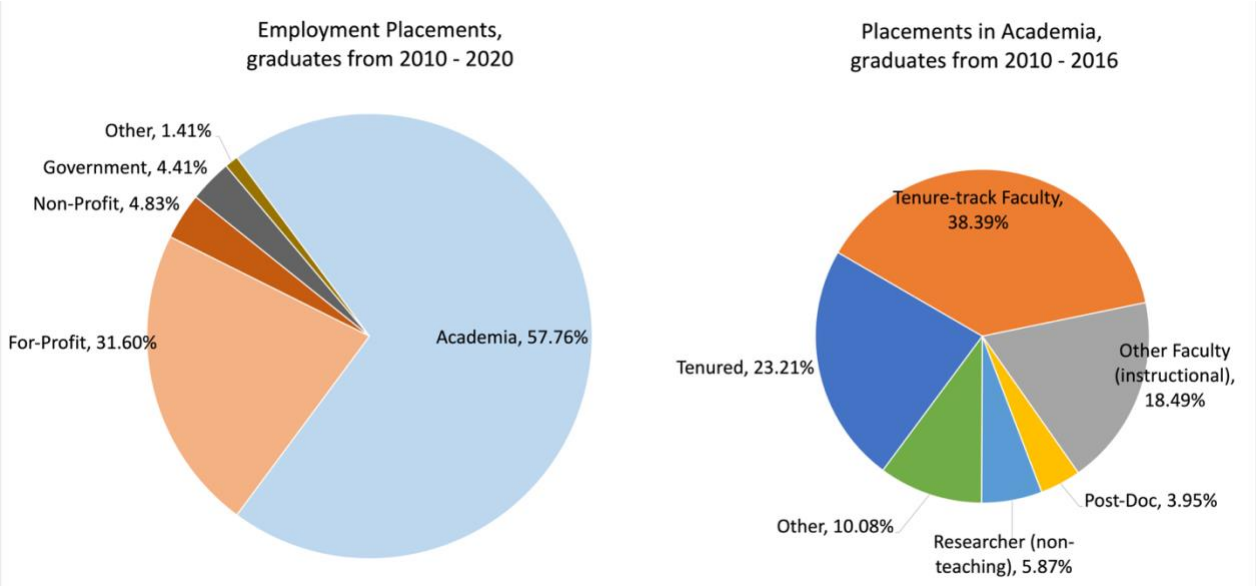
[6] See p. 12 of the Chicago report.

The placements can be further subdivided by appointment type. To focus on placements beyond the 1-4 year period that graduates commonly take to move beyond temporary positions, we look at graduates from the years 2010-2016.

Table 2: Placements in academia, graduates from 2010-2016

Division	Tenured Faculty	Tenure-track Faculty	Other Faculty (instructional)	Post-Doc	Researcher (non-teaching)	Other
All (784)	23.2% (182)	38.4% (301)	18.5% (145)	4.0% (31)	5.9% (46)	10.1% (79)
Humanities (227)	20.3% (46)	32.2% (73)	32.6% (74)	0.4% (1)	1.8% (4)	12.8% (29)
Life Sciences (150)	14.7% (22)	40.0% (60)	11.3% (17)	11.3% (17)	10.0% (15)	12.7% (19)
Physical Sciences (218)	25.2% (55)	42.2% (92)	9.2% (20)	5.5% (12)	10.1% (22)	7.8% (17)
Social Sciences (189)	31.2% (59)	40.2% (76)	18.0% (34)	0.5% (1)	2.6% (5)	7.4% (14)

Figure 1: Placement by sector and within academia



This data, and the fact that only about two-thirds of those in academia are in tenure-stream positions, illustrates the challenges of the academic job market in some areas.

It is also possible to get more granular data about actual placements. The Office of Institutional Research collects information from a range of sources (including not only Academic Analytics but also the Alumni Outcomes Survey referenced above) to track graduates who are one, five, and ten years beyond the degree, including by employment sector, employer, and title. Even a fairly cursory examination of the lists for various programs suggests a range of outcomes along the lines that one might expect to find: a mix of what appear to be tenure-stream positions, visiting and lecturer-track ones, administrative posts, and placements outside of academia,

including in jobs for which doctoral training is highly relevant. But the overall picture suggests that most Brown PhDs feel that they are putting their degrees to good use: in 2020, 96 percent of respondents strongly or somewhat agreed that their Brown education prepared them for their current career, and 92 percent reported that their current job is related to their degree.

The OIR information provides important context, and indeed one can see graduates employed at a number of top-ranked institutions. But we were especially interested to see if there is comparative data that could help us to understand how Brown PhDs are doing in a competitive academic job market and in particular whether they are at the sorts of colleges and universities at which cutting-edge and field-leading research is typically conducted and where they are able to contribute to training the next generation of scholars.

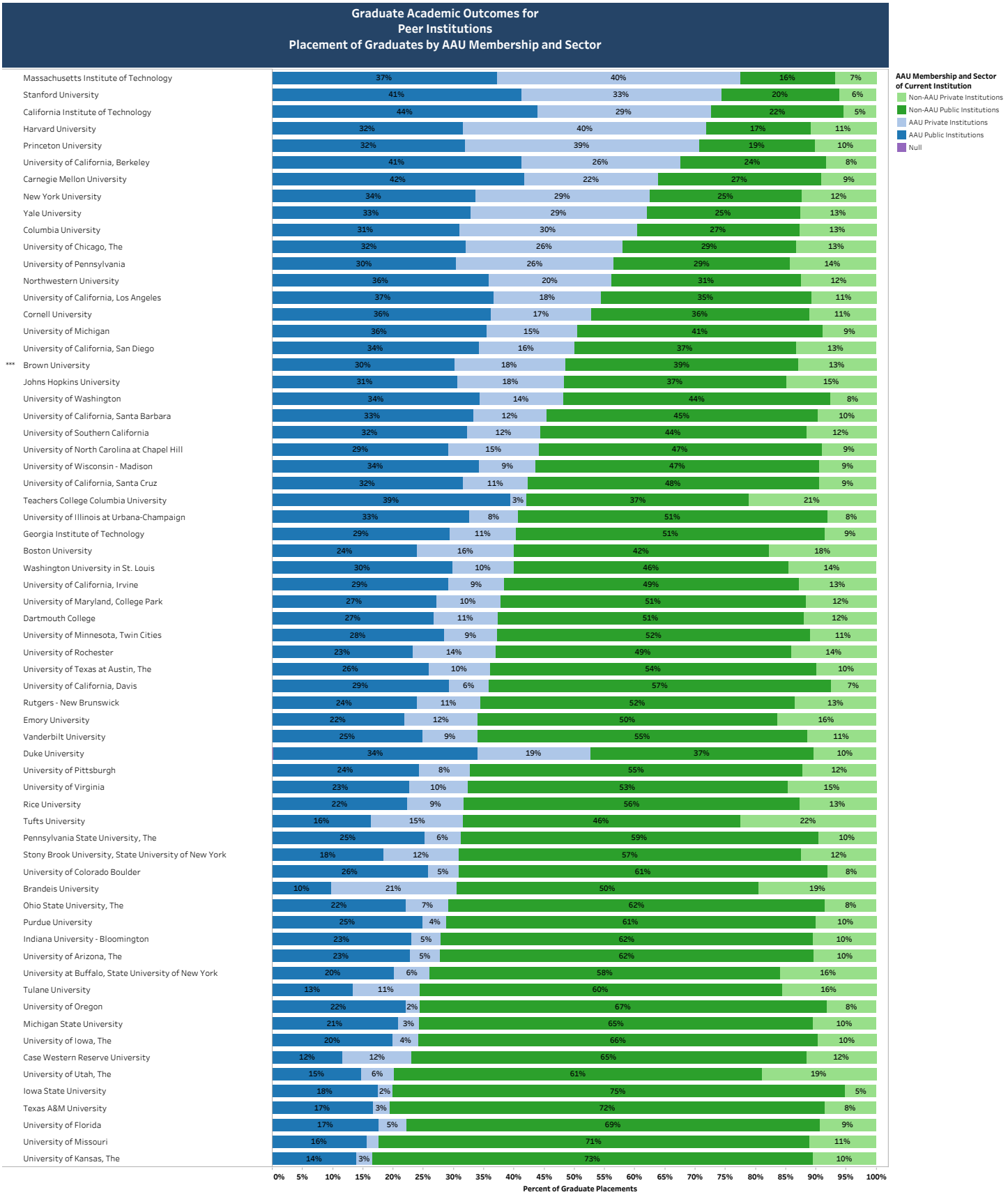
One shorthand indicator of the extent to which graduates are likely to be engaged in, and leading, the scholarly discourse in their fields is whether those individuals who have gone into tenure-stream positions are on the faculty at American Association of Universities (AAU) institutions, since these are by definition the most research-intensive universities. Academic Analytics produces a Graduate Outcomes report that sheds some light on this question, by tracking the degree origins of faculty in its data set, which comprises nearly 470 institutions that award the PhD. The report indicates what fraction of an institution's graduates *who are in that data set* are in AAU vs. non-AAU universities. One advantage of this analysis is that it brackets the question of the value of careers beyond academia and looks exclusively at those who have remained within this subset of institutions within academia. It thus allows us to consider the question of whether they are in positions that are more likely to be at the forefront of their disciplines.

Looking at Brown PhDs from the past 15 years, then, and comparing our graduates to graduates of other AAU institutions, we see that 48 percent of our graduates who are on the faculty in the Academic Analytics group of institutions are placed at AAU institutions, making Brown 18th among its peers. See Figure 2 on the next page.

While this data provides some "signal," as one member of the task force put it, it may also be misleading, since (as noted) the report covers only PhD alumni who are on the faculty at the relatively restricted set of institutions for which Academic Analytics has data. It tells us nothing about those employed at other universities or colleges, including those who may have secured positions at selective liberal arts colleges. And, indeed, the absolute number of Brown graduates in the AA database from which this report is produced is relatively small: a total of about 380 PhDs produced over the last 15 years, as compared to much larger numbers for some peers.

Is this because Brown's programs are smaller? Or does it reflect the fact that a smaller fraction of Brown PhDs are placed in tenure-stream academic jobs in the cohort of PhD-granting institutions that is tracked by Academic Analytics? This is hard to tease out, and it varies by field, but preliminary analysis by OIR suggests that when we control for number of graduates, a relatively

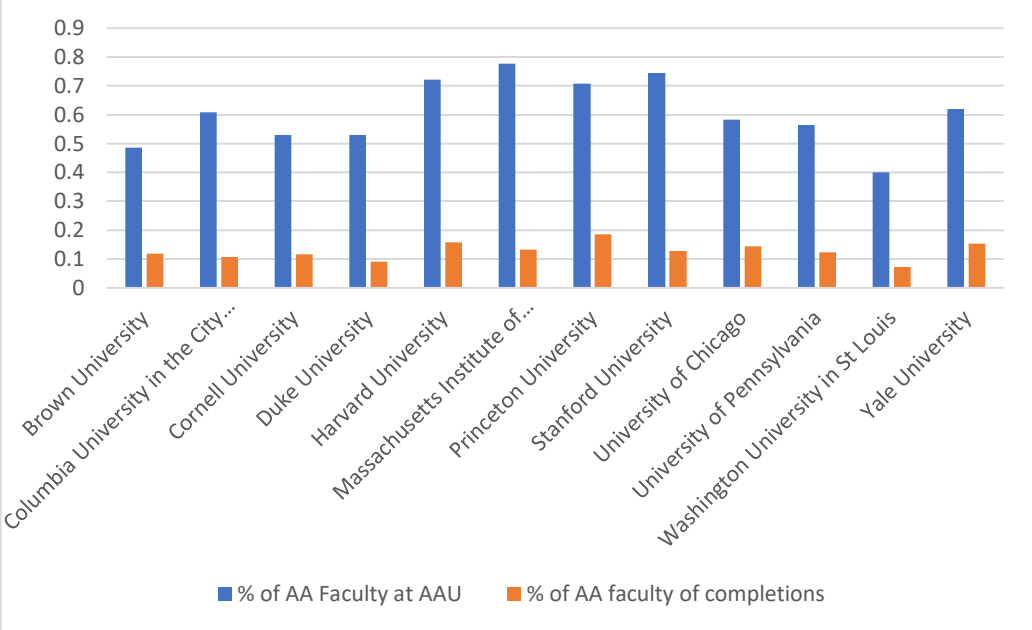
Figure 2. Graduate Academic Outcomes for Peer Institutions



This chart only displays data for graduates whose current institution is different than their degree granting institution.

similar percentage of recent Brown PhDs (12 percent) are on the faculty at these institutions, which is in line with the average for our Ivy+ peers (13 percent) – and that it is a relatively small fraction of graduates for all of these institutions.

Figure 3: Placement of graduates at PhD-granting institutions and in AAU universities



Any number of factors may explain these patterns, including a preference on the part of some graduates for more teaching-intensive institutions with excellent undergraduate students—and in fact we do see Brown PhDs placed at a number of top-tier colleges, which are undoubtedly successful career outcomes. We cite the Academic Analytics data here, though, because it provides a comparative framework that suggests that our placements in AAU universities (at 49 percent of those in the data set) are not as competitive as those of some peers (the Ivy+ average is 61 percent). One tentative conclusion is that Brown could be producing a greater percentage of graduates who are generating field-leading research and shaping the next generation of scholars.

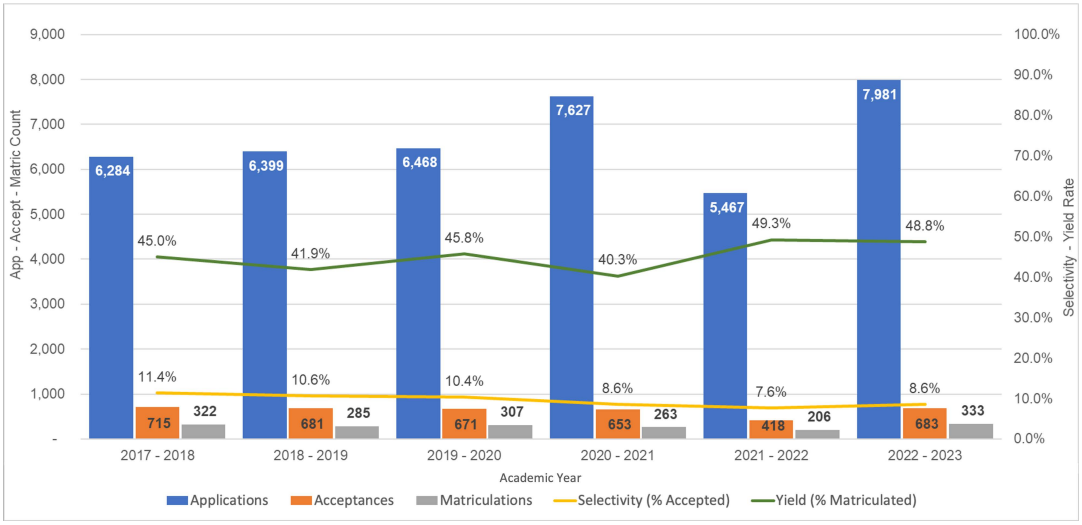
III. Admissions and Recruitment

An outstanding graduate program in some sense begins with a large applicant pool that draws outstanding students from diverse backgrounds. Strong applicant pools support a competitive admissions process. Matriculating the students we admit, particularly those with offers from peer institutions, also depends upon effective recruitment practices. Each of these steps is essential to attracting the students we want to Brown. They form an essential basis for excellence in graduate education, and we begin here. At the same time, we must also keep in mind a certain virtuous circularity in our efforts to enhance our programs: excellence both depends upon and contributes to robust applicant pools and successful recruitment of the students we admit.

Overview of admissions data

The task force reviewed data on the competitiveness of admissions (the percentage of applicants offered admission) and yield (the percentage of admitted students who accept Brown's offer), along with data on recruitment of students from historically underrepresented groups.[7] Our doctoral programs have seen steady increases in the applicant pools over the past decade.[8] See Appendix D. Figure 4 shows the most recent five years.

Figure 4: PhD Admissions, 2017 – 2022 (by year of entry)



[7] Because of the impact of Covid, we take the most reliable data to be that through the 2019 admissions cycle. For 2020, the applicant pools and admissions rates were unaffected by Covid, but the yields were lowered by the number of students who were forced to defer as a result of travel restrictions and/or visa delays. Students who defer are counted as part of the following year's admissions cycle. More significantly, since nearly all programs in the humanities and social sciences paused admissions in 2021, we have no meaningful data from last year for those divisions.

[8] The increase from 2019 to 2020 may reflect the impact of dropping the GRE requirement in many of our programs, a change that was made in part to attract a wider pool of applicants.

Admissions became more competitive each year from 2017 to 2022 (excluding 2021), with the admission rate dropping from 11.4 percent in 2017 to **8.6% in 2022**.

Overall, this data suggests that Brown's doctoral programs are highly selective and that we are able to recruit successfully. Though robust comparative admissions data is not available, overall selectivity in the single digits appears to be in line with a number of our peers.[9] As Appendix D.2 highlights, however, there is also substantial variability across departments. In cases where applicant pools are small or declining, or where yields are notably lower than those for the university as a whole, it will be important to work closely with the programs to ensure that the admissions process is yielding excellent students who will thrive in the program and beyond. It is also worth noting that the data for individual programs needs to be analyzed with some care, since the small numbers of applications and/or admitted students can result in what appear to be large year-to-year swings.

At the same time that admissions have become increasingly competitive, recent years have also seen significant growth in the number of self-identified HUG students who have applied to, been accepted into, and matriculated in Brown's doctoral programs. Between 2012 and 2016, the percentage of matriculating domestic students who self-identified in the groups that this data defines as Historically Underrepresented Groups ranged from 13-15%.[10] **In the years 2018 through 2021, that percentage ranged from 27-31%**.

Table 3: Admission data, students from Historically Underrepresented Groups

	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Applicants	12.7%	13.2%	13.5%	13.4%	14.2%	17.8%	19.2%	19.7%	22.3%	19.7%
Admits	14.7%	14.3%	11.0%	14.4%	15.9%	23.4%	27.1%	25.5%	25.3%	29.0%
Matrics	14.7%	15.1%	13.2%	14.5%	12.5%	23.7%	30.9%	29.7%	29.0%	27.4%

In absolute numbers, as indicated in Appendix D.1, the total number of HUG applicants rose from 400 in 2015 to 647 in 2022; total admits rose from 56 to 107, and total matriculations rose from 23 to 50 during the same period. That said, there is significant variability across divisions, with the proportion of HUG students in the Physical Sciences significantly lower than the average; this may reflect the composition of students earning undergraduate degrees in the Physical Sciences.

[9] See, for instance, data on graduate admissions at MIT and at Duke, available at ir.mit.edu/graduate-education-statistics and at gradschool.duke.edu/about/statistics/all-departments-phd-and-masters-admissions-and-enrollment-statistics.

[10] See Appendix D. This data defines HUGs as US citizens and permanent residents who identify as American Indian or Alaska Native, Black or African American, Hispanic or Latino, and/or Native Hawaiian or Other Pacific Islander. One point that arose in a number of discussions was the importance of attending more closely to multiple forms of diversity among international applicants. Current data tracks HUG status only for domestic students, yet several programs emphasized the importance of recognizing the differences among international students more than Brown's current data does.

The task force views this diversity as integral to excellence, as an emerging body of scholarship has highlighted.[11] The ability to attract and recruit students from historically underrepresented groups stands as a distinctive strength of Brown's programs, and one we ought to build upon.

Recommendations

Against this backdrop of broad strength in Brown's admissions and recruitment efforts, the task force identified a number of areas meriting attention, several of which arose in our meetings with Directors of Graduate Studies and with larger groups of faculty.

First, we heard from some colleagues that programs sometimes choose to make "conservative" offers—to applicants they judge are more likely to accept—rather than admitting the candidates they would most like to enroll. To the extent that this takes place, it a major source of concern. Not only does it distort data about both selectivity and yield but—more significantly—it is inconsistent with a commitment to admitting the strongest students. The Graduate School, along with Biology and Medicine as well as the Schools of Engineering and Public Health, must continue to work with programs to ensure that admission offers are made only to the strongest applicants and that policies regarding the total number of offers extended support that practice.

The second issue is related to the challenges of recruiting highly-qualified candidates from historically underrepresented groups, who may have multiple competitive offers of admission: we heard concerns about the very low number of HUG applicants in some fields, and faculty cited cases in which Brown had lost candidates to larger, more well-resourced, or more highly ranked institutions. The task force appreciates the need for sustained attention to recruiting HUG students, the progress made in recent years notwithstanding. On this point, we have evidence that, for those who choose to matriculate at Brown, support for diversity and inclusion is an important consideration in their decision—perhaps even more so than the reputation of the program (See Appendix E and Table 4).

This highlights the extent to which a supportive culture pays dividends not only in terms of our ability to retain and support current students but to attract excellent new ones. There are obvious links here to the centrality of advising practices and opportunities for professional development – not only in supporting individual students but in fostering program excellence and creating a culture in which all students can thrive. Discussions of those topics in subsequent sections therefore bear directly on our ability to recruit diverse, excellent cohorts.

[11] See, for example, Hofstra, Bas, Vivek V. Kulkarni, Sebastian Munoz-Najar Galvez, Bryan He, Dan Jurafsky, and Daniel A. McFarland. "The Diversity–Innovation Paradox in Science." *Proceedings of the National Academy of Sciences* 117, no. 17 (April 28, 2020): 9284–91. https://doi.org/10.1073/pnas.1915378117."

Table 4: Factors in the decision to attend Brown (fall 2021 matriculants)

Rank	HUG (34)	International (71)	Domestic Non-HUG (70)
1st	Stipend guarantee (91.2%)	Program fit w. Interests (93.0%)	Program fit w. Interests (98.6%)
2nd	Stipend amount (91.2%)	Stipend guarantee (80.3%)	Stipend guarantee (88.6%)
3rd	Program fit w. Interests (88.2%)	Reputation of university, program, or faculty (80.3%)	Reputation of university, program, or faculty (88.6%)
4th	Support for a diverse and inclusive student body (79.4%)	Stipend amount (77.5%)	Stipend amount (77.1%)
5th	Satisfaction and success of current students (73.5%)	Satisfaction and success of current students (77.5%)	Satisfaction and success of current students (75.7%)
6th	Reputation of university, program, or faculty (70.6%)	Support for a diverse and inclusive student body (46.5%)	Academic opportunities across campus (67.1%)
7th	Academic opportunities across campus (61.8%)	Academic opportunities across campus (43.7%)	Support for a diverse and inclusive student body (61.4%)
8th	Program/department recruitment efforts (58.8%)	Program/department recruitment efforts (31.0%)	Program/department recruitment efforts (51.4%)
9th	Cost of living (44.1%)	Cost of living (16.9%)	Cost of living (28.6%)

We also recognize that successful recruitment of diverse cohorts begins even before students decide to apply. Early engagement with prospective applicants, such as through Preview Day events in late October or early November, has been important to cultivating a strong applicant pool. Enhancing community among prospective HUG students early in the recruitment process could be improved by combining STEM and HSS Preview Days into one event. Bringing students together across disciplines and divisions enables them to see themselves as part of a supportive community where interdisciplinary connections are encouraged. Direct faculty involvement at this stage plays an important role in signaling to students the kind of advising experience they can expect in the program and thereby demonstrating a program's support for an inclusive environment. Early engagement with prospective students reinforces this perception and contributes to our ability to recruit excellent applicants. As was suggested in discussions with faculty, recruitment of potential HUG applicants can also include building the pipeline through activities such as mentoring undergraduate students in summer research experiences, post-baccalaureate programs, and networking with faculty at minority-serving institutions.

A further area for attention as we seek to recruit diverse cohorts concerns application review practices. Recent work on holistic review illuminates the value of making evaluation rubrics

explicit.[12] For example, the Department of Earth, Environmental, and Planetary Sciences recently organized a workshop with Julie Posselt and has been developing rubrics for graduate admissions and faculty hiring. We encourage such efforts and see substantial value in cultivating in-house expertise—in the Graduate School and/or OIED—to lead similar workshops for additional programs.

A further point regarding diverse cohorts that surfaced repeatedly in meetings with faculty was the challenge of increasing diversity and inclusion across all populations and the related issue of how HUG students are defined. As Brown's international student population itself becomes more diverse, it seems increasingly important to identify and track international students from groups that are underrepresented in their home countries. We recognize that the issue raises multiple, complex questions about data and reporting but support efforts to enhance the identification of underrepresentation among international students as well.

A third point regarding admissions came up in a number of meetings with faculty: oversight of admissions processes. Apart from a frequently-expressed desire for larger cohorts, concerns involved transparency of the process for determining how many offers could be made relative to the target size for the incoming cohort, as well as practices around block admissions or wait lists. The issues spanned divisions and were not limited to programs overseen by the Graduate School, the Division of Biology and Medicine, or the School of Public Health. The concerns were varied: some faculty expressed frustration at not being able to make greater use of wait lists. Others expressed the opposite concern: that they could not make more offers initially rather than making additional offers as declines came in (i.e., having to use a kind of wait list). Some expressed frustration at the level of Graduate School oversight of their recommendations for admission.

While there may be no simple solutions here, it is clear that the process needs to be more transparent to faculty; greater flexibility may also be warranted, for example in averaging cohort sizes across multiple years. There may also need to be more recognition of differences across disciplines, even within the same divisions. Finally, we have discussed the need for closer coordination between the Graduate School and the Dean of the Faculty (and other deans' offices, as appropriate) so that the size and composition of doctoral student cohorts can be calibrated with respect to faculty planning (e.g., anticipated searches and retirements) and aligned with areas of investment.

Finally, during the second half of the task force's work, the draft Operational Plan for Growing the Research Enterprise was released. Considerations of the strength of doctoral education clearly intersect with Brown's ambitions as a leading research university. The Operational Plan's recommendations to grow doctoral program sizes in some areas were further supported by

[12] Julie R. Posselt, *Inside Graduate Admissions: Merit, Diversity, and Faculty Gatekeeping* (Cambridge: Harvard UP, 2016).

arguments from colleagues in the life and physical sciences that the relatively small scale of Brown's doctoral programs hinders faculty research and that expanding the size of PhD cohorts would contribute significantly to our ability to compete for grant funding and increase research impact. Indeed, there is some evidence that the fact that Brown's programs are smaller vis-à-vis peers in terms of both the total number of students and the faculty:student ratio corresponds directly to lower rankings in some fields. The relatively small size of programs may also affect our ability to recruit the strongest students and faculty. In other words, it may be that maintaining the current scale of programs is actually making it harder to attain excellence. Individual faculty productivity—as measured by grants, publications, and other metrics—may be competitive with peers, and programs may be relatively highly ranked. But the role of graduate students in supporting research means that small cohorts restrict overall productivity.

Data in Appendix F suggests that Brown's doctoral programs in a number of fields in the physical sciences are smaller than those of peers, ranking near or at the bottom of Ivy institutions not only in terms of the number of faculty and graduate students but also in grant dollars. It may moreover be the case that a "niche strategy" of investing in particular areas of strength will be less effective in such fields; rather, coverage in terms of both breadth and depth may be required in order to attain excellence. What this suggests is a case for strategic growth in some programs. We recognize, however, that even in the context of the plan to expand Brown's research enterprise, resources are not unlimited and choices will need to be made. In its discussions, the task force agreed that questions about growth ought to be made in the context of its overall strength, as will be discussed in our conclusion in section VIII.

Summary of recommendations regarding admissions and recruitment

- Increase use of holistic review in the admissions process.
- Ensure that admission offers are made to the strongest applicants and that policies regarding the total number of offers support that practice. Make ambitious offers; avoid "conservative" offers intended simply to increase the likelihood of matriculation.
- Improve outreach and recruiting efforts to attract a more diverse student body.
- Encourage and support active faculty involvement in recruitment.
- Consider combining the two versions of Preview Day to enhance the sense of critical mass and community for prospective students.
- Explore ways to track additional forms of diversity, particularly among international students.
- Increase the transparency of processes for determining the number of admission offers relative to the target cohort size, as well as regarding wait lists.
- Increase coordination between the Graduate School and the Deans to provide greater alignment between graduate program size and changes in the faculty composition.
- Align doctoral program sizes with the criteria for excellence articulated at the beginning of the conclusion.

IV. Curriculum

By definition, the curriculum—encompassing coursework, exams, dissertation, and any other milestones—comprises the actual substance of graduate education. It necessarily constitutes one of the most important considerations as we strive to enhance the quality of graduate education. At the same time, we naturally recognize that much about the curriculum is specific to a discipline: the most relevant and appropriate requirements for coursework, exams, and training will obviously vary across programs.

In engaging questions around curriculum, the task force has focused on several data sources: Median time to degree is one important indicator of whether cumbersome program requirements are delaying time to degree: on this measure Brown's programs do well. For more nuanced evaluation of individual program curricula, we regard external reviews as particularly valuable, precisely because they draw on expertise from colleagues in the discipline. While we did not focus on individual programs, we do see the recommendations emerging from reviews as collectively pointing to the importance of continued attention to whether curricula prepare students for professional success and are refreshed regularly, both to reflect changes in the discipline and to ensure the highest standards for training

Time to Degree

First, and as the 2016 Mellon Report highlights, time to degree has been a focal point of many recent attempts to reform doctoral education. Brown's programs generally fare well:

Table 5: Median time-to-degree by entry year

Division	**2018**	**2019**	**2020**	**2021**
Overall	5.65	5.64	5.62	5.56
Humanities	6.65	6.10	5.66	6.27
Life Sciences	5.35	5.27	5.13	5.28
Physical Sciences	5.34	5.07	5.13	5.28
Social Sciences	5.65	5.68	5.61	5.57

Of students who have completed in the most recent four years, the median time to degree has remained stable at approximately 5.6 years.[13] It is interesting to note that time to degree has dropped over the last decade across all four divisions at Brown even while remaining relatively consistent at IvyPlus and AAU institutions. Brown is now more in line with peers than was previously the case. While time-to-degree should continue to be monitored, the task force does

[13] Note that we have considered four years in part to see whether COVID's impact on students is showing up in extended time to degree. The data does not show an increase in time to degree in 2021, but we may observe changes resulting from the pandemic when 2022 data becomes available

not identify this as requiring immediate attention, especially in light of comparative data from the AAU in Appendix G.

External reviews

On its own, of course, this metric does not answer the question of the quality of training. To gain further insight, we reviewed material from the most recent cycle of external reviews. While many are highly laudatory about the excellence of Brown programs, we note that in a number of cases reviewers expressed concerns about overly burdensome course requirements, appropriate methodological training, exam structures, and reading lists. Examples from the most recent round of programs reviews include comments such as the following:

- A number of courses seem conspicuous by their absence, including …. An ethics/scientific reporting/bias definition course was not obvious. Such courses are important and help everyone.

- As reflected through the concerns of the students, the graduate program as a whole generates some concerns related to how the Department conceives of a "canon," how the department articulates expectations related to methodological training, and the extent to which graduate students are given opportunities to teach (or gain additional methodological training) in their fields of interest

- The students expressed strong interest in more methods training…. The goal should be to make available to students a three-course sequence in quantitative methods… We also recommend thinking about methods training broadly, in ways that build on distinctive areas of strength. That is, thinking about how to train students to do the kinds of research that are the hallmark of the particular niche areas of strength in the Department…

- General exams seem in particular need of updating and revision. Graduate students would greatly appreciate a reading list suitable for our times, and it could be a productive exercise for … faculty to work together to identify newer contemporary works, films, and theoretical texts they consider essential, alongside the more traditional…. The structure of the exams themselves could be streamlined and improved.

- The second-year oral exam system does not work in practice in the way that the formal structure suggests, and this is a problem. The teaching is not organized in a way to provide two-course sequences on a regular basis in many important fields. Inspection of the course offerings list … shows two advanced courses in only a handful of fields

- The … program as it stands has a notably old-fashioned appearance. It does not mesh realistically with the streamlined PhD timeline and it does not appear well designed to facilitate the sort of innovative research produced by faculty in the department….

- While the department has made some effort to reduce the number of requirements and the extent of the reading lists since the [last] review…, there are still too many course requirements (… more than any other program with which we are familiar …) and not enough room for exploration of [other] subjects and approaches. In addition, the program is very rigid in the timing of requirements … when the reality is that students enter the program with better preparation in some areas and gaps in others. A more flexible and individualized timetable would allow students to fulfill requirements in the order that best matches their needs.

Moreover, in meetings with students we heard concerns about course requirements that were misaligned with the topics on qualifying exams, language training that seemed based on past practices rather than the needs of current scholars, and reading lists that seemed diffuse and not tailored to individual students' interests.

The task force spent considerable time discussing strategies for promoting cutting-edge curricula in our doctoral programs. How can we encourage programs to reconsider and revise requirements at regular intervals so that they evolve to reflect new questions, approaches, and methods? In those that receive substantial grant support, for example in the life sciences and physical sciences, external funding agencies frequently drive curricular changes, as when being competitive for a training grant in the life sciences requires the introduction of courses in new areas. The absence of such external catalysts for change may partly explain comments about the curricula in some external reviews of programs in the humanities and social sciences.

Particularly in the absence of the sort of incentives created by external funding, the external review process should play a crucial role in providing discipline-specific guidance from respected colleagues. The external review process already serves a critical role in fostering excellence in academic units by enlisting the assistance of leading scholars from other institutions in helping us to identify challenges and opportunities, consider choices we may be facing, and provide a sense of practices elsewhere that might be usefully adapted to improve those at Brown. The quality of the doctoral program is nearly always a focus of the external review since it is so closely aligned with the strength of the faculty and the reputation of the department. We recommend that the charge to external reviewers include explicit attention to the various factors discussed in this report: curriculum, advising and mentoring, culture and climate, equity and inclusion, opportunities for interdisciplinary work, and placement. They should play a valuable role in ensuring that curricula continue to evolve and develop in keeping with the most innovative work in the field.

In preparing for and responding to these reviews, programs should consider their course requirements and how these are connected to exams, to make sure we are not operating on auto-pilot but rather intentionally revising curricula and requirements in light of the continuous evolution of fields. Programs should be explicit in their comparison of their practices with those of peers. We encourage programs to structure exams so that they test the knowledge and skills that students need in order to undertake more advanced work. For those fields in which exams are based on mastery of a reading list, we recommend that lists be designed with the goal of preparing the student for dissertation work. We also believe that students are ill-served if the time before they are able to advance to candidacy is protracted and suggest that requirements and exams be designed so that students are able to advance to dissertation research in a timely way, with all other requirements fulfilled by the end of the third year.[14]

Graduate Council reviews should also be attentive to these issues, and the timing of that review might be adjusted to ensure that it can be effective as a sort of checkpoint in determining whether the recommendations that emerged from the previous external review have been acted upon, and in identifying issues to be addressed in the next one.

Two further issues also emerged in our discussion of curriculum: intersections with concern for diversity and inclusion and support for interdisciplinary opportunities. First, we heard from colleagues that HUG students (and faculty) in some fields may be more likely to pursue emerging research areas and explore the experiences, histories, and cultural productions of previously marginalized groups. Much field-leading scholarship today is in fact taking place at what were once viewed as the margins and interstices of traditional disciplines, and more diversity among students and faculty can therefore encourage more creative and innovative work and thus contribute to program excellence. Attention to curricular change should be particularly attentive to such developments in our disciplines.

Finally, the task force's discussion of curriculum encompassed attention not only to the courses, exams, and other milestones that constitute the substance of the individual program but also the way in which these requirements enable students to take advantage of Brown's well-deserved reputation for interdisciplinarity and its provision of distinctive curricular opportunities such as the Open Graduate Education program. In attending to their curricula, programs should be sure consider the impact on students' ability to pursue interdisciplinary opportunities. This will be discussed in more detail in Section VI.

[14] On a minor point, we note that there does not seem to be consistency in the language about "comprehensive" and "qualifying" exams and believe that this should be regularized. On a related note, the task force realizes that not all students will complete the PhD and recommends that programs develop ways of recognizing achievements through the awarding of a Master's degree at an appropriate "exit point."

Summary of recommendations regarding curriculum

- Review the structure of the curriculum, with attention to
  - the nature of course requirements, including the number of required courses,
  - the relation between coursework and exams,
  - the role of language training and other skill-based requirements (as appropriate)
  - the timing of exams and the ability of students to advance to candidacy, ideally by no later than the end of the third year
  - benchmarking of these practices in relation to peer programs
- Structure exams to assess relevant knowledge and skills for academic and professional success, and take steps to ensure that students are able to advance to candidacy on a reasonable timetable.
- Reconsider established reading lists and tailor them to prepare students for dissertation work.
- Develop appropriate ways of recognizing students who may not complete the degree.
- Make questions around the curriculum prominent in the charge to external reviewers.
- Support scholarship in emergent research areas likely to attract diverse students.

V. Advising, Mentoring, and Climate

While curriculum in some sense defines the core content of a graduate program, students' experience and actual training is shaped by much more. Widespread discussions of graduate education have emphasized the central role of advising and mentoring. Attention to advising and mentoring also intersects with—though is not synonymous with—broader concerns about program climate. All of the other studies we engaged highlighted the central role of advising in excellence for graduate education, and we judge a focus on advising and mentoring to be one of the most effective means of addressing concerns about climate.

Doctoral Education Survey data

Our discussion of this range of topics is informed by a great deal of data on the extent to which our programs foster an inclusive climate and supportive culture. A survey by the American Association of Universities provides more comparative data than is available for many other indicators. In general, and as can be seen in Appendix H, Brown compares favorably to other institutions: results are above the average in 19 of 32 categories and below the average in only 4. We take this data to signal that Brown is doing relatively well as compared to peers. Probing more deeply, however, we see that students across all institutions gave relatively lower marks on questions related to one of the most important components of doctoral education, the dissertation –including selection of a topic, research, and writing and revision. There are also lower scores in terms of how helpful dissertation advisors had been regarding career options, *including* for academic careers.

For more detailed data, we relied heavily on the Doctoral Education Survey that is administered each spring by the Office of Institutional Research. The survey solicits student evaluations regarding program climate, teaching and advising, support for professional development, and a variety of other topics. Detailed data is available on the OIR website. Here as well, there are reasonably strong evaluations across a number of metrics, but there are important variations across divisions and among different groups of students. However, even a high-level analysis suggests that there is room for improvement in advising and mentoring practices, broadly defined, and that programs may need to track their efforts in these areas more carefully.[15] While we recognize that many of the survey results reflect perceptions that may not entirely correspond or overlap with other sources of information, we nevertheless take these indicators seriously, since a commitment to a climate in which all members of the community believe that they are respected is integral to Brown's values.

[15] We discussed whether there should be a graduate-level version of the Advising Sidekick (ASK) for undergraduates, which brings together a range of advising resources, enables students and advisors to access information about requirements, and documents progress. In the end, we concluded that the curricular and other variations among different doctoral programs would present challenges.

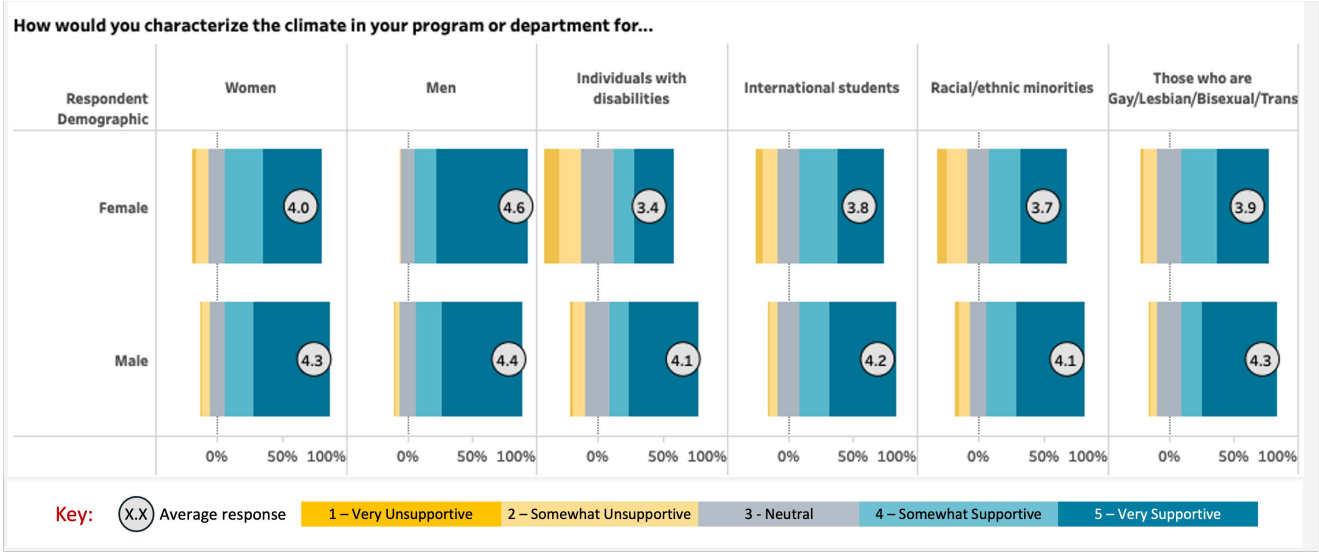
Equally importantly, the student forums we held—as well as anecdotal impressions of recruitment trends—highlight the importance of student morale in the effective recruitment of new students. Current students play a vital role in admitted students' decisions about whether to accept Brown's offer, and low morale among these students can seriously impede recruiting efforts: what students referred to as the "whisper network" can draw or repel students.

It seems self-evident that fostering an inclusive climate and supportive culture is critical to excellence in doctoral education if all students are to be able to thrive. And there is enough evidence in the Doctoral Education Survey to suggest at least some cause for concern. Where there are lower-than-average ratings in a number of individual programs and departments, the Graduate School will continue to discuss these with program faculty and seek ways to address the causes. At a broader level, however, and across all divisions, graduate students who identify as women reported lower satisfaction in response to the general questions:

- My own relationships and interactions with faculty are positive
- My program is responsive to student concerns
- Students in my program are treated with respect by faculty

And a similar pattern can be seen in response to specific questions about climate, to which graduate students who identify as women give lower ratings to the climate for women *as well as* for other groups of students:

Figure 5: Satisfaction with climate, responses from women



This also suggests the need for further investigation of the experiences of LGBTQ+ students; the same can be said for students with disabilities. The evidence for international students is more

varied, but particular issues that arise should be examined more closely by programs as they review survey results.

The data on HUG students does not suggest a single area of concern but raises questions about the experience of inclusion once these students joined their programs. Data from the life sciences suggests that women and HUG students report receiving less support for conference participation and publications. More generally, while the small number of HUG students in many programs makes reliable data on their assessment of climate challenging, a number express concerns about experiences of exclusion. Accordingly, national work on advising, such as the Culturally Aware Mentoring research study run by the Center for Improvement of Mentored Experiences in Research (CIMER) is piloting work on faculty training to effectively advise and mentor students from backgrounds different from the faculty member's own. Such initiatives highlight the importance of building faculty skills as advisors and mentors to support inclusive academic programs in which students will thrive.

In this context, we stress that there are some programs in which general concerns about climate appear to intersect with concerns about inclusion of students from historically underrepresented groups. When such challenges arise, programs and departments are sometimes uncertain where to turn for help. Robust, in-house resources from OIED and/or the Graduate School play an important role in assisting departments in their efforts to improve climate. While important efforts have been made in this direction, the University would benefit by regularizing such models of support.

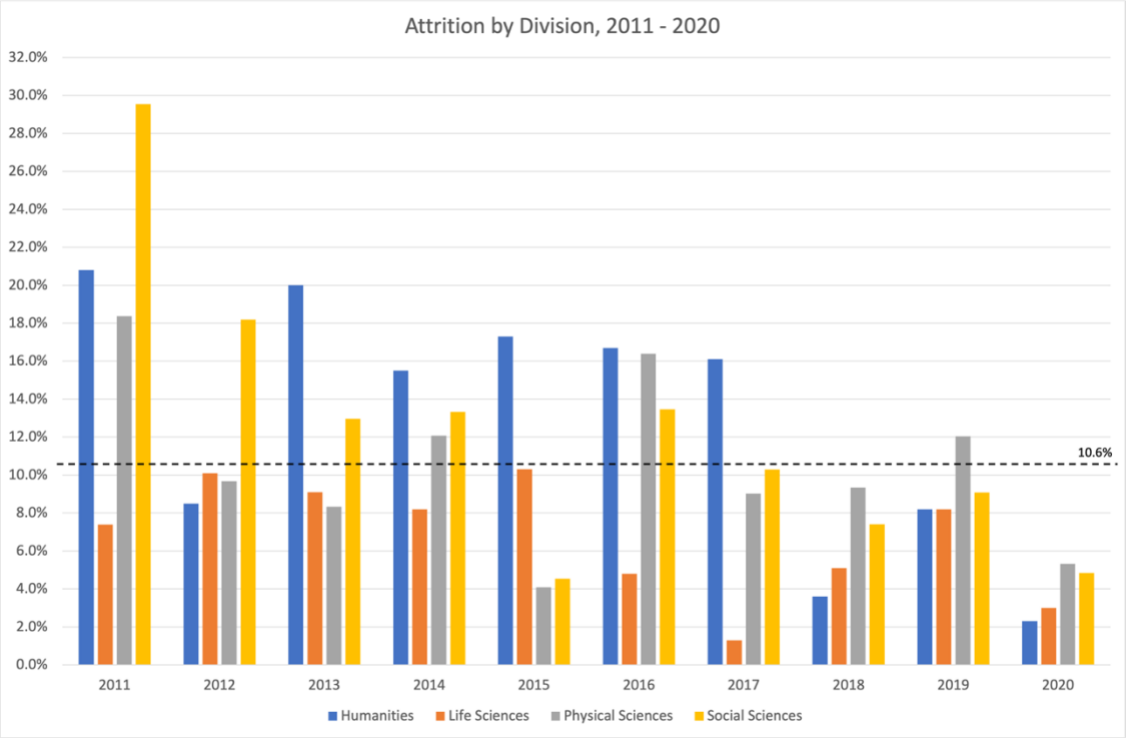
Attrition

In evaluating students' experiences, we also considered data on attrition, specifically the number of students who withdraw without attaining the PhD. Attrition has been a major topic of concern in recent national efforts to improve graduate education. We recognize that unexpected things can happen over the course of several years of a student's life: they may find coursework or other requirements challenging or unrewarding, or they may decide not to pursue a doctorate for personal or other reasons. But "late attrition," after four or more years in the program, is especially worrying. It represents a great deal of opportunity cost for the student as well as a loss of invested time and funding for the program and University. And it may well reflect challenges with advising and climate, as well as with the program's curriculum.

Appendix I includes detailed attrition data at the divisional level, by entering cohort and in terms of years completed. As can be seen in the figure below, the overall rate of attrition is relatively low (though of course this includes quite recently-matriculated students who may leave in future years). Of students entering from 2011 through 2020, several cohorts have had attrition greater than 20%: the Humanities in 2011 and 2013 and the Social Sciences in 2011 (at 29.5%). Several

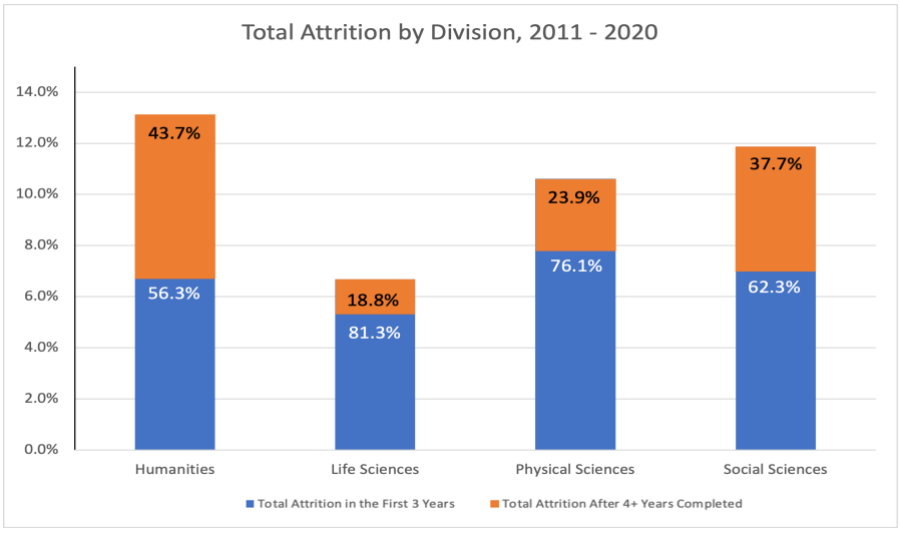
other cohorts have had rates greater than 15% (4 in the humanities, 2 in the physical sciences, and 1 in the social sciences).[16] The life sciences have consistently low attrition rates.

Figure 6: Attrition by division by entry year



The majority of the attrition does cluster in the first 3 years. Nonetheless, in the humanities and social sciences in particular, a significant fraction occurred after students completed 4 or more years in the program.

Figure 7: Attrition by number of years completed



[16] Note that in this data, students who are currently on leave are treated as attrition. For this reason, the numbers may be seen as somewhat inflated. We seek to improve this aspect of reporting going forward.

This late attrition is particularly costly to the students and to the University. Members of the task force speculated that the higher rates in the humanities may reflect students' increasing pessimism about the academic job market, or perhaps the isolation of dissertation work. More work needs to be done to understand the causes of this, but it is concerning insofar as high levels of late attrition represent significant investments on the part of students and the institution that are not producing the intended outcomes.

The task force also reviewed attrition patterns in relation to HUG and international status. In general, attrition for international students is relatively low. Evaluations in relation to HUG status are particularly tentative due to the relatively high fraction of students whose HUG status is not reported. Attrition rates among HUG students varied substantially across divisions and by gender, but HUG attrition did stand out in three areas: men in the humanities and women in the life sciences and physical sciences. Although the absolute numbers here are small, the data suggests the importance of sustained attention to attrition among HUG students, especially if this is related to issues of climate and culture.

Recommendations

The importance of excellent advising and mentoring to doctoral education can hardly be overstated: the guidance that faculty provide to students is the foundation of their professional training and shapes their experience in the program and beyond. The task force defines advising and mentoring quite broadly, to encompass the full range of intellectual and professional guidance provided to students over the course of their doctoral education.[17]

Even while acknowledging the differences in how advising and mentoring takes place in the lab-based and the more humanistic disciplines, it is possible to identify common themes and suggest strategies for improvement that can be implemented – and adapted, as appropriate – across programs. Our recommendations in this area can be summarized in broad terms. We should aim to:

- Make expectations for advising and student progress as explicit as possible.
- Recognize advising and mentoring as collective responsibilities that do not fall to a single faculty member.
- Foster a culture that values and rewards excellence in advising and mentoring.

We were also able to identify examples of effective advising and mentoring in several programs that receive high marks on this score. The following examples are not based on a comprehensive

[17] This is consistent with the observation in the Mellon report that "advising actually comprises, or should comprise, all of the interchange between faculty and students from orientation onward to graduation" (46).

survey but rather are meant to highlight effective strategies familiar to members of the task force. A number of these practices might be adapted for other programs as well.

Health Services Research
- has explicit guidelines related to the frequency of meetings and timely feedback
- requires all students, in consultation with faculty advisors, to complete an independent development plan that articulates short- and long-term objectives for academic and career development and a mentoring plan to achieve these goals
- encourages faculty to participate in mentoring training programs such as the Advance-CTR Mentoring Training Program

Earth, Environmental, and Planetary Sciences
- offers "meet the faculty" lunches to introduce students to a range of faculty
- includes a faculty member from a different subfield on each student's faculty advisory committee to provide feedback on professional development; this advisory committee is established when the student matriculates
- has a departmental ombudsperson with whom students can raise concerns

History
- admits only students for whom there is more than one potential adviser
- appoints a Director of Graduate Advising, separate from the DGS
- offers programs to introduce students to a variety of careers

Molecular Biology, Cell Biology, and Biochemistry
- assigns specific responsibilities to each member of the dissertation committee
- advises students about publication strategies and career opportunities in addition to dissertation work
- offers a seminar on scientific communication

Several common themes emerged from these examples. First, successful advising and mentoring rests on shared understandings of goals and responsibilities as well as clear benchmarks and timelines; these can be articulated explicitly in an advising agreement, individual development plan, or some other format. Articulating shared understandings also makes it clear that students themselves have an active role to play in ensuring a successful advising relationship.[18]

Second, we view advising and mentoring as the responsibility of the program, distributed across a number of faculty colleagues and provided in multiple venues; it is not simply a task undertaken by an individual faculty member and/or the DGS. On the AAU survey, only 52.9 percent of Brown respondents reported that having had a faculty member other than the dissertation advisor whom they considered to be a mentor who provided advice about their

[18] For this reason, some NSF-supported training programs include guidance about how to choose advisors and what to expect from them, and renewal of NIH grants depends in part on an assessment of the effectiveness of mentoring and assessment.

education, career development, or other matters of concern.[19] A number of programs are explicit about the role of the dissertation committee members in mentoring students. In some cases, peer advising programs can also play valuable roles.

A third observation is that effective advising and mentoring require an investment of time and effort—and a corollary to this is that such investment should be rewarded. Recognizing outstanding advisors through competitive prizes would make their efforts in this area more visible. While the task force agreed on the importance of rewarding good advising, there were a range of views on whether a faculty member's skill and investment in advising and mentoring should inform tenure and promotion decisions. On balance, the task force preferred to highlight the value of mentor training programs and to encourage creating more opportunities for all faculty to improve their advising rather than including this among the criteria for evaluation. Finally, task force members also stressed that greater attention to advising ought not inadvertently to increase pressure on the most vulnerable faculty, particularly pre-tenure faculty. These are among the reasons that we emphasize positive efforts to build overall faculty capacity proactively rather than to evaluate colleagues' performance in a comparative way.

Beyond broad efforts to foster a culture that prioritizes and rewards advising, however, we also see the importance of accountability. Holding faculty accountable for their advising, particularly substandard advising, is a particularly challenging issue. While Title IX procedures, incident reporting through the Office of Institutional Equity and Diversity (OIED), and the Graduate Student Grievance Process are designed to respond to harassment, discrimination, and neglect, problematic dynamics often fall below that threshold. Students depend on the support of their advisors and they are often understandably reluctant to pursue formal processes in all but the most extreme cases. Moreover, the size of a program may make anonymity elusive while also making it difficult to distinguish clear patterns.

Yet we encourage programs to be attentive to indirect indicators of student concerns, for example if there are patterns of students transferring away from a particular advisor or repeated informal complaints. Based on information of this sort, some programs have stopped admitting students to work with particular faculty or have had faculty pause their teaching of graduate-level courses. Such actions may be valuable in preventing concerns from growing into larger climate issues that affect recruitment for the entire department. Programs may also want to create opportunities to elicit confidential feedback from students about the quality of advising on a regular basis.

Beyond the department or program, we recommend close collaboration between the Graduate School and relevant faculty deans to develop more formal policies where possible and to encourage programs to be alert to possible student concerns and ensure that there are

[19] Note that this is one of the few questions where the Brown rating lagged the overall average, 57.7 percent.

mechanisms for reporting them. Where serious problems are documented, it is important to follow through in supporting the student(s) as well as minimizing opportunities for further inappropriate behavior. More generally, programs should work with the appropriate deans to exercise caution about admitting new students to work with faculty who have in the past not adequately fulfilled advising responsibilities.

Lasting improvements in this area will involve focused attention, ongoing review and honest self-reflection, as well as a sense of shared responsibility around common values. But we believe that this is possible, and indeed we already have an example of how to effect change even in areas where the forces of inertia are strong. Brown's Diversity and Inclusion Action Plan, and the broad institutional commitment to its success, have led to new administrative practices and brought about shifts in departmental cultures.

One last observation highlights the importance of advising and mentoring and underscores the need for faculty to devote thoughtful attention to these issues. In the course of our work, the task force held a series of meetings with graduate students and with faculty. In the meetings with graduate students, there was extensive discussion about advising: its uneven quality; the extent to which students can be dependent on a single advisor for support, including for funding; the potential for abuse that this engenders; the "whisper networks" that steer students away from certain advisors; and students' strong sense of the lack of accountability, limited avenues for registering complaints, and fears of retaliation.

These discussions contrasted rather sharply with the faculty forums, in which advising was mentioned only in passing. Incentivizing good advising is one side of the coin; the other is strengthening processes for addressing concerns and complaints. Students need to know where to go to discuss challenges they may be facing, ideally with multiple points of access in addition to the DGS, and programs need to have clear and consistent procedures for addressing complaints and grievances.

Summaries of the meetings can be found in Appendix B, and we conclude with this point in order to reiterate how critical the advisor-advisee relationship is to the entire enterprise of doctoral education. Our success in training the next generation of scholars rests on improving it.

Summary of recommendations regarding advising, mentoring, and climate

- Develop regular models for intervening in programs with climate challenges. OIED and the Graduate School should work together to develop teams to provide support.
- Make expectations for advising and student progress as explicit as possible
    - establish departmental expectations or best practices for advisors

  - use advising agreements/compacts and/or individual development plans to make expectations explicit and to track progress
  - ensure that information about expectations is readily available, e.g. in handbooks
- Recognize advising and mentoring as collective responsibilities that should not fall to a single faculty member
  - offer formal and informal advising in multiple venues and from multiple sources
  - consider creating additional roles for (e.g) career advising, complaint resolution
  - ensure that expectations around advising and mentoring do not fall disproportionately on untenured faculty
- Foster a culture that values and rewards excellence in advising and mentoring
  - encourage discussion of advising and mentoring practices
  - consider additional prizes and other forms of recognition
  - identify and expand resources for faculty to use to improve mentoring practices
  - document when faculty engage in mentor training
  - develop mechanisms for accountability by strengthening procedures for addressing concerns and grievances
  - track instances in which students leave one advisor for another
- Make the establishment of a supportive culture and the provision of equitable opportunities central to program priorities.
- Relevant deans (e.g., in the School of Public Health, Dean of the Faculty, and Graduate School) should develop clear guidance for departments chairs and Directors of Graduate Study for reporting concerns about advising.
- Programs should work with the appropriate deans to avoid admitting new students to work with faculty who have not adequately fulfilled advising responsibilities.

VI. Interdisciplinarity

Across our conversations with students and faculty as well as within the task force itself, interdisciplinarity repeatedly emerged as a distinctive feature of a Brown education, with deep roots in institutional culture. As with the Open Curriculum for undergraduates, the opportunity for both formal and informal collaboration, including across fields, is a hallmark of doctoral education at Brown. This takes many forms for students: enrolling in courses in other departments; completing doctoral certificates; earning master's degrees in another discipline through the Open Graduate Education program; and engaging with interdisciplinary centers and institutes such as the Carney Institute for Brain Science, the Center for the Study of Race and Ethnicity in America, and the Cogut Institute for the Humanities.

Not all of these are genuinely "interdisciplinary," and there is danger in using the term too loosely. Nonetheless, in many aspects of graduate education at Brown, we see collaborations across traditional disciplinary boundaries that enhance the quality of doctoral education by providing opportunities for genuinely pathbreaking work. We view such work as a distinctive attribute of how we are able to train students by contributing to their ability to bring multi-disciplinary attention to bear on pressing challenges, as exemplified by research in the Institute at Brown for Environment and Society, and by fostering the development of emerging fields that span traditional disciplinary divides, such as computational biology.

Interdisciplinary collaborations also build and sustain intellectual community; this is particularly important in light of the smaller scale of many of Brown's programs. And they enable mentoring by faculty outside of a student's program, with this extending in some cases to broadening the membership of dissertation committees. In this and other cases, such initiatives combine the individualized attention of small programs with the critical mass made possible by bringing together groups of students and faculty with similar interests.

The "fields of advanced specialization," known colloquially as doctoral certificates, for instance, enable students to demonstrate their knowledge of an interdisciplinary area that is distinct from the field of the PhD by completing a number of related courses and undertaking a specialized project of some kind. Established in 2016, there are now 14 such certificates offered, ranging from Early Cultures to Data Science. To date, 65 students have completed certificates.

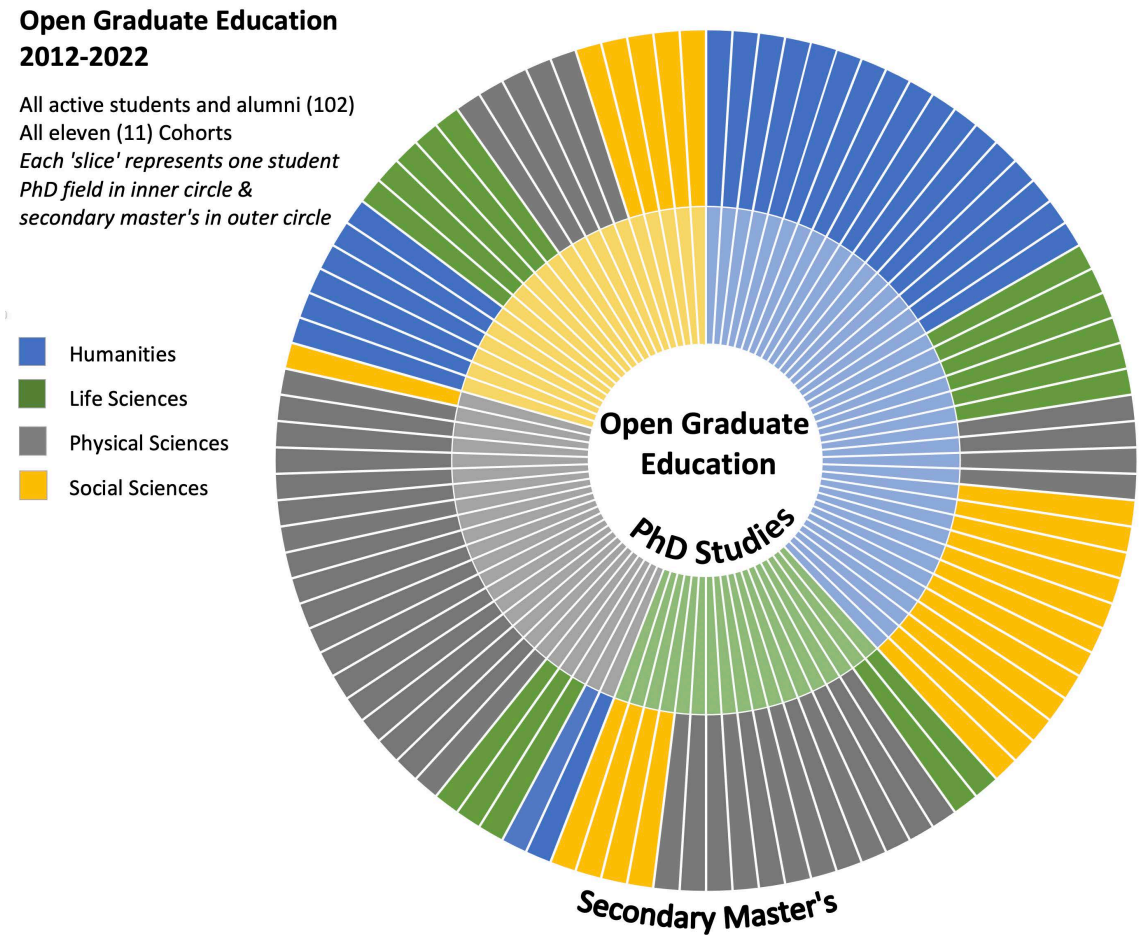
The Collaborative Humanities Doctoral Certificate program in the Cogut Institute for the Humanities is an excellent example of the way that certificates can support cross-departmental intellectual community. Cogut serves as an intellectual hub for many faculty across the humanities as well, who offer graduate seminars in the Collaborative Humanities certificate program and team-teach undergraduate seminars on cross-disciplinary topics. A large majority (89 percent) of these faculty reported that collaborative humanities teaching had an impact on their own research. And for those graduate students who participated in the Collaborative

Humanities program, no less than 98 percent said that their work in the program contributed to the development of their doctoral research. (See the discussion and summary in Appendix J.)

To support this sort of work, we should invest strategically in units such as Cogut and other intellectual hubs to create more opportunities for interdisciplinary exploration through, e.g., fellowships that enable students to participate in center- and institute-based programming that enriches their education, supports excellence in research, and creates a shared scholarly community. The fact that such benefits accrue to faculty as well as students only increases the value of such investments to the larger research enterprise.

The Open Graduate Education program is another distinctively Brown opportunity. In completing a separate master's degree, doctoral students broaden their education by acquiring expertise in a related field and also earn a credential that ideally increases their competitiveness for certain types of post-graduate opportunities. The Open Grad program facilitates precisely the type of interdisciplinary work that we are suggesting could be expanded: three-fifths (60 of 102) of those who have completed a secondary master's degree have done so in a program in a different division from that of the doctoral degree.

Figure 8: Open Graduate Education: Areas of doctoral degree and secondary master's degree



At the same time, input from faculty forums and from the task force itself highlighted structural and administrative constraints that sometimes face students seeking various forms of interdisciplinary engagement. For example, undergraduate teaching needs in a student's department can impede their ability to build expertise through TAing in centers, institutes, or cognate departments. In those disciplines where financial support is primarily from grants, there may be little incentive for an advisor to encourage students to pursue opportunities to work across disciplines. Finally, in some programs, course requirements and other program expectations limit opportunities to take courses outside the program. As programs review curricula, as recommended above, they should be attentive to creating the space for students to pursue extra-departmental and interdisciplinary opportunities, as appropriate.

A further set of issues repeatedly emerged regarding programs that span units or schools. Because of differences in funding and other policies between the Graduate School and the Division of Biology and Medicine, students are subject to different policies depending on where their primary advisor is appointed. Differences can involve incentives for student-won external grants, application processes for travel funding, and TA opportunities. Though there are good reasons to preserve certain policy differences across units, greater alignment and coordination of policies and practices—where possible—could be valuable in mitigating students' experiences of differential statuses within the same program. It may also reduce barriers to the formation of other cross-unit programs that could advance Brown's distinctiveness and research agenda.[20]

Summary of recommendations regarding interdisciplinarity

- Secure financial support for the Open Graduate Education program, to ensure its continuation when Mellon Foundation funding ends and to permit modest expansion.
- Increase opportunities for Doctoral Certificate participation, by providing competitive Fellowship appointments—in place of TA appointments—to free up time for the additional coursework required.
- Prioritize sustaining and selectively increasing financial support for programs and programming directed toward graduate students who undertake work in centers and institutes.

[20] At present, the concerns we heard about challenges are limited to a small number of programs; yet the importance of being able to support interdisciplinary training among graduate students suggests that the issues are important to address. The three programs currently affected are Biomedical Engineering (which spans BioMed and the School of Engineering), Neuroscience (which includes trainers in BioMed and in CLPS, which is funded by the Graduate School), and Computational Biology (which, as of 2021-22, is housed in the Center for Computational Molecular Biology but is funded by both BioMed and the Graduate School).

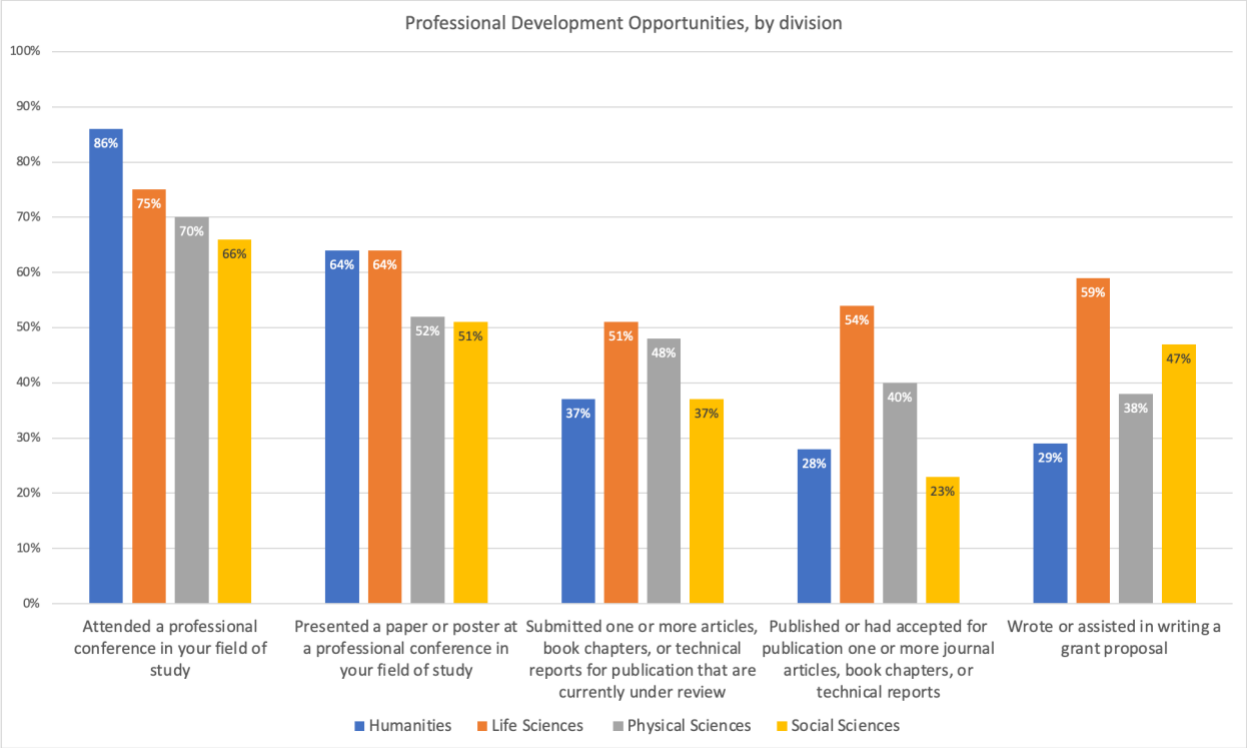
- Pilot structured opportunities for centers and institutes to fund regularized TAships for students in related doctoral programs. For example, IBES is developing such a pilot with the Department of History to support work and students in environmental history.
- Explore models for awarding one or two semesters of fellowship funding to allow students in fields that are externally funded to pursue interdisciplinary work that could not be supported while on "typical" funding, e.g., a faculty member's research grant.
- Encourage doctoral programs—as they review their structure, coursework, and other requirements—to consider the intersection of requirements and students' ability to participate in interdisciplinary opportunities.
- Pursue greater alignment of policies around student funding and other student opportunities across the Graduate School, the Division of Biology and Medicine, the School of Engineering, and the School of Public Health.

VII. Professional Development

Graduate education consists of more than the program's curriculum, advising, and engagement with other academic units. Across institutions and within disciplines, we are seeing increasing emphasis on a broad range of professional development activities and opportunities.

A review of the Doctoral Education Survey suggests that there is variation across programs and divisions in terms of opportunities for students to attend conferences; present papers; submit and/or publish articles, book chapters, and technical reports; and assist in the preparation of grant proposals.

Figure 9: Professional development opportunities, by division



And in every division, students give the lowest marks for pedagogical training:

Table 6: Pedagogical training, by division

	Humanities	Life Sciences	Physical Sciences	Social Sciences
Quality of graduate-level teaching by faculty	3.9	3.8	3.7	3.8
Quality of academic advising and guidance	3.6	3.8	3.8	3.7
Developing me as a scholar	3.6	4	3.9	3.5
Developing me as a teacher	3.2	3.1	3.2	2.8

One troubling observation is that women and HUG students in some divisions reported fewer opportunities for professional development.[21] While the results varied significantly across divisions, and the numbers of respondents is sometimes low, we urge programs across divisions to review the Doctoral Education Survey carefully and to ensure that adequate and equitable opportunities for professional development are provided to all students.

Of course, many programs already host a variety of workshops and even entire classes on professional development. We also recognize that important aspects of support in this area are most appropriately offered centrally, as in the teaching certificate programs hosted by the Sheridan Center for Teaching and Learning. There is no point in duplicating that work. Nonetheless, judging from the Doctoral Education Survey and the feedback in student meetings, there appear to be opportunities to build up and regularize programming at the local level that complements what is offered through Sheridan Center and CareerLAB. Departmental workshops—or collaborations between similar departments –may focus, for instance, on discipline-specific advice regarding teaching, conference presentations, publications, and job searches.

In recent years, professional development for students from historically underrepresented groups in the sciences has also been supported by the Initiative to Maximize Student Development (IMSD). Funded by a grant from the National Institute of General Medical Sciences of the National Institutes of Health, the IMSD program provides a distinctive advising plan and support structure for students throughout their time at Brown. IMSD has been highly successful in supporting students to completion and launching them into careers.[22] Students in the sciences have been shown to benefit not just from the scaffolding of professionalization and training opportunities provided by IMSD, but also from the sense of community and belonging that the program fosters. Extending this model to disciplines where programs and cohort sizes are smaller can help to minimize feelings of isolation experienced by HUG students in the humanities and social sciences while strengthening the potential for networking across departments. Though this does not replace professionalization offerings by individual departments and programs, it can reduce redundancy and limit faculty workload and/or allow for more depth in areas that are unique to particular subfields.

[21] Note that the number of respondents who identified themselves as HUGs was quite low, especially when data is sorted by program or even division, which makes it difficult to draw firm conclusions.

[22] Campbell, A.G., Thompson, N.L., Duncan, M. *et al.* Improved and Sustained Graduate Programs Diversity Outcomes: a 10-year Analysis and Summary of the Brown University IMSD Program. *Journal for STEM Educ Res* **4**, 257–277 (2021). https://doi.org/10.1007/s41979-021-00057-z

Career Support and Advising

As has been discussed, data from the Doctoral Education Survey as well as feedback from meetings with graduate students and with faculty consistently highlighted the need for increased career support and advising.

The percentage of students responding to the Doctoral Education Survey who reported having received assistance and support on "non-academic career planning" is among the lowest scores on the survey, particularly in the humanities and social sciences. The percentage who said that they had received assistance or support in "academic career planning" ranges from 70% (in the humanities and in the social sciences) to 74% in the life sciences. These numbers have trended slightly upwards in recent years, but it is important to see them continue to rise.

Table 7: Evaluations of career guidance, by division

	Humanities	Life Sciences	Physical Sciences	Social Sciences
Academic career planning	70%	74%	72%	70%
Non-academic career planning	52%	74%	65%	57%

The most significant concerns center on planning for careers beyond the professoriate for graduates in the humanities and social sciences. In the series of meetings we hosted, both faculty and students consistently and emphatically called for more robust assistance in this area. It is unlikely that faculty themselves will be the best sources of advice for opportunities beyond academia, given their own career trajectories; indeed, they frequently noted their inability to be effective in this role. The task force therefore supports developing centralized resources along the lines of what peer institutions provide. As noted, Princeton has a GradFUTURES office within the Graduate School to complement the resources that exist in central career planning offices. Columbia has launched GSAS Compass, which currently involves two full-time staff in the Graduate School, as well as plans for two more in the near future.

We are gratified that CareerLAB has recently hired an Assistant Director of Career Counseling to focus on graduate students but believe that substantially more investment in this area is needed. Such centralized support might be provided through CareerLAB in consultation with the Graduate School or spearheaded by a joint venture between the Graduate School and the School of Professional Studies.

On a related note, we also heard from faculty and students alike that more support for critical skills such as writing would be very welcome. Expanding services offered by the Writing Center to graduate students mirrors the model suggested above for CareerLAB.

Summary of recommendations regarding professional development

- Extend the model of scaffolded support for HUG students that has been successful in IMSD to the humanities and social sciences.
- Regularize departmental workshops on pedagogy specific to the discipline. Coordinate these workshops with offerings from the Sheridan Center on Teaching and Learning, so as to reduce duplication.
- Expand resources for students seeking career advice
    - offer programming to introduce students to diverse careers
    - identify people and offices to contact
- Increase investments in centralized resources for career planning and advising for doctoral students, whether through CareerLAB (in close coordination with the Graduate School) or through a joint venture between the Graduate School and School of Professional Studies.
- Expand capacity for graduate student support in the Writing Center.

VIII. Conclusion: Investing in Excellence

Our review of doctoral education at Brown has identified important strengths as well as areas that require attention and investment. The recommendations call for intentional engagement at the program level as well as at the level of the Graduate School and University to make lasting improvements where necessary. This will require targeted changes in practices as well as a renewed commitment to common values.

In this conclusion, we address a series of overarching considerations that do not fall neatly into the preceding sections, and highlight the stakes and opportunities for commitment to doctoral education at Brown.

Criteria for assessing doctoral programs

After reviewing extensive data, one of our most important conclusions was that no one or two metrics alone can be taken to indicate the strength of a graduate program: careful assessment involves attention to a range of quantitative and qualitative factors and to the interrelationships among them. It requires judgment about what constitutes outstanding graduate training and innovative work in the context of a particular discipline. It needs to be informed by internal considerations such as admission-related metrics, climate, quality of training and advising—and also by external factors such as competitiveness with peers and placement outcomes. We consider review processes to be fundamental to assessment and accountability and recommend the following questions be among those included in reviews:

- How deep is the applicant pool and how competitive are admission and yield?
- Are curricular requirements robust, flexible, aligned with the state of the field, and reviewed regularly?
- How diverse is the current student population and is there evidence of a supportive and inclusive climate?
- Are advising and mentoring practices strong?
- What grant funding is available to support students?
- Are students able to take advantage of interdisciplinary opportunities (as appropriate)?
- Are placement outcomes aligned with students' aspirations for professional success?

Finally, decisions about the investments that may be required to support excellence need to be informed by institutional needs and considerations. Any case for growth in program size should be evaluated in relation to the factors above but also in conjunction with broader University priorities:

- Does the program align with strategic priorities and is it in an area already designated for investment?

- How does the size of the program compare to those of peers, in absolute numbers as well as ratios and funding?
- In what ways will a larger doctoral cohort contribute to expanding faculty research?
- What types of infrastructure and other investments will be required if the graduate program expands? How will these be funded?
- Is there evidence that a larger cohort can be self-sustaining, i.e., through increased grant funding?

Infrastructure

The task force was also attentive to the administrative structures in place to support doctoral education. In this context, it is important to note that we did not hear larger concerns about the current overall structure of the relationships among the Graduate School, the Dean of the Faculty, the Division of Biology and Medicine or the Schools of Engineering, Professional Studies, and Public Health. Yet we recognize the significance of a broader context for thinking about a range of institutional structures and have provided a more extended discussion of these issues in Appendix K.

We did, however, hear about and discuss three major topics that rose above the level of individual programs and that rise above the horizon of the student life cycle. Although they are importantly different, they can each be considered aspects of infrastructure, in a broad sense:

Directors of Graduate Study

In meetings with faculty and discussions within the task force, the importance of the role of the Director of Graduate Study (DGS) arose repeatedly, including the ways that responsibilities are perceived to have expanded and shifted in recent years. Faculty report that students now bring a range of expectations and needs that are different from those of students a generation ago. Several factors appear to have contributed to this: students from a wider range of backgrounds, widespread uncertainty and unease about academic job prospects, and generational transformations in self-understanding and expectations about institutional support. DGSs frequently serve, at a minimum, as the point of first contact in addressing students' needs.

The specifics vary across programs and individuals, of course, yet many colleagues—from different divisions and Schools—expressed concern about the increased weight of the role. In humanities and social science departments that have recently moved from a 2-2 to a 2-1 teaching load, the concern has been particularly intense, since that shift was viewed as "eliminating" a

course release for service as DGS and, for some, suggesting less institutional recognition for the role.[23] Yet the concerns we heard about the DGS role were not limited to those departments.

The task force recognizes that appropriate solutions to these challenges will necessarily vary across programs. In that context, we suggest programs should seek, where possible, to disaggregate the range of functions that have historically been covered by the DGS. The admissions process, for instance, can appropriately be overseen by a director of admissions and recruiting, rather than the DGS. Additional distribution of responsibilities will depend on the scale of the program. We also recognize that, even with the disaggregation, the DGS role will—in many cases—continue to be a major service role. We endorse recent efforts by the Dean of the Faculty to offer additional support to DGSs.

Supporting Social and Intellectual Community

In meetings with current students, there was tremendous enthusiasm for a graduate student center. We understand that the Graduate Student Council has been advocating for a student center for some time and that the administration is moving ahead with plans for this. The task force supports these efforts and views them as important to cultivating social and intellectual community among graduate students at Brown. We note that it may also be worth exploring whether some of the resources offered to graduate students, for example career advising and writing assistance, could productively be housed in such a center.

No less importantly, we heard mixed accounts of whether graduate students feel included in Centers such as the Undocumented, First-Generation College, and Low-Income Student (U-FLi) Center and the LGBTQ Center. Such centers can play a particularly important role in supporting the inclusion of students with marginalized identities, and we endorse efforts to involve graduate students in these centers.

Data needs

Finally, being able to make data-driven decisions about priorities for future investments requires extensive, reliable data, including comparative data. The work of the task force has relied heavily on the Office of Institutional Research and the Graduate School for an array of comprehensive data on Brown's doctoral programs as well as some comparative data on peer programs. At the same time, we identified a number of areas where additional data would be particularly helpful, including about students' career aspirations, comparisons between our

[23] A separate set of conversations involving representatives from the offices of the Dean of the Faculty and the Dean of the Graduate School and Directors of Graduate Studies in those departments, took place in spring 2022 and has resulted in a series of recommendations for addressing concerns about workload. A second phase of this process, focusing on programs in the life and physical sciences, is taking place in summer 2022.

students' academic placements and those of peers, distinctions among different outcomes in the broad range of careers outside academia, and—perhaps especially--information about students' own assessments of their careers and the extent to which they are fulfilling and make use of the skills and knowledge they have acquired through their doctoral education. One modest effort Brown could undertake to improve the quality of comparative data would be to make more of our own information transparent and available. See, for example, the information that Princeton provides.

***

Over the course of our work, the task force has documented manifold strengths across Brown's doctoral programs and identified important and exciting opportunities for enhancement.

Seizing these opportunities will involve sustained, coordinated efforts that address each stage and facet of doctoral education—from admissions through launching students into their careers and from each program's core requirements through opportunities for training in complementary fields and skills. No one or two interventions will do the work for which we are calling. The commitment will need to be multi-dimensional and broadly shared, engaging individual faculty and programs as well as the Graduate School and other units that support multiple PhD programs.

The recommendations involve building upon those qualities that already make Brown distinctive: a culture of interdisciplinarity, an openness to new approaches and methods, support for independent student learning in the context of a multi-generational scholarly community, and an enduring commitment to diversity and inclusion. We call for being more intentional about how we advance these values at the doctoral level. Doing so is essential to building and sustaining graduate programs that advance research and lead developments across multiple disciplines, as well as contribute to attracting and retaining world-class faculty and fully supporting our undergraduates.

We are confident that these recommendations will, if thoughtfully implemented, promote outstanding, innovative doctoral education that prepares Brown PhDs to play leading roles in their fields and advances Brown's mission of "discovering, communicating and preserving knowledge and understanding in a spirit of free inquiry."

Appendices

APPENDIX A

TASK FORCE ON DOCTORAL EDUCATION

CHARGE

Attracting, training, and mentoring the very best graduate students is critical to the University's mission and to its ambitions. Outstanding doctoral education is integral to the goals set forth in the University's two most recent strategic plans: the Plan for Academic Enrichment and Building on Distinction. Further enhancing Brown's excellence as a research university requires excellence in graduate education.

To this end, the Task Force on Doctoral Education at Brown University is charged with developing recommendations for promoting outstanding, innovative graduate education that supports the University's excellence in research and teaching while also preparing graduates for desired career outcomes. A particular concern will be how to structure collaboration between the Graduate School and other units, specifically the Dean of the Faculty, the School of Engineering, the School of Public Health, and the Division of Biology and Medicine.

In focusing on program excellence and the best way to organize the relationship between the Graduate School and individual graduate programs, the task force will build on the University's recent additional commitments to graduate student funding and the Graduate School's expanded support for the "whole student." Though student experience will be considered, it will not be a central consideration for the task force.

In order to ensure that the task force is forward looking, not simply emulating past models, the group will commit time early in the process to educating itself further on the current landscape of graduate education and likely scenarios for the near future.

More specifically, the task force is asked to make recommendations in three areas:

1. Elements of Excellence: The task force is charged with identifying key elements of excellence in doctoral education and developing strategies to advance these at Brown. At a minimum, the task force should consider the following areas:
   - Curricular revision designed to achieve greater educational training excellence and closer alignment with post-training placement (e.g., expectations regarding the number of courses or recommended exam structures);
   - How to promote inclusion of historically underrepresented groups and to foster research in historically understudied research areas;
   - How to encourage and support cutting-edge work in fields;
   - Best practices in graduate advising; and
   - Extra-departmental opportunities, such as the Open Graduate Education program, Doctoral Certificates, and proctorships.

2. Institutional Structures: The task force is charged with defining the most effective structures of collaboration between the Graduate School and the Dean of the Faculty, School of Engineering, School of Public Health, and the Division of Biology and Medicine.

3. Accountability: The task force is charged with examining how we appropriately hold programs accountable for their improvement, as well as whether the institution would benefit from additional mechanisms to support faculty and to hold faculty accountable regarding their oversight of graduate students.

MEMBERS

The task force will be composed of both faculty and graduate students and will be informed by consultation with distinguished doctoral graduates working in and beyond academia. Faculty membership will include faculty with records of excellence in advising and placing graduate students, as well as more junior faculty closer to their own graduate experiences. The graduate student members will also collect input from other students through structures such as focus groups.

Thomas A. Lewis, Associate Dean of Academic Affairs and Professor of Religious Studies, will chair this task force, which will be staffed by Elizabeth M. Doherty, Deputy Provost for Academic Affairs. The task force will be composed of the following faculty, graduate students and administrators:

- Amanda S. Anderson, Andrew W. Mellon Professor of Humanities and English, Director of the Cogut Institute for the Humanities
- Ugur Cetintemel, Professor of Computer Science, Chair of Computer Science
- Nitsan Chorev, Harmon Family Professor of Sociology, Director of the Graduate Program in Development, Professor of International and Public Affairs
- Theresa M. Desrochers, Rosenberg Family Assistant Professor of Brain Science, Assistant Professor of Neuroscience, Assistant Professor of Psychiatry and Human Behavior
- Rachel E. Kalisher, PhD Student in Archaeology and the Ancient World
- Sagen Y. Kidane, PhD Student in Sociology
- Savvas M. Koushiappas, Associate Professor of Physics
- Lawrence E. Larson, Sorensen Family Dean of Engineering, Professor of Engineering
- Brian W. Meeks, Professor of Africana Studies
- Carolina Mejia Peña, PhD Student in Molecular Biology, Cell Biology, and Biochemistry
- Alycia Mosley Austin, Associate Dean of Diversity and Inclusion
- Kimberly L. Mowry, Robin Chemers Neustein Professor of Biomedicine, Chair of Molecular Biology, Cell Biology and Biochemistry
- Joel W. Revill, Senior Associate Dean of the Faculty, Associate Provost for Special Projects, Interim Chair of Portuguese and Brazilian Studies
- James M. Russell, Professor of Earth, Environmental, and Planetary Sciences, Chair of Earth, Environmental, and Planetary Sciences
- Robert O. Self, Mary Ann Lippitt Professor of American History
- Amal N. Trivedi, Professor of Health Services, Policy and Practice, Professor of Medicine
- Audra van Wart, Director of University Postdoctoral Affairs, Associate Dean for Training and Program Development Division of Biology and Medicine and Director, University Postdoctoral Affairs, Assistant Professor of Medical Science

Reference page:
I. Introduction, 1

APPENDIX B.1

Meetings with Directors of Graduate Studies December 13 & 14, 2021

The Task Force on Doctoral Education invited Directors of Graduate Studies to meet with members of the group, to describe their experience working with Ph.D. students and to discuss ideas for enhancing excellence in training the next generation of scholars. Two meetings were organized, to be held via Zoom, with one session intended primarily for DGS in the life and physical sciences and the other for those in the humanities and social sciences. The invitation to the meeting included a few broad questions to orient the discussion:

- Are we attracting and retaining diverse and excellent students?
- Do we foster an inclusive climate and supportive culture?
- Are we training students well for a variety of career outcomes?
- Are we helping them to attain professional success?

And attendees were also encouraged to consider topics such as best practices for advising and mentoring, innovative curricular opportunities, strategies for pedagogical training, and effective guidance for academic and non-academic careers.

At the beginning of each session, Lewis provided an overview of the work of the task force to date and introduced members who were present before opening the floor for discussion about strategies for improving doctoral education. Although a number of similar themes arose at both meetings, there were variations in terms of content and emphasis. A summary of each session follows.

December 13 (primarily Life & Physical Sciences). Attendees first discussed the challenges associated with increasing diversity among students. Programs have made strides in attracting more diverse applicant pools, but there is intense competition for recruitment and admitted HUG students with multiple offers frequently choose to attend institutions that are more highly ranked, or that have larger programs. Strategic use of Presidential fellowships has proven effective in some cases, and emphasizing the advantages of Brown's smaller size, flexibility, intensive mentoring, and collaborative ethos can help with recruiting. But there are also issues in terms of expanding the overall pool of qualified HUG students. In some fields, there are simply very few of them. In others, those who have had fewer opportunities to do research as undergraduates may not be competitive for admission. One approach might be to build the pipeline by developing pre-Ph.D. "prep" programs in which less-well-prepared students can build research skills that will make them attractive candidates for admission at Brown or elsewhere. Finally, there was some discussion about whether we ought to expand the definition of diversity: in addition to U.S. citizens from historically underrepresented groups, should it also include gender and sexual identity, international students, etc.?

We should also think about the challenges faced by non-traditional students, including those with family responsibilities and the attendant financial pressures. During the turn to remote learning as a result of the COVID-19 crisis, for example, some graduate students were unable to afford laptops, which caused enormous stress. Should we do more to increase support for high-need graduate students, as we have done for undergraduates, for example with need-based stipends? A failure to recognize socioeconomic differences can reinforce inequities and contribute to a less inclusive environment. It was also noted that in some cases we ask students who are HUGs or members of previously-excluded groups to do the invisible labor of assisting with recruitment and retention without compensating them for this service.

The discussion turned to the quality of training and especially to strategies for lowering barriers to success. As doctoral students have become more diverse in racial, ethnic, and socioeconomic terms, there is also more variation in terms of the preparation that they have for graduate school. We ought to be more thoughtful about providing opportunities for students to build skills, especially in quantitative areas such

as programming and coding. Are we doing enough? Anecdotally, there was a sense that some students choose larger programs because they believe that larger or more well-resourced universities will provide more and better training. There are also opportunities available at other institutions that Brown students are able to access; it would be desirable to have central budgetary support for such professional development opportunities. The IMSD program was cited for its success in anticipating students' needs and addressing them; perhaps it should be expanded.

Participants acknowledged that we should be training students for a variety of career outcomes but noted that faculty members are not especially well-suited to advise students about careers beyond academia. More support from the Graduate School and the Career Lab would be welcome, and a number of programs bring back graduates who have chosen non-academic options to discuss their career paths with current students and to help them establish professional networks. More assistance with tracking alums would be helpful in expanding such programming, as would funding for workshops and the like. The History Department has created a dedicated director of career advising (in addition to the DGS) and is facilitating proctorships in public history with local organizations. Expanding such opportunities would be desirable, but there is also some reluctance to create separate tracks to train students for academic versus non-academic careers. It may also be worth exploring whether students could be paired with a mentor who has already graduated and is able to offer advice about life beyond graduate school.

Finally, there was a brief discussion of the role of the DGS more generally, which some participants regard as having become more burdensome in recent years as administrative tasks have proliferated and students' needs and expectations have increased and we have become more attentive to supporting them. Given the expansion of responsibilities, is the role of DGS compensated appropriately? Is there adequate staff support to assist with administrative work?

December 14 (primarily Humanities and Social Sciences). On the topic of recruiting and retaining diverse and excellent students, participants noted several concerns. First, there are pipeline issues, with very low numbers of HUG students in some fields. Pre-doctoral programs with intensive training (e.g. in language skills) could help build larger and more diverse pools, as could early targeted outreach to undergrads who might be encouraged to pursue a Ph.D. An issue that is particularly acute for small programs is the outsize impact of faculty reputation: the departure or retirement of a single senior colleague can create challenges with recruiting due to perceptions about loss of prestige. Another is that in small programs, HUG and other students can feel isolated. One strategy for enhancing inclusion is to adopt a broader definition of cohort in order to bring students from a number of smaller programs into a larger community. Programs should also be encouraged to ensure that graduate admissions committees coordinate their work with that of the DDIAPs. Finally, it was noted that a more diverse cohort of students can increase advising needs in some subfields.

There was also some concern about what is viewed as an overly narrow definition of HUGs. Many programs are actually more diverse than they seem, if one were to take into account first-generation students, those with disabilities, LGBTQ students, international students, and others.[1] Can Brown work with other institutions to expand the definition used internally and externally by the NIH and others?

Are we training students well and preparing them for a variety of careers? The weak job market is a particular issue in the humanities, and students are expressing greater interest in non-academic options. Some programs are responding to this by (e.g.) creating proctorships, internships, and externships. The University has increased opportunities for exploration through the BEST program and other initiatives.

[1] It was also noted in both meetings that the category of "Asian" is overly broad and obscures different groups within that population.

But more investment in this area is required, and it is also not clear whether the curriculum ought to change as students' career goals evolve. It does seem, however, that there should be changes that reflect the more diverse student population as well as changing professional expectations. This could include instituting new requirements (a course on race, for example), eliminating old ones (for facility in languages that are rarely used), or better training (writing was mentioned as a particular area of concern, and summer funding for academic training would also be welcome), or more support for professional development (workshops, alumni connections, etc.). Also, the reward structure of the University does not necessarily reflect the wider range of our graduates' professional pursuits: press releases typically highlight academic prizes and publications, and this signals to students the types of outcomes that are valued. Several participants noted the need for departmental autonomy in terms of determining what sorts of curricular changes are appropriate and which forms of support are desirable. Lewis observed that curricular and other changes in the sciences have often resulted from changes in NIH/NSF expectations. What are the incentives in other fields?

Two other issues surfaced throughout the meeting. First, there was discussion about the workload of the DGS and the fact that it is not compensated, with many participants expressing concern about this. Second, there was a refrain about how to frame the broader issue of diversity. A number of participants underscored the importance of fostering an inclusive climate and the need to be attentive to how culture is produced and reproduced, and how the architecture of rules and policies can either reinforce or change community norms and also establish standards and mechanisms for accountability. They moreover observed that students and faculty are not necessarily aligned in terms of their perception of DEI issues in their programs: faculty may feel that they have made major changes, but if students are not experiencing them as supportive this obviously affects the climate and can be an impediment to recruiting and retaining diverse students. It seems evident that we need to do more to establish common expectations for mentoring and support. It is also clear, though, that the experience of the last 18 months has exacerbated stress and complicated efforts to build an inclusive community; the strain of remote teaching and learning and the attendant decline in community may also have provided an excuse for not confronting DEI issues.

Reference pages:
II. Overview of the Work of the Task Force, 6
V. Advising, Mentoring, and Climate, 31

APPENDIX B.2

Task Force on Doctoral Education

Faculty Commons – Distillation of comments and themes

The points below draw from both meetings:
Monday February 28, 2022 (focused on life sciences and physical sciences)
Wednesday March 2, 2022 (focused on humanities and social sciences)
The announcement text can be found at the bottom of this document.

On recruiting students:

- Extensive interest in summer and postbacc programs through which students develop a relationship with Brown by having research experiences with Brown faculty. This can be an important recruitment strategy. Leadership Alliance is a valuable model. Consider collaborations with MSIs
    - Could also include funded Master's programs
    - Particularly important for recruiting HUG students
- The importance of consistent cohort sizes
- Some resignation: "We're just going to lose to Harvard and Stanford."
- The limited number of admissions slots is a barrier to recruiting our top candidates, esp. HUG students. We end up trying to game the system. We want more flexibility in recruiting students.
    - A suggestion to create two pools of admissions slots, one for harder-to-recruit students (e.g., HUG) and one for others
    - Should we be asking students the likelihood of their attending?
- Challenges of recruiting diverse students
- The cost of the application as a barrier to inclusion. Others emphasized the importance of the fee waivers that already exist. Opportunities to advertise fee waivers more broadly.
- Resources for recruitment
- The importance of support packages, especially for first-generation students. Transitional funding, funding for laptops, etc.
    - Consider enhanced funding packages for first-gen students
- Logistics of setting offers and reviewing them
    - Mixed views on making all offers at once or staggered offers
    - Concerns about departmental control of this process
    - Concern about overreach in review of admission offers

On program size

- Small cohorts are a challenge
    - for recruiting top students, for seminars, for department climate [humanities]
- Some would like to grow some; others simply don't want to shrink
- Unclear process for getting the program size increased
- Need more reassurance that there is not a hidden agenda
- in considering cohort size, we should also consider how deeply embedded graduate education is with the rest of Brown's academic activities: e.g., the role of graduate

students in research, in teaching, and in teaching support (HAs, etc.), and how all these things are organically connected with one another

On experiences in the program

- Formal opportunities for feedback on particular advisors (rather than a whisper network)
- Structures to support students moving to another advisor (esp. in grant-funded fields) after one advising relationship is not working
- The value of NIH mentor training

On inter- and cross-disciplinary opportunities

- Open Grad is great. It would be good to grow
- Also important to have formal opportunities that are less commitment than a Master's (e.g., Certificates). Perhaps these should grow.
    - But there is also some concern about an emphasis on a multiplying of credentials
- Cross- and interdisciplinary opportunities are more limited than is often suggested. Consider working on some of the structural limits to interdisciplinarity
    - TAing in other departments
    - Graduate-level interdisciplinary seminars or series
    - Something like Cogut for the social sciences
    - Barriers to taking courses in other departments

On training students for a variety of career outcomes and launching them well

- There is no me meaningful scaffolding for career diversity
    - Need internships and externships
    - A lot happening at department but needs support at broader level
- Mixed views of students' expectations about academic jobs.
- There are valuable roles for more 'centralized' offerings on professionalization. These don't need to be duplicated in each department, though some elements are discipline specific.
- How do we define "successful outcomes"? Need to pluralize "job markets."

Infrastructure

- Space
    - Not simply within departments but perhaps offices in a shared space.
    - Space important to students' sense of how they are viewed by the institution.
    - Idea incubator
- The equivalent of ASK for graduate students

Other structural considerations

- Heavy burden of DGS role. Need to be aware that any initiatives are likely to fall on DGS, who is already overloaded
    - Don't want the Task Force to create an avalanche of additional administrative work
    - Faculty in humanities and social sciences no longer have any incentive with 3-course load

- Clinical faculty have valuable contributions to make to graduate training and would like to be more involved
- Link with hospitals could be highlighted as a selling point in attracting students. The link between hospitals and Brown is strong here and doesn't have the same barriers as at other institutions
- The different structure of PhD programs in BioMed, where they are less closely tied to a department.
- Accountability should go two ways, so have departments evaluable the administration, including the Grad School
- Concern about department autonomy [humanities]
    - Center faculty voices
    - Need more investment in each department according to their needs for programming, hosting conferences, etc. This can't all be collaborative.

Other

- The Grad School currently provides programs with a lot of flexibility. That's important to preserve.
- Free bus to Boston
- Additional funding for students who need a medical leave but cannot afford it
- More institutional support for wellness of graduate students

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Dear Brown University Faculty,

As you know, the Provost has charged a Task Force on Doctoral Education with developing recommendations for promoting outstanding, innovative graduate education that supports the University's excellence in research and teaching while also preparing graduates for desired career outcomes. The full charge to the task force and its membership can be found here.

As part of their work, members of the task force are eager to discuss with faculty your experience working with PhD students and your ideas for enhancing excellence in training the next generation of scholars.

We would like to invite you to an open meeting on **Monday February 28, 12-1 pm** or **Wednesday March 2, 4-5 pm**. The first session will focus primarily on programs in the life and physical sciences, and the second on those in the humanities and social sciences. However, you are welcome to attend either, depending on your schedule. Both meetings will be held via Zoom.
…
We will begin with a few broad questions to orient the discussion:

- Are we attracting and retaining diverse and excellent students?
- Do we foster an inclusive climate and supportive culture?
- Are we training students well for a variety of career outcomes?
- Are we helping them to attain professional success?

And we would also like to hear your thoughts on more specific topics such as developing strategies for successful advising and mentoring, fostering innovative curricular opportunities, improving pedagogical training, and providing effective guidance for careers both within and beyond the academy.

Reference pages:
II. Overview of the Work of the Task Force, 6
V. Advising, Mentoring, and Climate, 31

Doctoral Student Forums

Held Dec. 2021 - Jan. 2022

Carolina Mejia Peña
Sagen Kidane
Rachel Kalisher

Guiding Questions

1. Do Brown's PhD programs foster an inclusive climate and supportive culture?

2. Are Brown's PhD programs training students well for a variety of career outcomes?

3. Are Brown's PhD programs launching graduates into successful careers?

Humanities & Social Sciences: Curriculum

- Feelings of scholarly isolation
  - “Graduate education lives in the shadow of the open curriculum”
- Many small, somewhat arbitrarily segmented departments in the humanities
  - “How do we collapse boundaries without erasing identity of individual departments?”
- Prior Master’s work not honored
  - Would give students more flexibility to pursue external/additional experience
- Language Exams
  - Inconsistent requirements across departments
  - Not regulated for international students

Humanities & Social Sciences: Resources

- Differential treatment between humanities and STEM is noted, in terms of:
  - **Financials:** Since unionizing, pay gap is promised to reduce by Fall 2023. It is currently around $3k/year difference, though used to be closer to 6k/year.
  - **Diversity Initiatives**: No known significant initiatives in the humanities (as opposed to STEM) for diversity.
- Resources are lacking for professional development
  - Writing support
  - Teaching
  - Alternatives to academia re: Job market
- Graduate Center

Life & Physical Sciences: Advisor Level

- The **quality** and **composition** of advising is highly variable and almost completely dependent on the advisor
  - Professional development
    - Familiarity with careers outside of academia
      - "We usually end up going to career events hosted by other universities because we can't find the support here"
      - Most of the professional development events/resources are student initiated and led
    - Inadequate preparation for careers IN academia: writing and teaching
      - "We are led to careers in industry because it's easier to get a job there than in academia given the training we receive"

Life & Physical Sciences: Program Level

- Little consideration for incoming levels of preparation
  - Master degrees or equivalent preparation are not recognized – wasted time taking redundant classes
  - Curriculum/qualifying exam is designed to have students fail
- Departmental support/grievances
  - Lack of accountability for PIs that use funding as leverage to force students to leave
- International students do not identify with/feel supported by current diversity initiatives
  - Experiences in graduate school and values are incredibly different from HUGS

Commonalities Across Divisions

- Grads susceptible to abuse and retaliation - affects student success
  - Accountability
  - Sanctions
    - Difficult in the tenure system
- Desire for graduate student input for tenure/promotion portfolios
  - Incentivizes good behavior
- Small (and large!) departments have issues with labor distribution
  - Graduate students relying upon whisper networks
  - Certain faculty being avoided in terms of mentorship
    - Overburdening faculty doing the right thing, and “failing up” faculty that do the wrong thing
    - Ultimately puts students at a disadvantage as their advisor has too many other students (re: “carrying capacity” brought up in earliest meeting, and DGS overburdening.)
- Master’s Experience

Thoughts for the Task Force

- **Would like to alleviate overburdening single faculty advisor by:**
  - Dividing mentoring, advising, and training responsibilities among a deliberate and well balanced thesis committee and additional professional development opportunities housed either at the department, division, or graduate school level
- **Would like the Graduate School/University to take a bigger part in:**
  - Supporting International Students
  - Holding abusive or negligent faculty accountable
  - Establishing protocols for incoming students with prior graduate work. Make sure the PhD curriculum is equitable for each student.

Thoughts for the Task Force

- **Establish a Graduate Student Center:**
  - A safe, student-centered space where students can gather to discuss ideas
  - Could have programming aimed at promoting these and other professionalization initiatives
  - Could encompass offices to prepare graduate students for professional market
  - Peer institutions have centralized spaces - Columbia, Cornell, Harvard, Penn, Princeton

Reference pages:
II. Overview of the Work of the Task Force, 6
V. Advising, Mentoring, and Climate, 31

APPENDIX C

CGS Career Pathways Survey: Doctoral Students

The Council of Graduate Schools Career Pathways Student Survey is sent to currently enrolled doctoral students in their second or fifth year. The survey was administered for three years, starting in the spring of 2018 and ending in the spring of 2020.

This dashboard provides a summary of responses by discipline and by year in PhD program.

Number Responding and Response Rates

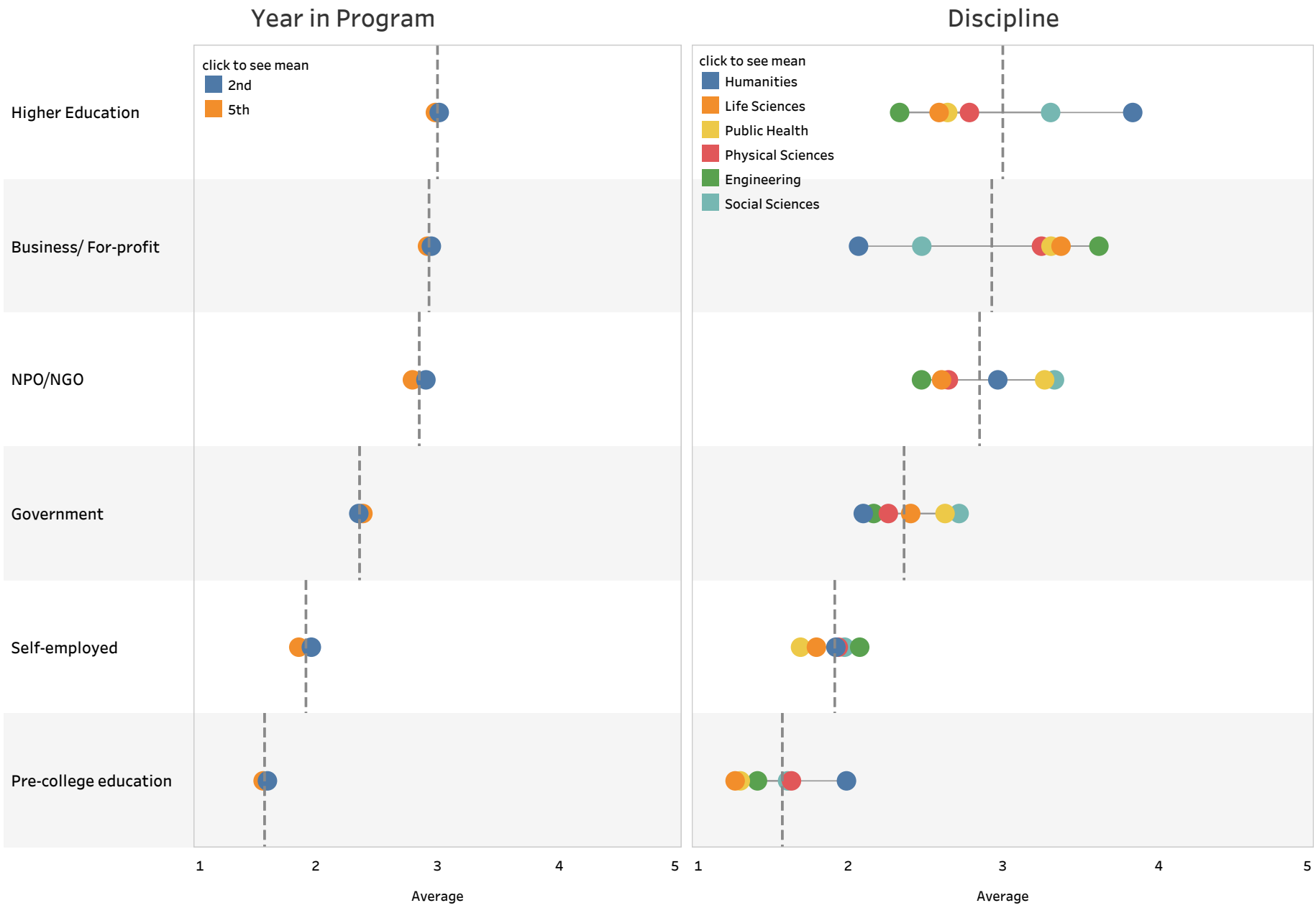
Response rates went down in 2019, likely due to the number of other surveys distributed to students during the academic year

	2018	2019	2020	All	
Overall	233	198	259	690	37% 51%
Humanities	51	34	46	131	35% 51%
Life Sciences	53	37	48	138	47% 57%
Public Health	5	15	13	33	31% 48% 60%
Physical Sciences	54	52	72	178	33% 41% 55%
Engineering	28	27	19	74	40% 51%
Social Sciences	42	33	61	136	29% 45% 53%
2nd Year	125	114	137	376	37% 49%
5th Year	108	84	122	314	38% 54%
Asian	3	12	10	25	14% 34%
Black or African American	4	9	13	26	43% 52%
Hispanic or Latino	15	12	23	50	39% 53% 63%
Non-Resident Alien	90	77	121	288	36% 46% 57%
Race/Ethnicity Unknown	20	7	17	44	28% 49% 59%
Two or More Races	1	3	6	10	14% 21% 43%
White	100	78	69	247	43% 53%
Female	99	102	123	324	40% 51%
Male	134	96	136	366	34% 50%

Career Aspirations: Employment Sector

Scale: 1 not at all desirable - 5 extremely desirable

Vertical line is value for all students



APPENDIX D.1

BROWN Graduate School

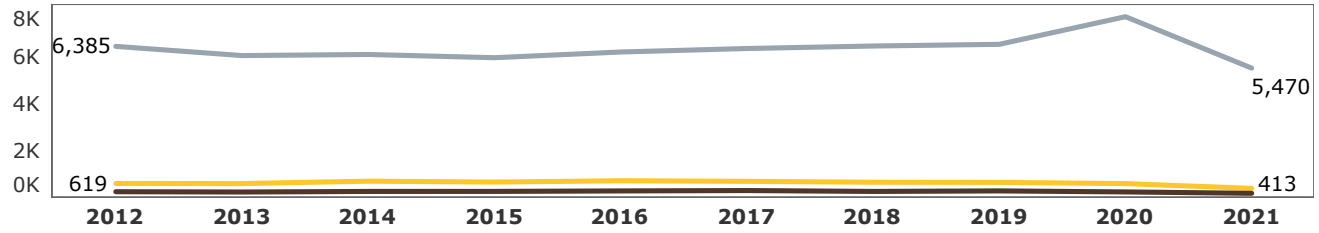
Humanities
Life and Medical Sciences
Physical Sciences
Social Sciences

ADMISSION METRICS

Printed on July 18, 2022

Application Numbers

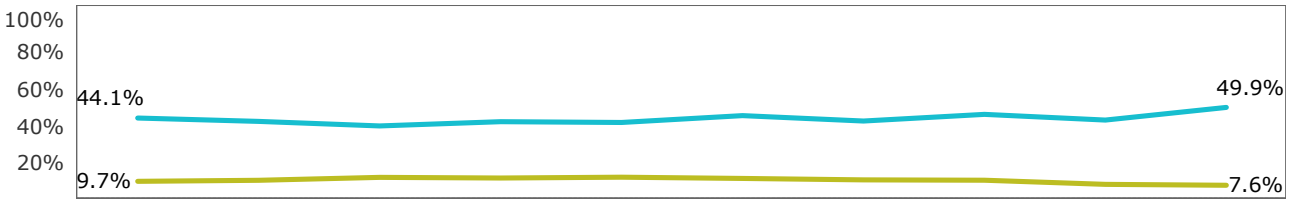
Applications *Admits* *Matrics*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Apps	6,385	5,998	6,044	5,908	6,148	6,295	6,400	6,471	7,633	5,470
Matric	273	260	285	286	306	322	285	307	264	206
Admits	619	615	716	679	734	709	671	666	614	413

Selectivity and Yield

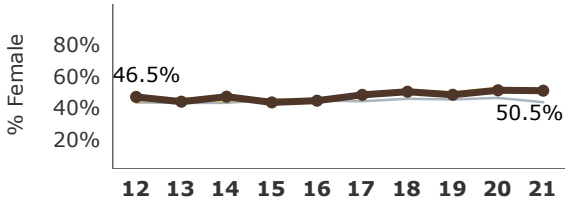
Divisional Selectivity *Divisional Yield*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Division Selectivity	9.7%	10.3%	11.8%	11.5%	11.9%	11.3%	10.5%	10.3%	8.0%	7.6%
Division Yield	44.1%	42.3%	39.8%	42.0%	41.7%	45.4%	42.5%	46.1%	43.0%	49.9%
All PhD Selectivity	9.7%	10.3%	11.8%	11.5%	11.9%	11.3%	10.5%	10.3%	8.0%	7.6%
All PhD Yield	44.1%	42.3%	39.8%	42.1%	41.7%	45.4%	42.5%	46.1%	43.0%	49.9%

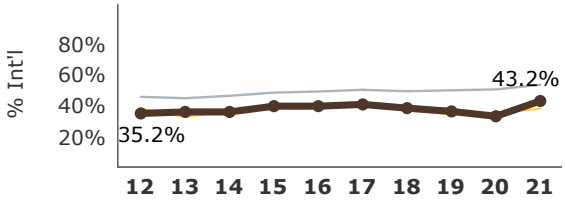
Sex

Applications *Admits* *Matrics*



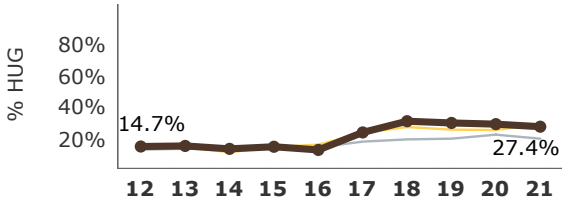
	12	13	14	15	16	17	18	19	20	21
Female Matrics	127	113	133	123	135	154	142	147	134	104
Div %F Matrics	47%	43%	47%	43%	44%	48%	50%	48%	51%	50%
All PhD % Female	47%	43%	47%	43%	44%	48%	50%	48%	51%	50%

International Students



	12	13	14	15	16	17	18	19	20	21
Int'l Matrics	96	94	103	114	122	132	110	112	88	89
Intl % Matrics D..	35%	36%	36%	40%	40%	41%	39%	36%	33%	43%
All Int'l PhD	35%	36%	36%	40%	40%	41%	39%	36%	33%	43%

Historically Underrepresented Groups*



	12	13	14	15	16	17	18	19	20	21
HUG Matrics	26	25	24	25	23	45	54	58	51	32
Division	14%	14%	14%	16%	12%	24%	32%	31%	31%	28%
Non-HUG	119	116	138	118	134	130	109	126	108	83
All PhD HUG	15%	15%	13%	15%	13%	24%	31%	30%	29%	27%

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BROWN Graduate School

Humanities

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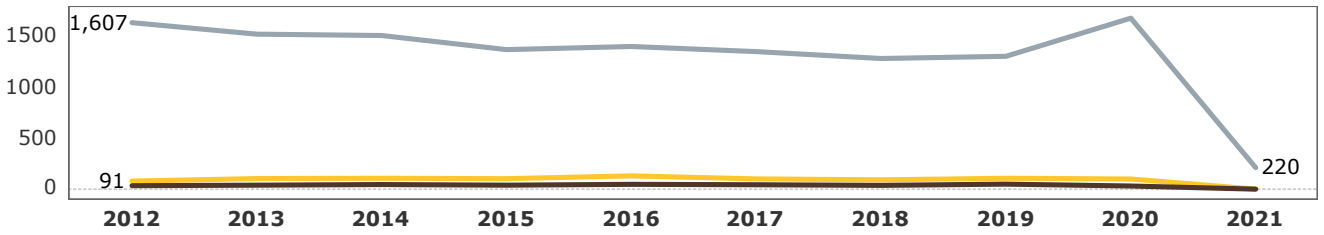
ADMISSION METRICS

Application Numbers

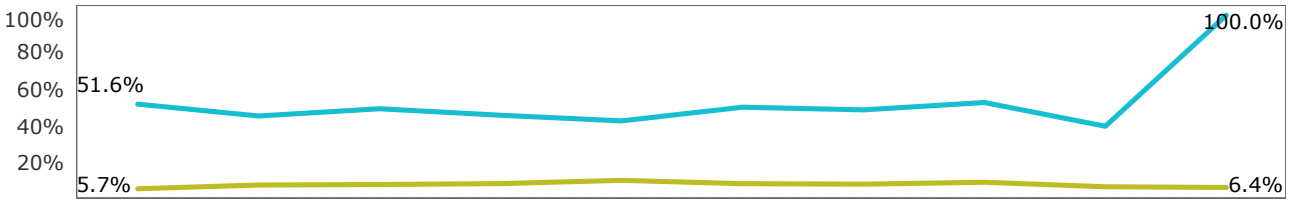
Applications *Admits* *Matrics*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Apps	1,607	1,497	1,484	1,349	1,379	1,330	1,264	1,285	1,650	220
Matric	47	52	58	52	60	56	50	62	44	14
Admits	91	115	118	114	141	112	103	118	111	14

Selectivity and Yield

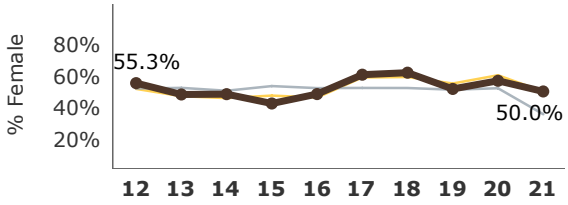
Divisional Selectivity *Divisional Yield*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Division Selectivity	5.7%	7.7%	8.0%	8.5%	10.2%	8.4%	8.1%	9.2%	6.7%	6.4%
Division Yield	51.6%	45.2%	49.2%	45.6%	42.6%	50.0%	48.5%	52.5%	39.6%	100.0%
All PhD Selectivity	9.7%	10.3%	11.8%	11.5%	11.9%	11.3%	10.5%	10.3%	8.0%	7.6%
All PhD Yield	44.1%	42.3%	39.8%	42.1%	41.7%	45.4%	42.5%	46.1%	43.0%	49.9%

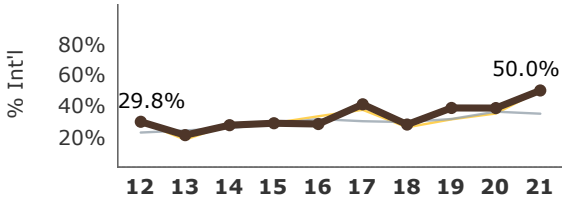
Sex

Applications *Admits* *Matrics*



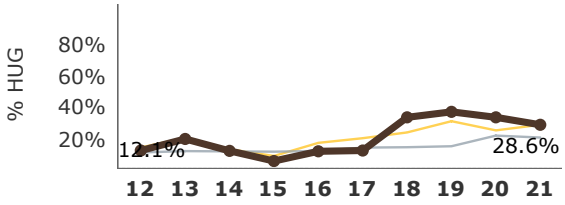
	12	13	14	15	16	17	18	19	20	21
Female Matrics	26	25	28	22	29	34	31	32	25	7
Div %F Matrics	55%	48%	48%	42%	48%	61%	62%	52%	57%	50%
All PhD % Female	47%	43%	47%	43%	44%	48%	50%	48%	51%	50%

International Students



	12	13	14	15	16	17	18	19	20	21
Int'l Matrics	14	11	16	15	17	23	14	24	17	7
Intl % Matrics D..	30%	21%	28%	29%	28%	41%	28%	39%	39%	50%
All Int'l PhD	35%	36%	36%	40%	40%	41%	39%	36%	33%	43%

Historically Underrepresented Groups*



	12	13	14	15	16	17	18	19	20	21
HUG Matrics	4	8	5	2	5	4	12	14	9	2
Division	12%	20%	12%	5%	12%	12%	33%	37%	33%	29%
Non-HUG	20	25	31	29	33	25	20	22	14	5
All PhD HUG	15%	15%	13%	15%	13%	24%	31%	30%	29%	27%

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BROWN Graduate School

Life and Medical Sciences

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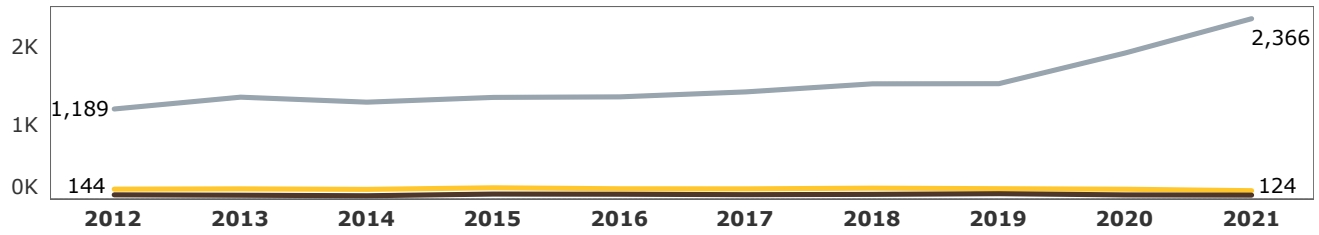
ADMISSION METRICS

Application Numbers

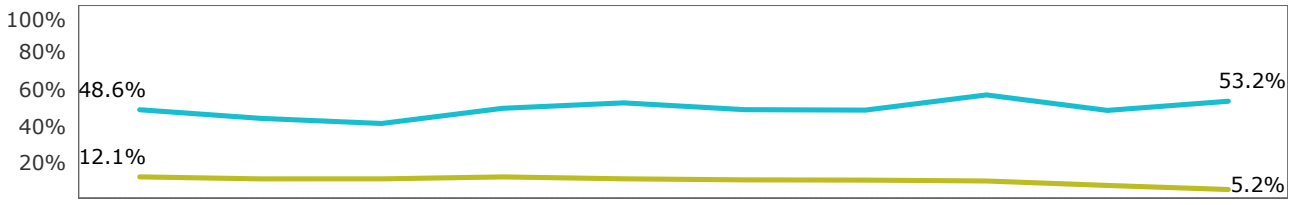
Applications *Admits* *Matrics*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Apps	1,189	1,343	1,278	1,340	1,347	1,412	1,517	1,519	1,919	2,366
Matric	70	65	58	80	78	72	76	85	69	66
Admits	144	148	141	162	149	148	157	150	143	124

Selectivity and Yield

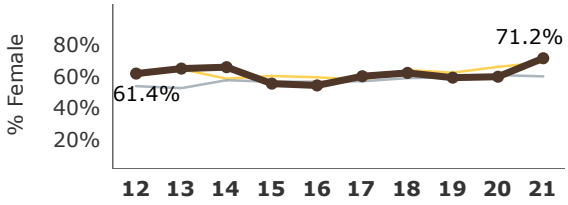
Divisional Selectivity *Divisional Yield*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Division Selectivity	12.1%	11.0%	11.0%	12.1%	11.1%	10.5%	10.3%	9.9%	7.5%	5.2%
Division Yield	48.6%	43.9%	41.1%	49.4%	52.3%	48.6%	48.4%	56.7%	48.3%	53.2%
All PhD Selectivity	9.7%	10.3%	11.8%	11.5%	11.9%	11.3%	10.5%	10.3%	8.0%	7.6%
All PhD Yield	44.1%	42.3%	39.8%	42.1%	41.7%	45.4%	42.5%	46.1%	43.0%	49.9%

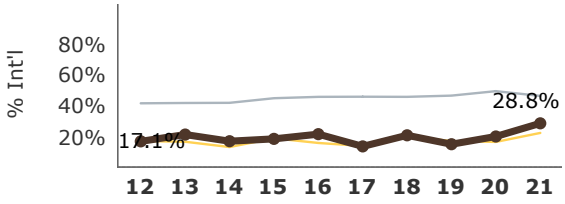
Sex

Applications *Admits* *Matrics*



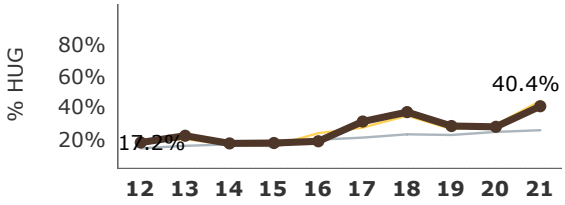
	12	13	14	15	16	17	18	19	20	21
Female Matrics	43	42	38	44	42	43	47	50	41	47
Div %F Matrics	61%	65%	66%	55%	54%	60%	62%	59%	59%	71%
All PhD % Female	47%	43%	47%	43%	44%	48%	50%	48%	51%	50%

International Students



	12	13	14	15	16	17	18	19	20	21
Int'l Matrics	12	14	10	15	17	10	16	13	14	19
Intl % Matrics D..	17%	22%	17%	19%	22%	14%	21%	15%	20%	29%
All Int'l PhD	35%	36%	36%	40%	40%	41%	39%	36%	33%	43%

Historically Underrepresented Groups*



	12	13	14	15	16	17	18	19	20	21
HUG Matrics	10	11	8	11	11	19	22	20	15	19
Division	17%	22%	17%	17%	18%	31%	37%	28%	27%	40%
Non-HUG	41	33	35	47	45	41	34	48	38	27
All PhD HUG	15%	15%	13%	15%	13%	24%	31%	30%	29%	27%

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BROWN Graduate School

Physical Sciences

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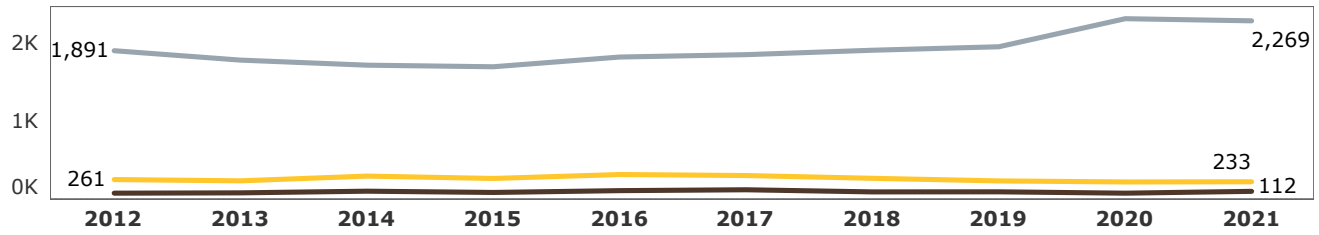
ADMISSION METRICS

Application Numbers

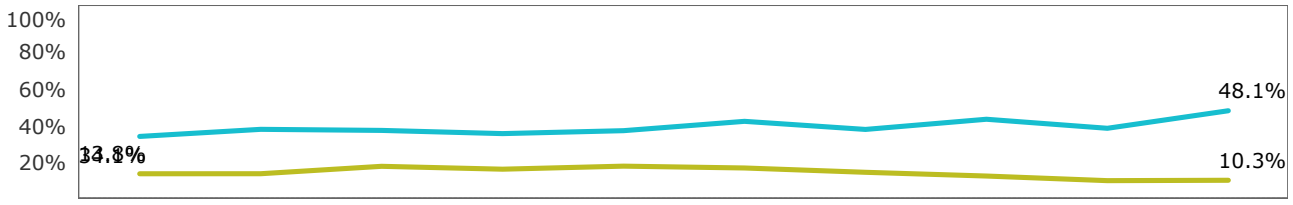
Applications *Admits* *Matrics*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Apps	1,891	1,772	1,708	1,688	1,811	1,841	1,897	1,941	2,296	2,269
Matric	89	93	114	98	121	132	105	106	89	112
Admits	261	245	305	275	325	312	277	244	231	233

Selectivity and Yield

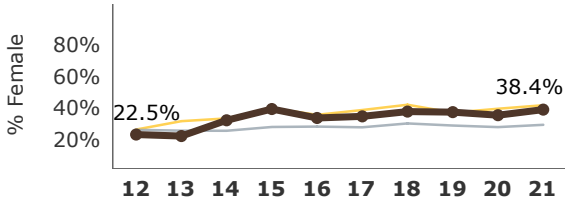
Divisional Selectivity *Divisional Yield*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Division Selectivity	13.8%	13.8%	17.9%	16.3%	17.9%	16.9%	14.6%	12.6%	10.1%	10.3%
Division Yield	34.1%	38.0%	37.4%	35.6%	37.2%	42.3%	37.9%	43.4%	38.5%	48.1%
All PhD Selectivity	9.7%	10.3%	11.8%	11.5%	11.9%	11.3%	10.5%	10.3%	8.0%	7.6%
All PhD Yield	44.1%	42.3%	39.8%	42.1%	41.7%	45.4%	42.5%	46.1%	43.0%	49.9%

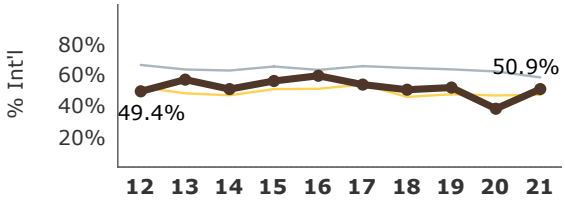
Sex

Applications *Admits* *Matrics*



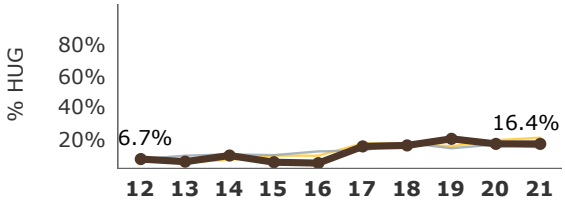
	12	13	14	15	16	17	18	19	20	21
Female Matrics	20	20	36	38	40	45	39	39	31	43
Div %F Matrics	22%	22%	32%	39%	33%	34%	37%	37%	35%	38%
All PhD % Female	47%	43%	47%	43%	44%	48%	50%	48%	51%	50%

International Students



	12	13	14	15	16	17	18	19	20	21
Int'l Matrics	44	53	58	55	72	71	53	55	34	57
Intl % Matrics D..	49%	57%	51%	56%	60%	54%	50%	52%	38%	51%
All Int'l PhD	35%	36%	36%	40%	40%	41%	39%	36%	33%	43%

Historically Underrepresented Groups*



	12	13	14	15	16	17	18	19	20	21
HUG Matrics	3	2	5	2	2	9	8	10	9	9
Division	7%	5%	9%	5%	4%	15%	15%	20%	16%	16%
Non-HUG	36	29	47	31	37	46	42	39	37	46
All PhD HUG	15%	15%	13%	15%	13%	24%	31%	30%	29%	27%

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BROWN Graduate School

Social Sciences

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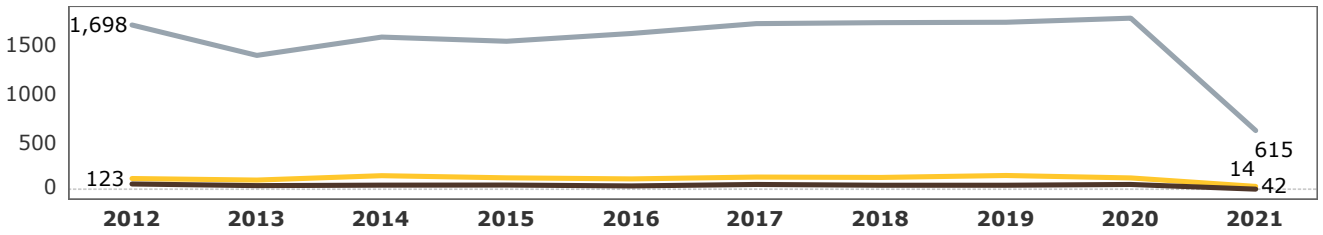
ADMISSION METRICS

Application Numbers

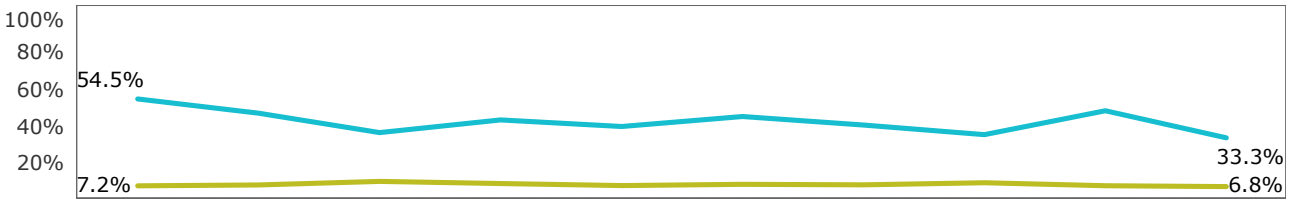
Applications *Admits* *Matrics*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Apps	1,698	1,386	1,574	1,531	1,611	1,712	1,722	1,726	1,768	615
Matric	67	50	55	56	47	62	54	54	62	14
Admits	123	107	152	130	119	138	134	154	129	42

Selectivity and Yield

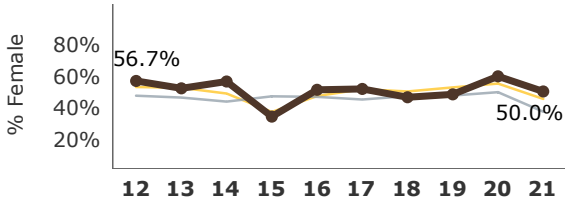
Divisional Selectivity *Divisional Yield*



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Division Selectivity	7.2%	7.7%	9.7%	8.5%	7.4%	8.1%	7.8%	8.9%	7.3%	6.8%
Division Yield	54.5%	46.7%	36.2%	43.1%	39.5%	44.9%	40.3%	35.1%	48.1%	33.3%
All PhD Selectivity	9.7%	10.3%	11.8%	11.5%	11.9%	11.3%	10.5%	10.3%	8.0%	7.6%
All PhD Yield	44.1%	42.3%	39.8%	42.1%	41.7%	45.4%	42.5%	46.1%	43.0%	49.9%

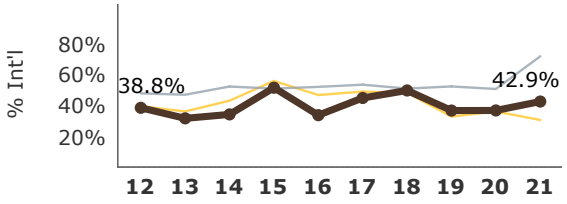
Sex

Applications *Admits* *Matrics*



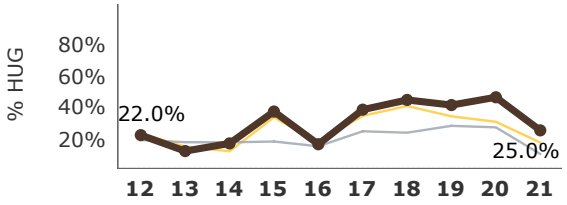
	12	13	14	15	16	17	18	19	20	21
Female Matrics	38	26	31	19	24	32	25	26	37	7
Div %F Matrics	57%	52%	56%	34%	51%	52%	46%	48%	60%	50%
All PhD % Female	47%	43%	47%	43%	44%	48%	50%	48%	51%	50%

International Students



	12	13	14	15	16	17	18	19	20	21
Int'l Matrics	26	16	19	29	16	28	27	20	23	6
Intl % Matrics D..	39%	32%	35%	52%	34%	45%	50%	37%	37%	43%
All Int'l PhD	35%	36%	36%	40%	40%	41%	39%	36%	33%	43%

Historically Underrepresented Groups*



	12	13	14	15	16	17	18	19	20	21
HUG Matrics	9	4	6	10	5	13	12	14	18	2
Division	22%	12%	17%	37%	16%	38%	44%	41%	46%	25%
Non-HUG	22	29	25	11	19	18	13	17	19	5
All PhD HUG	15%	15%	13%	15%	13%	24%	31%	30%	29%	27%

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Reference pages:
III. Admissions and Recruitment, 13
III. Admissions and Recruitment, 14

APPENDIX D.2

Ph.D. Admission Metrics, Academic Years 2019-20 and 2022-23

		2019-20					2022-23				
Division	Program	Applications	Admits	Selectivity	Matrics	Yield	Applications	Admits	Selectivity	Matrics	Yield
Humanities	Ancient History	18	4	22.2%	2	50.0%					
	Archeology & Ancient World	50	7	14.0%	4	57.1%	57	4	7.0%	2	50.0%
	Classics	32	2	6.3%	2	100.0%	54	7	13.0%	3	42.9%
	Comparative Literature	75	7	9.3%	3	42.9%	83	6	7.2%	1	16.7%
	Egyptology & Assyriology	22	3	13.6%	3	100.0%	31	4	12.9%	1	25.0%
	English	308	20	6.5%	12	60.0%	335	16	4.8%	7	43.8%
	French & Francophone Studies	29	8	27.6%	3	37.5%	30	5	16.7%	3	60.0%
	German Studies	13	5	38.5%	2	40.0%	19	6	31.6%	3	50.0%
	Hispanic Studies	39	6	15.4%	5	83.3%	41	3	7.3%	3	100.0%
	History of Art & Architecture	61	6	9.8%	3	50.0%	100	6	6.0%	5	83.3%
	Italian Studies	17	5	29.4%	1	20.0%	22	3	13.6%	2	66.7%
	Modern Culture and Media	141	5	3.5%	2	40.0%	262	5	1.9%	4	80.0%
	Music & Multimedia Composition	72	3	4.2%	3	100.0%	125	3	2.4%	2	66.7%
	Musicology and Ethnomusicology	32	5	15.6%	2	40.0%	56	2	3.6%	2	100.0%
	Philosophy	225	15	6.7%	4	26.7%	165	13	7.9%	4	30.8%
	Portuguese and Brazilian Stu	17	2	11.8%	2	100.0%	21	3	14.3%	2	66.7%
	Religious Studies	63	10	15.9%	6	60.0%	96	9	9.4%	4	44.4%
	Slavic Studies	22	3	13.6%	1	33.3%	11	3	27.3%	2	66.7%
	Theatre & Perfomance Studies	50	3	6.0%	3	100.0%	85	3	3.5%	3	100.0%
Life and Medical Sciences	Behavioral & Social Health Sci	98	8	8.2%	6	75.0%	158	7	4.4%	6	85.7%
	Biology	10	0	0.0%	0		25	0	0.0%	0	
	Biology & Computational Biol.	72	12	16.7%	3	25.0%	104	12	11.5%	7	58.3%
	Biology-Biotechnology	34	2	5.9%	1	50.0%					
	Biomedical Engineering	143	3	2.1%	1	33.3%	206	5	2.4%	4	80.0%
	Biostatistics	206	8	3.9%	5	62.5%	285	10	3.5%	4	40.0%
	Cognitive Science	57	5	8.8%	4	80.0%	88	11	12.5%	7	63.6%
	Ecol., Evol. & Organismal Bio.	40	9	22.5%	8	88.9%	57	6	10.5%	4	66.7%
	Epidemiology	162	6	3.7%	5	83.3%	329	8	2.4%	7	87.5%
	Health Services Research	87	9	10.3%	5	55.6%	165	11	6.7%	8	72.7%
	Linguistics	34	0	0.0%	0		34	0	0.0%	0	
	Molec Bio, Cell Bio, & Biochem	142	34	23.9%	11	32.4%	281	26	9.3%	11	42.3%

		2019-20					2022-23				
Division	**Program**	**Applications**	**Admits**	**Selectivity**	**Matrics**	**Yield**	**Applications**	**Admits**	**Selectivity**	**Matrics**	**Yield**
Life and Medical Sciences	**Molecular Pharm & Physiology**	40	7	17.5%	3	42.9%					
	Neuroscience	214	31	14.5%	21	67.7%	277	29	10.5%	19	65.5%
	Pathobiology	60	14	23.3%	10	71.4%	83	13	15.7%	7	53.8%
	Psychology	120	5	4.2%	2	40.0%	139	6	4.3%	4	66.7%
	Therapeutics						73	10	13.7%	4	40.0%
Physical Sciences	**Applied Mathematics**	251	34	13.5%	14	41.2%	284	31	10.9%	14	45.2%
	Biomedical Engineering	13	13	100.0%	7	53.8%	20	19	95.0%	7	36.8%
	Chemistry	222	32	14.4%	11	34.4%	214	50	23.4%	23	46.0%
	Computer Science	423	51	12.1%	20	39.2%	638	41	6.4%	16	39.0%
	Earth, Environ. & Planetary Sc	94	14	14.9%	9	64.3%	144	21	14.6%	18	85.7%
	Engineering	397	36	9.1%	17	47.2%	208	55	26.4%	34	61.8%
	Mathematics	246	25	10.2%	10	40.0%	437	27	6.2%	8	29.6%
	Physics	295	39	13.2%	18	46.2%	392	46	11.7%	17	37.0%
Social Sciences	**Africana Studies**	67	6	9.0%	4	66.7%	23	4	17.4%	4	100.0%
	American Studies	140	7	5.0%	2	28.6%	104	5	4.8%	4	80.0%
	Anthropology	111	8	7.2%	6	75.0%	206	11	5.3%	4	36.4%
	Economics	757	72	9.5%	14	19.4%	713	66	9.3%	18	27.3%
	History	214	23	10.7%	10	43.5%	313	16	5.1%	9	56.3%
	Political Science	239	17	7.1%	9	52.9%	205	17	8.3%	8	47.1%
	Sociology	197	20	10.2%	8	40.0%	189	19	10.1%	7	36.8%

Note: Admission data is presented for students entering in academic years 2019-20 and 2022-23; the latter is preliminary. Data for AY 2020-21 is not comparable due to the number of students who deferred admission due to the COVID-19 pandemic. Data for AY 2021-22 is incomplete since admission was paused in a number of programs in the humanities and social sciences.

Reference pages:
III. Admissions and Recruitment, 13
III. Admissions and Recruitment, 14

Matriculation Factors for Incoming Students

Prepared by William Wittels
Assistant Director for Academic Affairs, Graduate School
1-21-2022

Incoming Student Survey

- In the field from 8-23-2021 to 9-3-2021
- 212 students received the survey
- 186 students responded to the survey for a total response rate of 87.7%
- 175 students responded to question #2
- Principally students in the life and physical sciences due to COVID-related admissions pauses

Incoming Student Survey Q4*

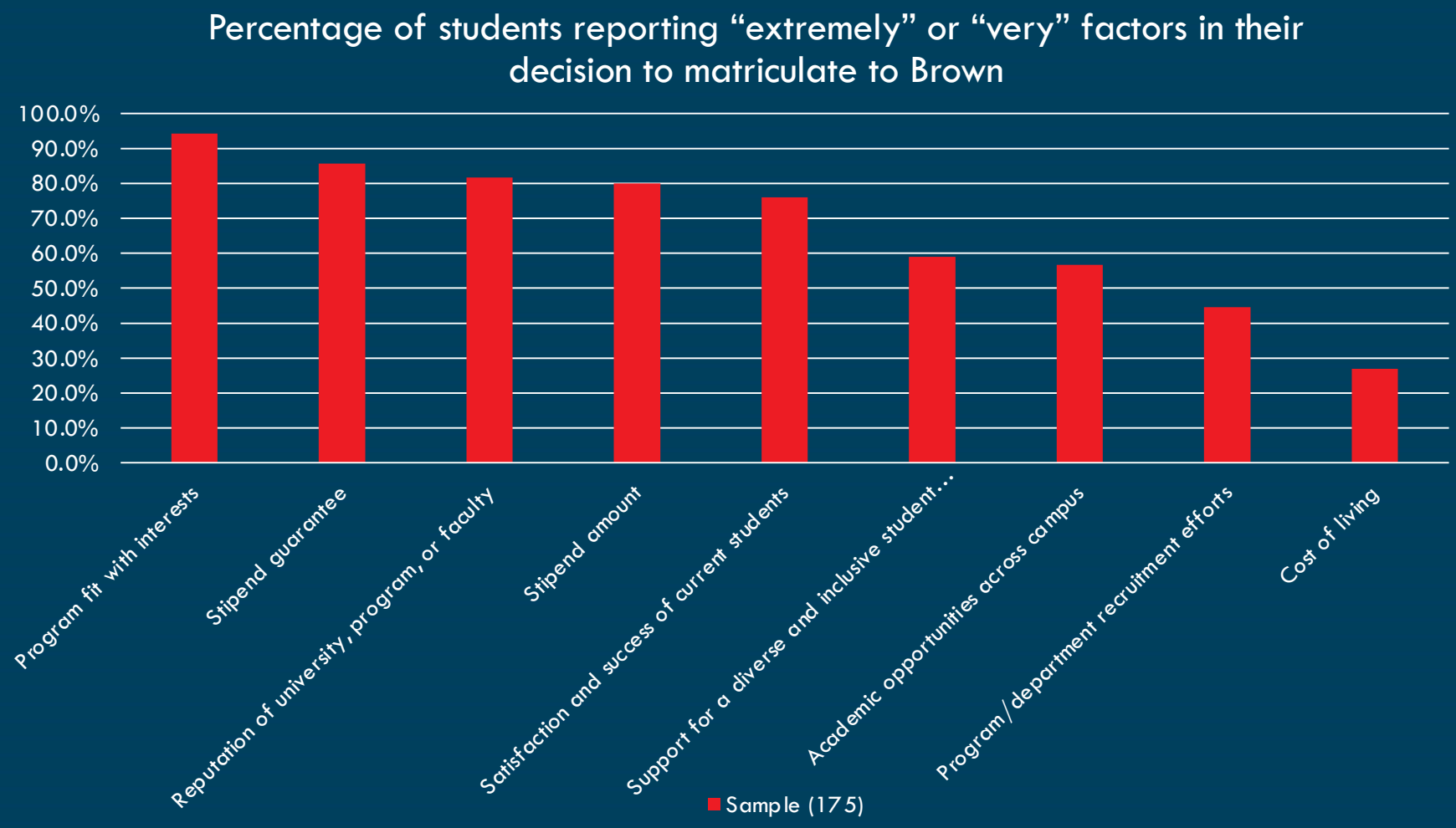
Q4

We are interested to know what factors led you to choose Brown University. Please indicate how important each of the following were to you in making your decision to come to Brown.

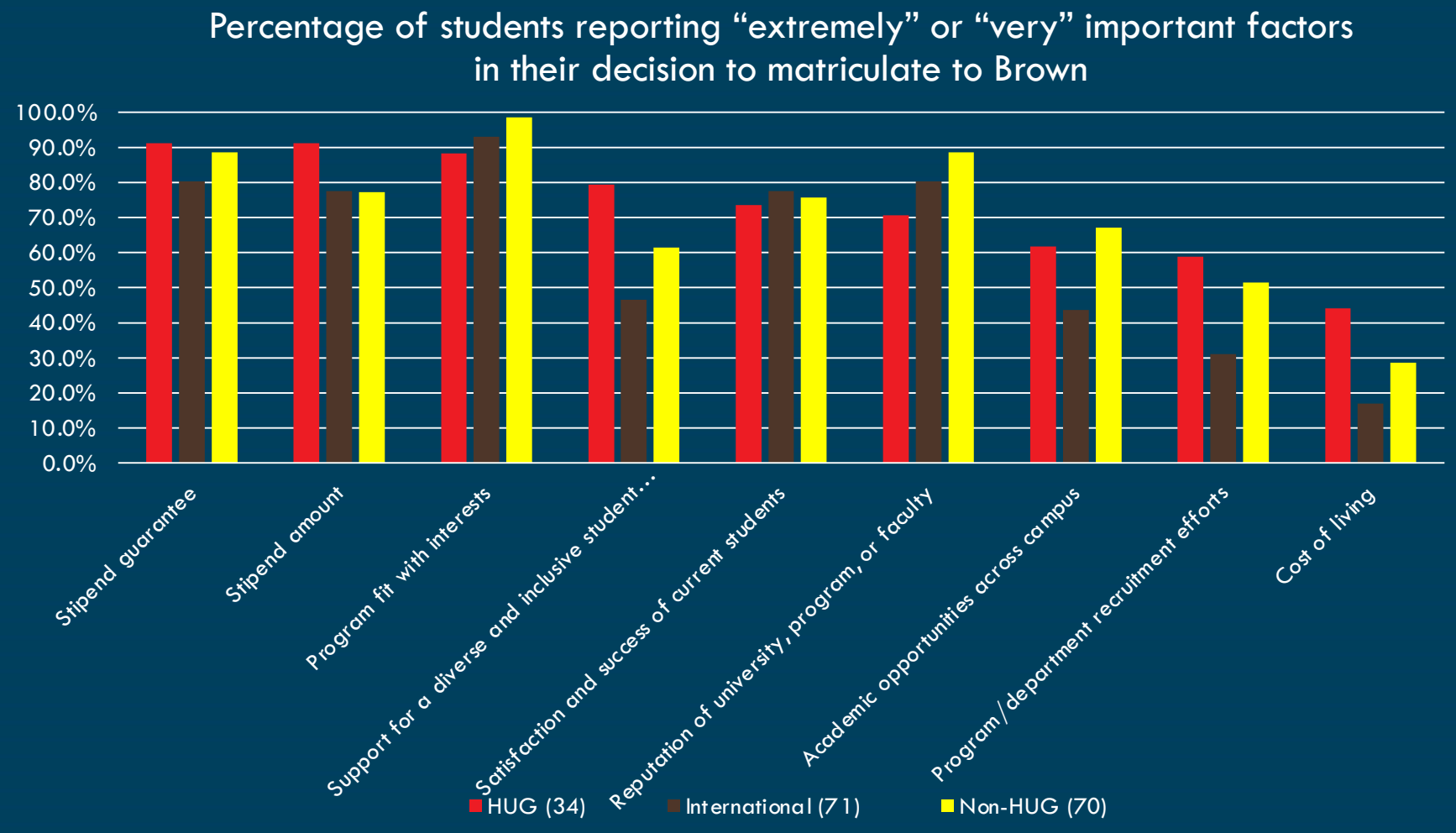
	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Support for a diverse and inclusive student body	○	○	○	○	○
Satisfaction and success of current students or graduates	○	○	○	○	○
Recruitment efforts by the department/program	○	○	○	○	○
Reputation of the University, program, and/or faculty	○	○	○	○	○
Academic opportunities across campus (Open Graduate Education Program, courses outside your home program, interdisciplinary opportunities)	○	○	○	○	○
Brown's geographic location	○	○	○	○	○
The look and feel of campus	○	○	○	○	○
Extracurricular opportunities on campus	○	○	○	○	○
The cost of living in the Providence area	○	○	○	○	○
The five-year stipend guarantee	○	○	○	○	○
The stipend amount offered to me	○	○	○	○	○
The fit between the program's strengths and my research interests	○	○	○	○	○

* "Brown's geographic location," "extracurricular opportunities across campus," and "the look and feel of campus" are not included in the following charts.

Self-reported matriculation factors for 2021-2022 entering cohort

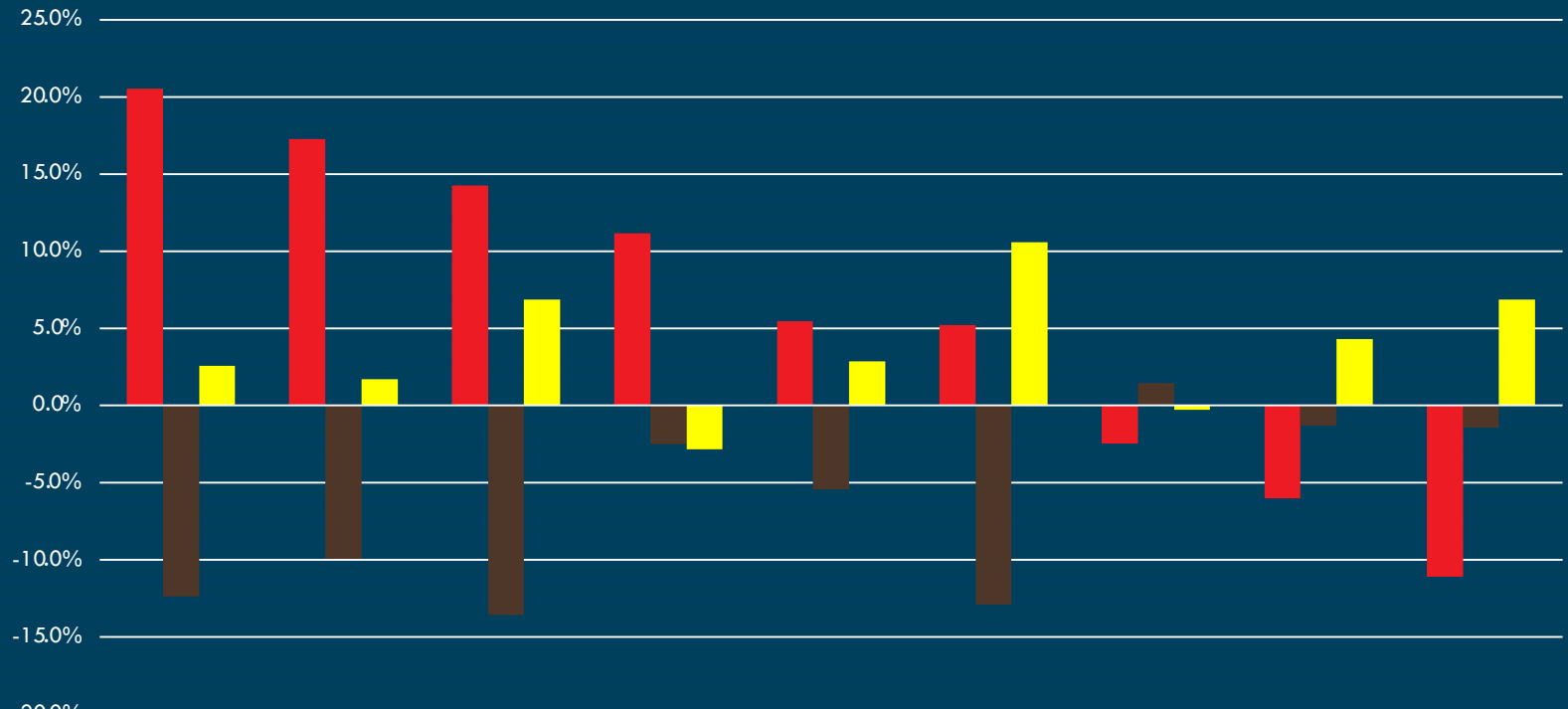


Self-reported matriculation factors for HUG, international, and domestic non-HUG students



Self-reported matriculation factors for HUG, international, and domestic non-HUG students

Difference from sample average in percentage of students reporting "Extremely" or "Very Important" factors in their decision to matriculate to Brown



	Diversity and inclusion	Cost of living	Recruitment	Stipend amount	Stipend guarantee	Academic opportunities across campus	Student satisfaction	Program fit with interests	Reputation
HUG (34)	20.6%	17.3%	14.3%	11.2%	5.5%	5.2%	-2.5%	-6.1%	-11.1%
International (71)	-12.4%	-10.0%	-13.6%	-2.5%	-5.4%	-12.9%	1.5%	-1.3%	-1.4%
Non-HUG (70)	2.6%	1.7%	6.9%	-2.9%	2.9%	10.6%	-0.3%	4.3%	6.9%

Self-reported matriculation factors for HUG, international, and domestic non-HUG students

Matriculation factors by group rank of percentage selecting "very" or "extremely" important

Rank	HUG (34)	International (71)	Domestic Non-HUG (70)
1st	Stipend guarantee (91.2%)	Program fit w. Interests (93.0%)	Program fit w. Interests (98.6%)
2nd	Stipend amount (91.2%)	Stipend guarantee (80.3%)	Stipend guarantee (88.6%)
3rd	Program fit w. Interests (88.2%)	Reputation of university, program, or faculty (80.3%)	Reputation of university, program, or faculty (88.6%)
4th	Support for a diverse and inclusive student body (79.4%)	Stipend amount (77.5%)	Stipend amount (77.1%)
5th	Satisfaction and success of current students (73.5%)	Satisfaction and success of current students (77.5%)	Satisfaction and success of current students (75.7%)
6th	Reputation of university, program, or faculty (70.6%)	Support for a diverse and inclusive student body (46.5%)	Academic opportunities across campus (67.1%)
7th	Academic opportunities across campus (61.8%)	Academic opportunities across campus (43.7%)	Support for a diverse and inclusive student body (61.4%)
8th	Program/department recruitment efforts (58.8%)	Program/department recruitment efforts (31.0%)	Program/department recruitment efforts (51.4%)
9th	Cost of living (44.1%)	Cost of living (16.9%)	Cost of living (28.6%)

APPENDIX F

Scale Issues and Doctoral Program Excellence in the Physical Sciences

1. Overview

The Task Force's tight time constraints prevented a deep discussion of several important topics. The members of the committee representing the Physical Sciences wanted to be sure to include an analysis of the role of scale of our doctoral programs in promoting excellence, impact and external competitiveness.

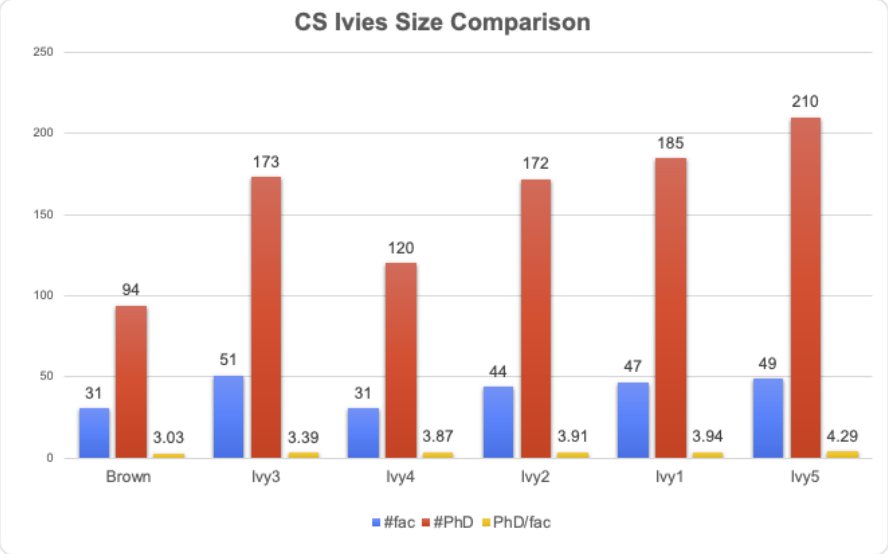
Collectively, we believe that our Physical Sciences doctoral programs are smaller than they need to be to be competitive with our peers, to compete at the highest level for external funding, and to attract and retain the best graduate students and the most ambitious faculty to our campus. Specifically, the number of PhD students per faculty needs to grow to more competitive levels, the number of faculty needs to grow, and space availability and quality issues require urgent attention. We believe that these problems can be addressed with concentrated attention in the time ahead.

2. External Benchmarking Data

What follows is a snapshot of comparative doctoral program scale data from several Physical Sciences programs at Brown. The programs are those that are represented by the faculty members in the Task Force. Although this is obviously an incomplete set, we believe the overall message is consistent across the entire physical sciences landscape here: our programs must grow in size (on a per capita as well as absolute level) for our faculty to become more productive and to be competitive on a national level.

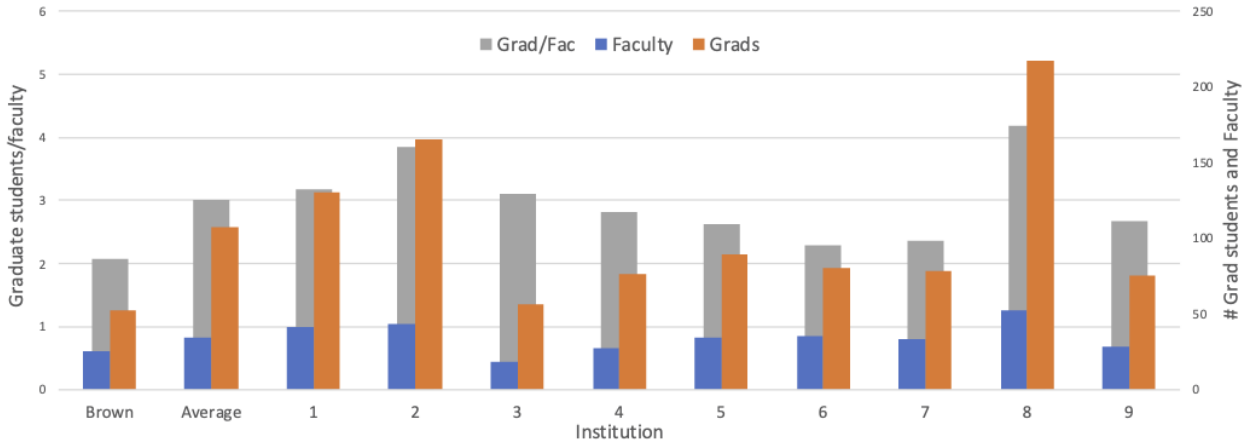
Computer Science: Benchmarking data across Ivy peers show that Brown CS ranks at the low end across all three metrics of interest: # tenure-track faculty, #PhD students in the program, and the student-faculty ratio. In a fast-expanding field like CS in which all higher-ed institutions and many companies are making significant investments, a high-impact and a highly-competitive graduate program requires depth with breadth: critical mass in several sub-disciplines that are selected strategically as well as a broad coverage of the field.

Figure 1: Computer Science PhD Benchmarking



DEEPS: DEEPS is one of the strongest Earth Science programs in the country, ranked #12 by USNWR (tied with Harvard, Princeton, UCLA, and three others). Data from Academic Analytics shows that our individual faculty productivity in grants, publications, and other metrics places us among the top five programs in the US. Despite our strengths, Brown ranks well below the number of PhD students per faculty, the number of faculty, and the number of graduate students in top-ten Earth Science programs. Over the last decade our faculty has grown, and will continue to grow in areas of institutional strategic priorities, such as the climate and environmental sciences, but our graduate program has not significantly grown since 2011. With modest investment, DEEPS could easily enter the top ten or even top five programs in the US.

Figure 2 :DEEPS Comparison to Top-10 Earth Science Programs*

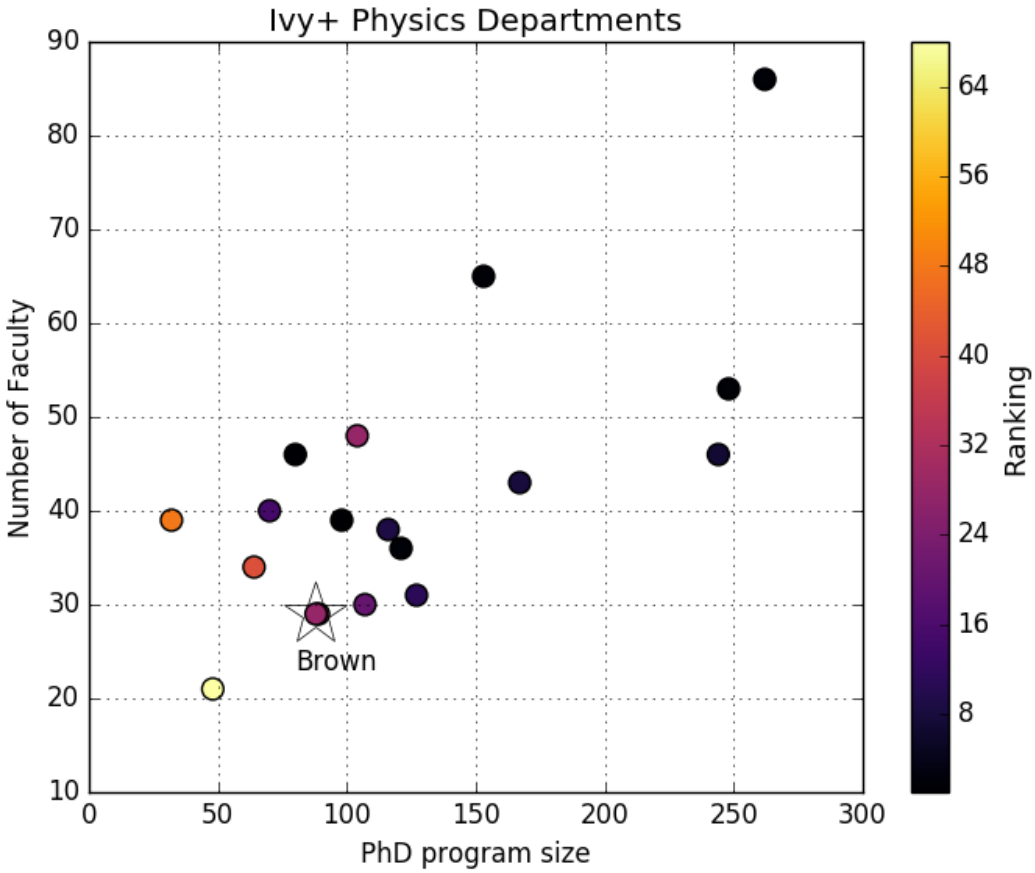


*Data are from an informal survey to top-ranked programs conducted in 2019.

Engineering: National doctoral program data in engineering is public and widely disseminated annually as part of the USNWR ranking process. We note that Brown ranks at the bottom of the Ivy League in PhD students per faculty (3.4) as well as near the bottom in annual federal grant dollars per faculty (~450K$/year). However, the external$$/graduate student metric is very comparable to our Ivy peers, suggesting that Brown could expand its PhD population if more incoming PhD Fellowship slots were available. Engineering typically has significantly more grant funding available each year than PhD Fellowships slots provided by the Graduate School to support, leading to increasing reliance on post-doctoral scholars. We also note that the number of tenure-track faculty in engineering is also the second smallest in the Ivy League.

Physics: The Department of Physics is the second smallest department (after Dartmouth) among the Ivy+ institutions, in both number of faculty and total number of graduate students. It is currently ranked in the top 13% among all Physics PhD granting institutions in the United States (source: American Physical Society). The field of physics itself is an ever-changing landscape, where new theoretical ideas coupled with novel experimental techniques are used to drive progress that fuels advancements in many other fields (e.g., engineering, biomed, computing, etc.). As such, impactful departments must not only have depth (experts in fields), but also breadth (covering multiple fields). Both of these are linked to the size of the program. The amount of incoming research funding per faculty increased by 250% in the last 5 years, however the number of graduate students remained more or less the same. Allowing an increase of the graduate student population coupled with targeted faculty searches in emergent areas (e.g., quantum information and cosmology) can better align the physics PhD program within the rest of the Ivy+ programs.

Figure 3: PhD Program Size and Rankings in Physics Departments.



3. Support for Incoming Doctoral Fellowships

The common funding trajectory of a doctoral student in the Physical Sciences at Brown consists of initial support for the first year, followed by a fraction of the second (or later) years of studies from a Graduate School supplied fellowship pool, with the expectation that 3-5 years of funding derives from external funding (most typically PI grant supported), which provides both stipend and tuition support. There are many other possible scenarios, but this is a typical path in the Physical Sciences.

To achieve our ambitions for our programs, the availability of PhD student “slots” and the corresponding funding process needs to be carefully managed on the "front-end", so that faculty are never left without doctoral students to support their available grant-funded research. And the process needs to be carefully managed on the "back-end" so that doctoral students are well-supported in case of unexpected funding issues. The availability of back-end “bridge funding” allows faculty members to be less conservative and take more calculated risks, focusing on the quality and long-term impact of their research programs without being overly concerned about short-term funding fluctuations. Bridge funding also can allow graduate students to shift their research between advisors as their interests develop and change over the course of their studies.

If this process is well managed by Brown, as described above, the net financial impact of modestly growing research in the Physical Sciences — by increasing allowing increased PhD student slots and funding — is expected to be positive, since the cost of an additional stipend for an additional student is compensated by the additional tuition received on grant funding. Larger programs also often translate into more large grants (center and training grants), further expanding this funding base. Also note that the insufficient first-year fellowships places an artificial and rigid constraint on overall research growth in these fields and may be particularly limiting to junior faculty members in some fields who are aiming to grow their research programs.

We believe that the doctoral student support in the Physical Sciences needs to be substantially increased with the goal of research growth firmly in mind. We advocate for a much closer collaboration in the time ahead between the Graduate School, OVPR and the Departments with the explicit goal of growing research in these fields in a cost effective way.

4. Faculty Size

Almost all of Brown's programs in the Physical Sciences are "small" compared to our aspirational peers. We understand that most Brown graduate programs campus-wide have this feature, and this small and intimate scale has some well-known advantages. However, comparative data from a variety of Physical Sciences fields shows that grant funding per faculty tends to grow as the size of a program's faculty grows, and this growth leads to attendant increases in quality, external visibility, rankings, and success in recruiting and retaining the best graduate students and faculty. Growth in the faculty is also critical in keeping the student-faculty ratio manageable and ensuring high-quality advising.

5. Space

Brown has made a significant and appreciated investment in recent years in new laboratory space with the Applied Math, ERC and 85 Waterman, but this has been accompanied by a continued deterioration in a much larger set of laboratory buildings in the Physical Sciences, specifically Barus and Holley, Geo Chem, MRL, Lincoln Field, etc. There have been several recent examples of important experiments being ruined or severely delayed due to building infrastructure issues, and these significantly limit our ability to perform cutting edge research, as well as recruit the best graduate students and faculty. More general space availability issues (e.g., CIT) have also become an ongoing concern in expanding our research programs. If we had the required high-quality (laboratory) space, we believe that a significant increase in faculty size would lead to a significant improvement in the quality of our doctoral programs.

6. Suggested Next Steps

In the short-term, we believe that these programs require closer coordination in the time ahead between the Graduate School, OVPR and the Physical Sciences departments to make PhD Fellowship growth and research growth a high priority. We also believe that - if planned carefully - this growth would be relatively low-cost and an “easy win” for the university.

We suggest that Brown develop criteria for long-term strategic investment and expansion of its programs, including and specifically the Physical Sciences programs, as well as initiate a “light-weight” process to invite programs to put together cases for expansion and additional investment. This process would be supplemented/coordinated with the program external reviews, as well as

updated peer benchmarking data that is ideally collected by the University. Particular specific benchmarking metrics (students/faculty, funding/ faculty, total faculty, research productivity, etc.) should be an important part of the evaluation process.

While we expect the criteria for this expansion to include a number of relevant factors such as "alignment with University priorities", "available funding opportunities", "strong program outcomes", we suggest that "external competitiveness" be considered as a key variable in recalibrating the scale of our programs.

Finally, given the severity and urgency of the (lab) space issues across the Physical Sciences programs, which will get only amplified with additional growth, we also suggest that a task force be formed to work out a planning effort to develop a multi-year space expansion/improvement plan that will also take into account projected personnel growth.

Respectfully submitted,

Ugur Cetintemel - Computer Science
Savvas Koushiappas - Physics
Lawrence Larson - Engineering
James Russell - DEEPS

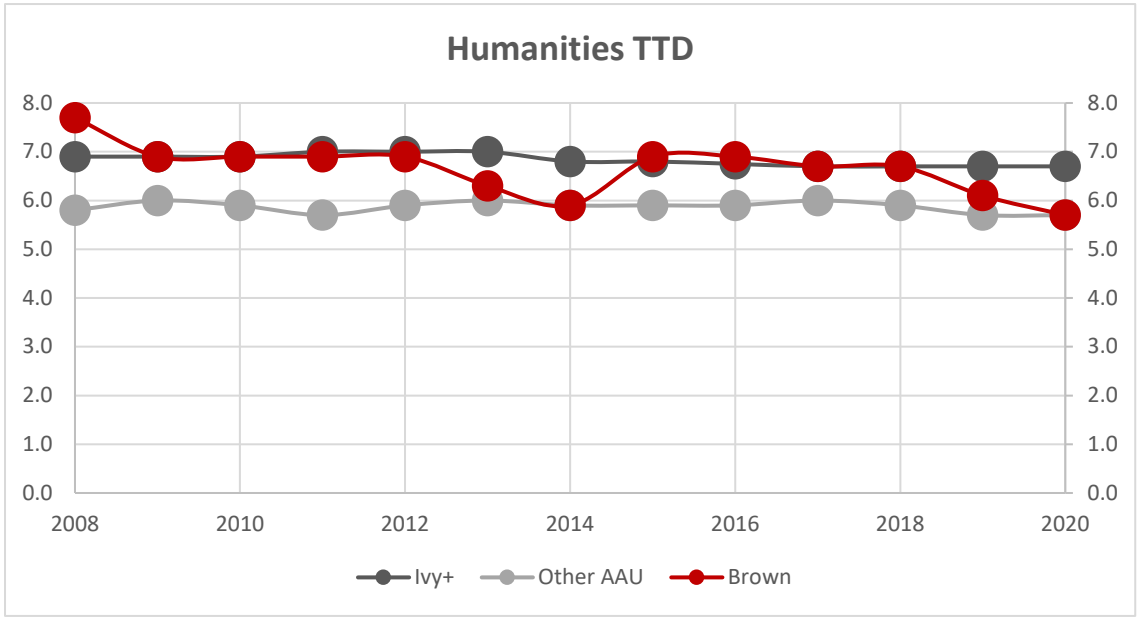
Reference page:
III. Admissions and Recruitment, 18

APPENDIX G

Doctoral Time-to-Degree by Graduation Year

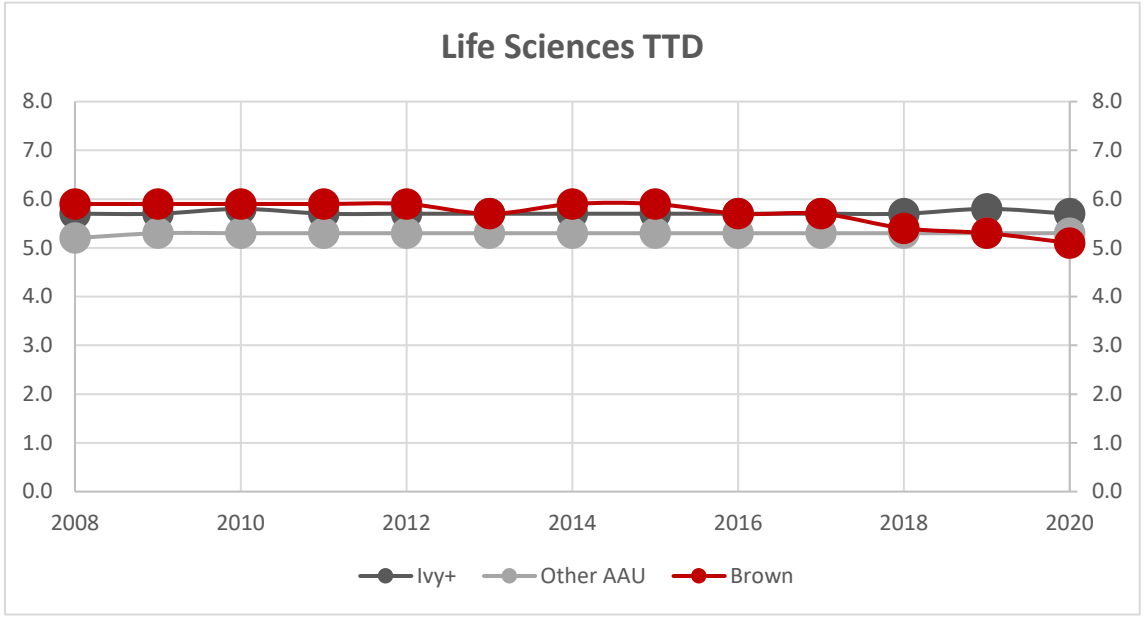
Humanities

	Brown	Ivy+	Other AAU	Total AAU
2008	7.7	6.9	5.8	6.3
2009	6.9	6.9	6.0	6.4
2010	6.9	6.9	5.9	6.5
2011	6.9	7.0	5.7	6.3
2012	6.9	7.0	5.9	6.4
2013	6.3	7.0	6.0	6.4
2014	5.9	6.8	5.9	6.3
2015	6.9	6.8	5.9	6.3
2016	6.9	6.8	5.9	6.3
2017	6.7	6.7	6.0	6.3
2018	6.7	6.7	5.9	6.1
2019	6.1	6.7	5.7	6.0
2020	5.7	6.7	5.7	6.0



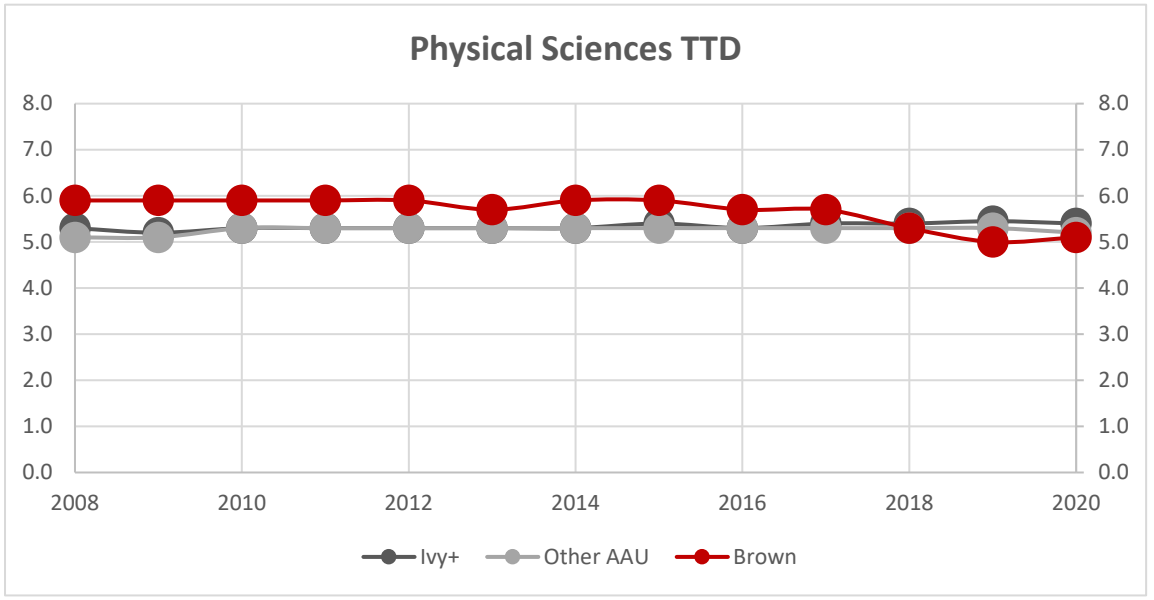
Life Sciences

	Brown	Ivy+	Other AAU	Total AAU
2008	5.9	5.7	5.2	5.3
2009	5.9	5.7	5.3	5.6
2010	5.9	5.8	5.3	5.7
2011	5.9	5.7	5.3	5.7
2012	5.9	5.7	5.3	5.6
2013	5.7	5.7	5.3	5.6
2014	5.9	5.7	5.3	5.5
2015	5.9	5.7	5.3	5.7
2016	5.7	5.7	5.3	5.7
2017	5.7	5.7	5.3	5.6
2018	5.4	5.7	5.3	5.5
2019	5.3	5.8	5.3	5.7
2020	5.1	5.7	5.3	5.4



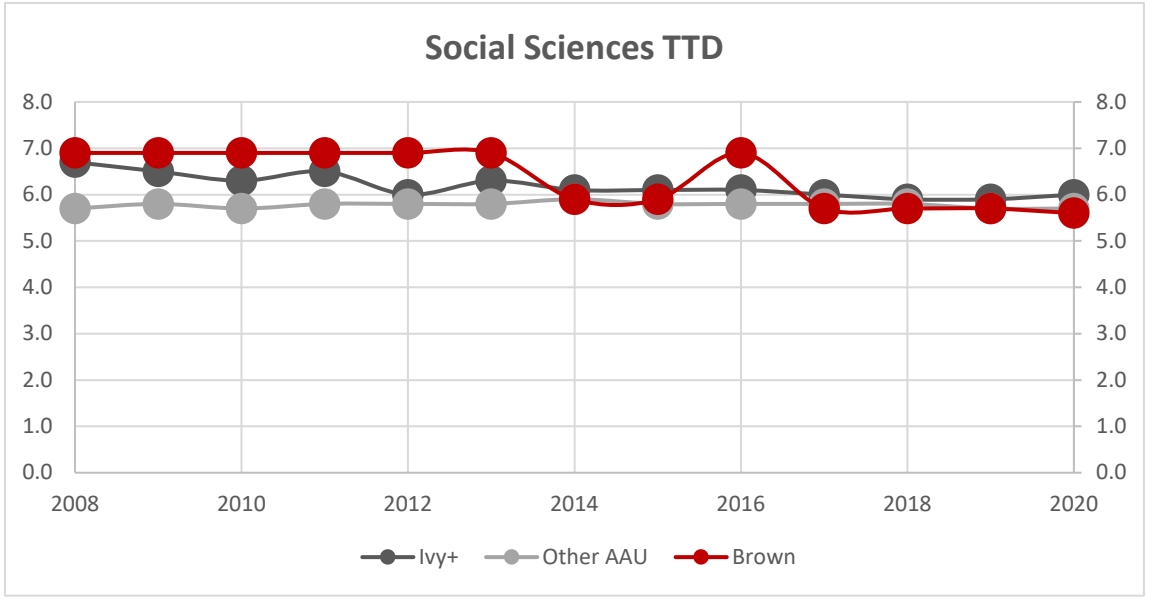
Physical Sciences

	Brown	Ivy+	Other AAU	Total AAU
2008	5.9	5.3	5.1	5.3
2009	5.9	5.2	5.1	5.2
2010	5.9	5.3	5.3	5.3
2011	5.9	5.3	5.3	5.3
2012	5.9	5.3	5.3	5.3
2013	5.7	5.3	5.3	5.3
2014	5.9	5.3	5.3	5.3
2015	5.9	5.4	5.3	5.3
2016	5.7	5.3	5.3	5.3
2017	5.7	5.4	5.3	5.3
2018	5.3	5.4	5.3	5.3
2019	5.0	5.5	5.3	5.3
2020	5.1	5.4	5.2	5.3



Social Sciences

	Brown	Ivy+	Other AAU	Total AAU
2008	6.9	6.7	5.7	6.0
2009	6.9	6.5	5.8	6.0
2010	6.9	6.3	5.7	6.0
2011	6.9	6.5	5.8	6.0
2012	6.9	6.0	5.8	5.9
2013	6.9	6.3	5.8	5.9
2014	5.9	6.1	5.9	6.0
2015	5.9	6.1	5.8	5.9
2016	6.9	6.1	5.8	5.9
2017	5.7	6.0	5.8	5.8
2018	5.7	5.9	5.8	5.9
2019	5.7	5.9	5.7	5.7
2020	5.6	6.0	5.7	5.7



Notes:

1. Time-to-degree is calculated from entry date into doctoral program to graduation
2. Not all institutions provided data for all years

3. Ivy+ includes: Chicago, Columbia, Cornell, Duke, MIT, Penn, Princeton, Stanford, and Wash U
4. Other AAU includes: Arizona, Colorado, Emory, Indiana, Iowa, Kansas, Michigan, Michigan State, Minnesota, Missouri, Nebraska, North Carolina, Oregon, Pittsburgh, Purdue, Rochester, SUNY Buffalo, SUNY Stony Brook, Syracuse, Texas A&M, UC Davis, UC Irvine, UC San Diego, UC Santa Cruz, Vanderbilt, Virginia, and Wisconsin
5. Programs at peer institutions were grouped according to Brown's taxonomy of divisions.

Reference page:
IV. Curriculum, 20

APPENDIX H

AAUDE Doctoral Exit Survey Items 2018-19				
Survey Question	**Scale**	**Brown N**	**Brown Score**	**Avg other schools**
Please rate your overall satisfaction with each of the following: Your academic experience at this university	Poor-Excellent 1-5	221	4.2	4.1
Please rate your overall satisfaction with each of the following: Your student life experience at this university	Poor-Excellent 1-5	221	4.0	3.7
Please rate your overall satisfaction with each of the following: Your overall experience at this university	Poor-Excellent 1-5	221	4.2	3.9
Please rate the following aspects of your doctoral program: Quality of academic advising and guidance	Poor-Excellent 1-5	71	3.9	3.8
Please rate the following aspects of your doctoral program: Quality of graduate level teaching by faculty	Poor-Excellent 1-5	71	3.8	3.8
How helpful was the advice you received from your dissertation/thesis advisor in each of these areas? Academic career options	Not at all helpful-Very Helpful 1-4	206	3.5	3.4
How helpful was the advice you received from your dissertation/thesis advisor in each of these areas? Search for employment or training	Not at all helpful-Very Helpful 1-4	185	3.3	3.2
How helpful was the advice you received from your dissertation/thesis advisor in each of these areas? Nonacademic career options	Not at all helpful-Very Helpful 1-4	172	3.0	3.0
How helpful was the advice you received from your dissertation/thesis advisor in each of these areas? Your dissertation research	Not at all helpful-Very Helpful 1-4	219	3.6	3.6
How helpful was the advice you received from your dissertation/thesis advisor in each of these areas? Selection of a dissertation topic	Not at all helpful-Very Helpful 1-4	213	3.6	3.6
How helpful was the advice you received from your dissertation/thesis advisor in each of these areas? Writing and revising your dissertation	Not at all helpful-Very Helpful 1-4	220	3.5	3.5
Please rate the adequacy of support you were provided during your doctoral education and dissertation research in the following areas: Financial support	Poor-Excellent 1-5	219	4.2	3.7
Please rate the adequacy of support you were provided during your doctoral education and dissertation research in the following areas: Information technology (IT) resources	Poor-Excellent 1-5	214	4.1	3.8
Please rate the adequacy of support you were provided during your doctoral education and dissertation research in the following areas: Laboratory, clinical, studio or other physical facilities	Poor-Excellent 1-5	133	4.1	4.1
Please rate the adequacy of support you were provided during your doctoral education and dissertation research in the following areas: Library and electronic research resources	Poor-Excellent 1-5	218	4.2	4.4
Please rate the adequacy of support you were provided during your doctoral education and dissertation research in the following areas: Your personal work space [e.g., desk or office]	Poor-Excellent 1-5	217	3.5	3.6

How effective was this orientation in helping you to understand the process of completing your doctoral degree?	Very ineffective-Very Effective 1-5	145	4.1	3.8
To what extent do you agree or disagree with each of the following statements? Students in my program are treated with respect by faculty	Strongly disagree-Strongly agree 1-5	68	4.2	4.1
If you were to start your doctoral career again...Would you select the same field of study?	Definitely Not-Definitely 1-5	69	4.2	4.2
If you were to start your doctoral career again...Would you select this same university?	Definitely Not-Definitely 1-5	69	4.0	4.0
Would you recommend this university to someone considering your field of study?	Definitely Not-Definitely 1-5	69	4.0	4.1
Other than course grades and results of written or oral examinations, did your doctoral program provide a formal assessment of your academic progress at least annually?	% responding Yes	221	77.4%	67.1%
Did your doctoral program provide you with a written set of expectations about academic requirements and expected progress?	% responding Yes	221	90.0%	89.3%
Was there another faculty member whom you considered to be a mentor (i.e., a faculty member who gave you advice about your education career development or other matters of concern to you as a graduate student)?	% responding Yes	221	52.9%	57.7%
If 'yes', was the faculty member in your program/department?	% responding Yes	114	81.6%	77.1%
Were you a research assistant (RA) at any time during your graduate studies?	% responding Yes	220	65.9%	70.1%
If yes, how helpful was this RA experience with respect to your professional development?	Not at all helpful-Very Helpful 1-4	145	3.7	3.6
Were you a teaching assistant (TA) at any time during your graduate studies?	% responding Yes	221	94.1%	81.2%
Did you receive training in instructional methods at any time during your graduate studies?	% responding Yes	221	69.7%	64.8%
If yes, how helpful was this training?	Not at all helpful-Very Helpful 1-4	154	3.1	3.1
If you made a presentation away from campus, did you receive funds for travel from any of the following sources: (check all that apply) A research grant	% selecting	212	57.5%	53.7%
If you made a presentation away from campus, did you receive funds for travel from any of the following sources: (check all that apply) Other institutional funds	% selecting	212	60.8%	41.8%
If you made a presentation away from campus, did you receive funds for travel from any of the following sources: (check all that apply) Your program	% selecting	212	70.3%	62.1%

Participating institutions (note that not all schools asked all survey questions):

Brown	Maryland	Texas A&M
Colorado	Michigan	UC Irvine
Cornell	MIT	UCLA
Emory	North Carolina	UCSD
Florida	Penn State	Vanderbilt
Johns Hopkins	Princeton	Wash. Univ
Kansas	Rutgers	Wisconsin

Reference page:
V. Advising, Mentoring, and Climate, 24

APPENDIX I

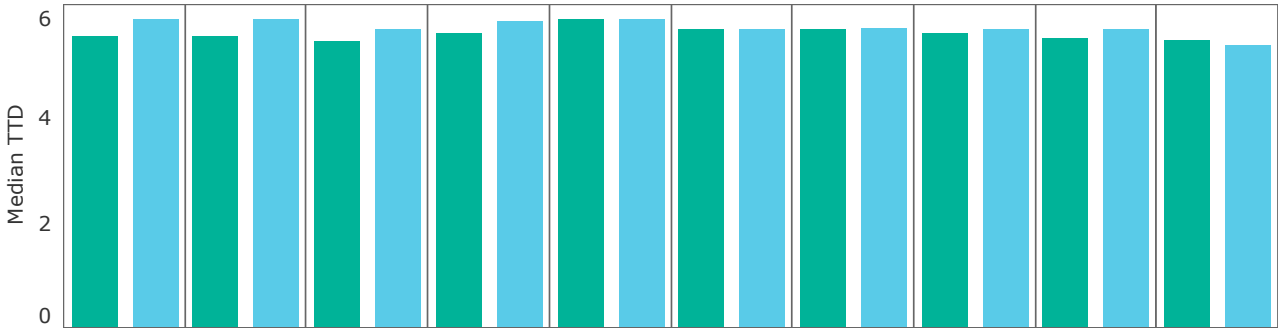
BROWN Graduate School

All divisions

Printed on July 18, 2022

ENROLLED STUDENT METRICS

Median Time to Degree by Entry Year

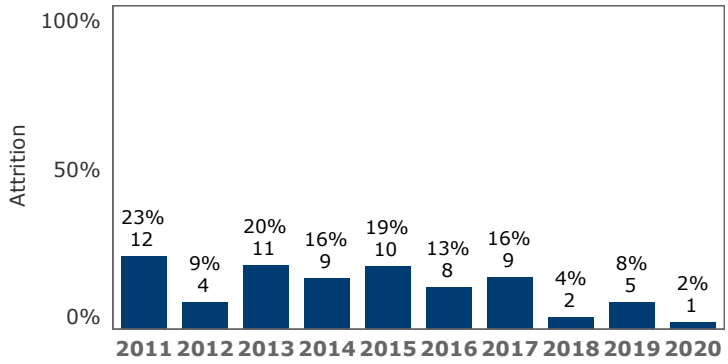


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Graduated N	222	182	206	253	233	185	221	201	206	185
Division TTD	5.52	5.52	5.42	5.56	5.82	5.64	5.65	5.56	5.47	5.44
All Doctoral TTD	5.82	5.82	5.65	5.81	5.83	5.65	5.65	5.64	5.64	5.35

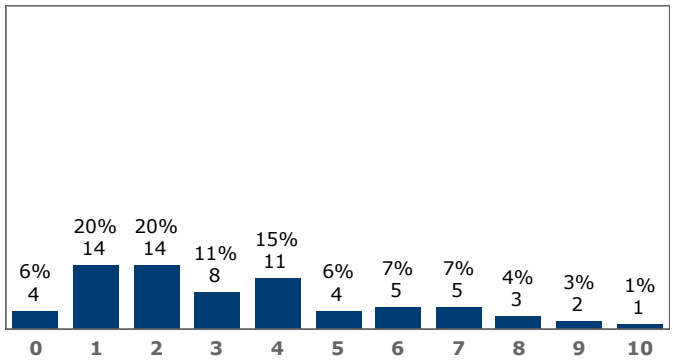
Divisional Attrition

Please note: In these charts, students currently on leave are included in attrition numbers.

By Entry Year



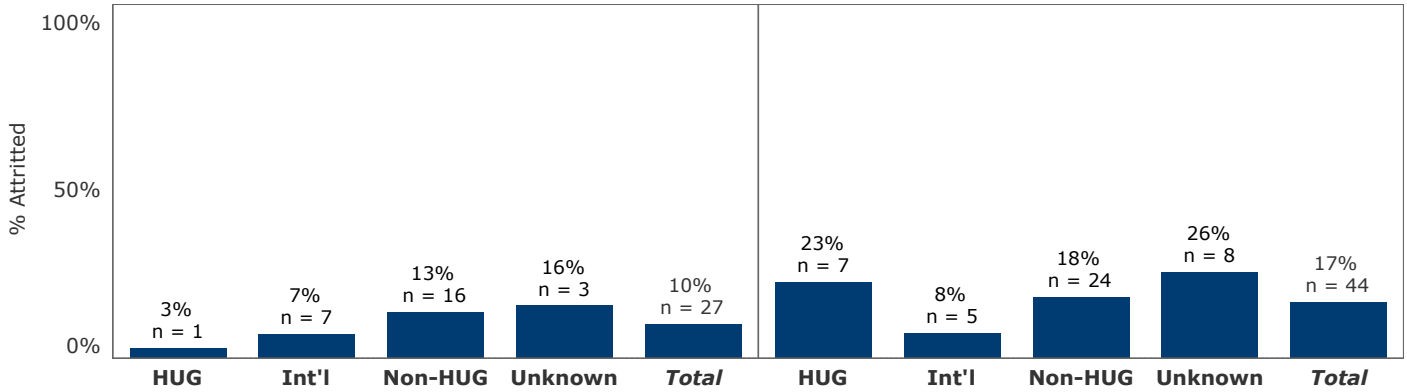
By # of Completed Years, Among Attritted



Divisional Attrition by Sex and Race/Ethnicity, Entry Years 2011 - 2020

Female

Male



BROWN Graduate School

Humanities

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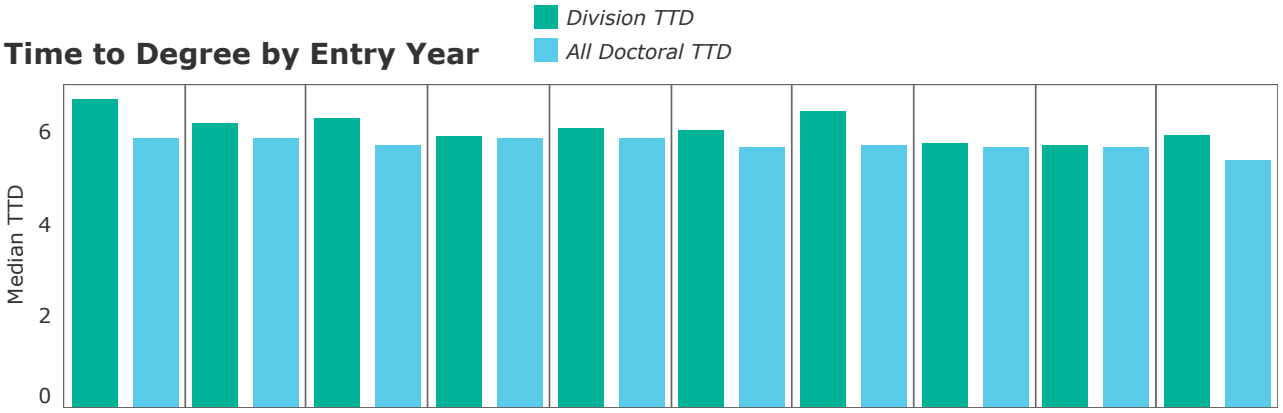
ENROLLED STUDENT METRICS

Median Time to Degree by Entry Year

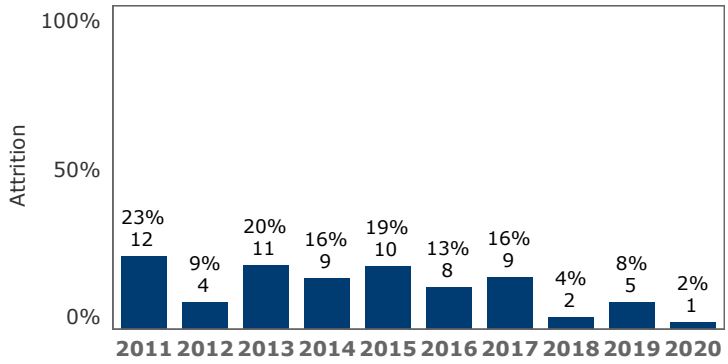


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Graduated N	222	182	206	253	233	185	221	201	206	185
Division TTD	6.65	6.16	6.26	5.86	6.05	5.98	6.38	5.71	5.66	5.89
All Doctoral TTD	5.82	5.82	5.65	5.81	5.83	5.65	5.65	5.64	5.64	5.35

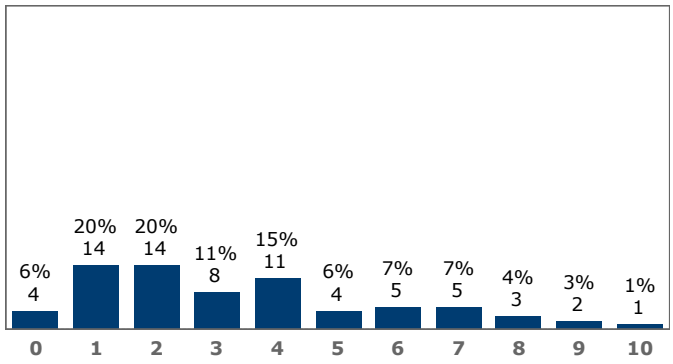
Divisional Attrition

Please note: In these charts, students currently on leave are included in attrition numbers.

By Entry Year



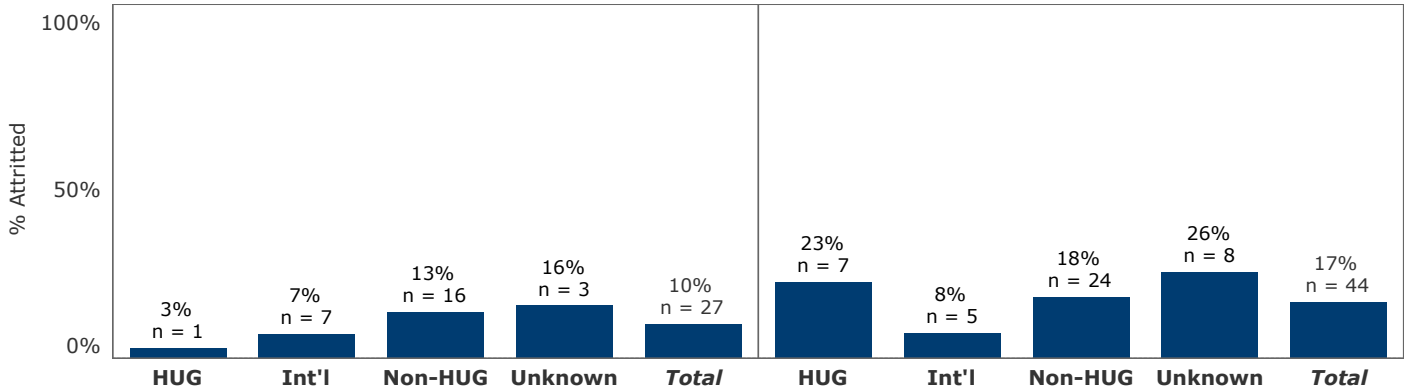
By # of Completed Years, Among Attritted



Divisional Attrition by Sex and Race/Ethnicity, Entry Years 2011 - 2020

Female

Male



BROWN Graduate School

Life and Medical Scien..

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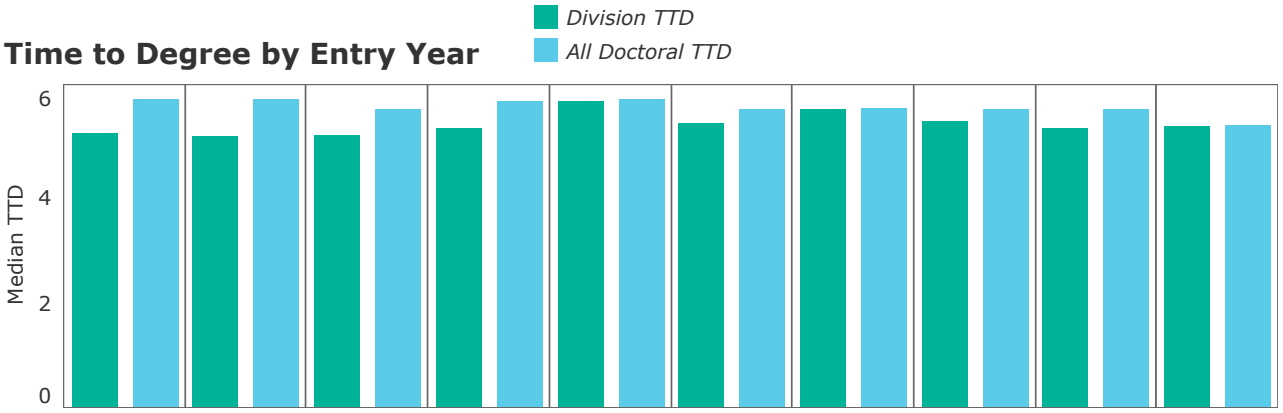
ENROLLED STUDENT METRICS

Median Time to Degree by Entry Year

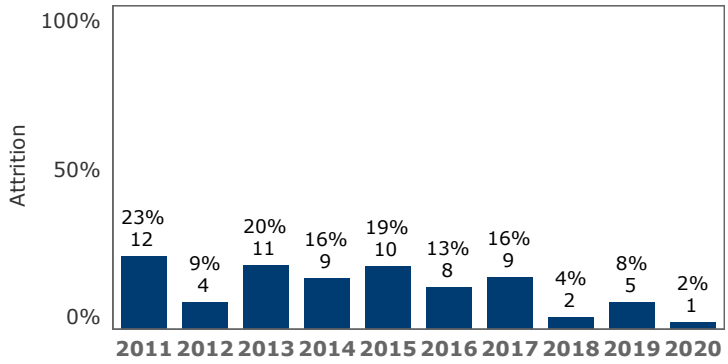


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Graduated N	222	182	206	253	233	185	221	201	206	185
Division TTD	5.18	5.14	5.16	5.27	5.81	5.37	5.64	5.42	5.29	5.30
All Doctoral TTD	5.82	5.82	5.65	5.81	5.83	5.65	5.65	5.64	5.64	5.35

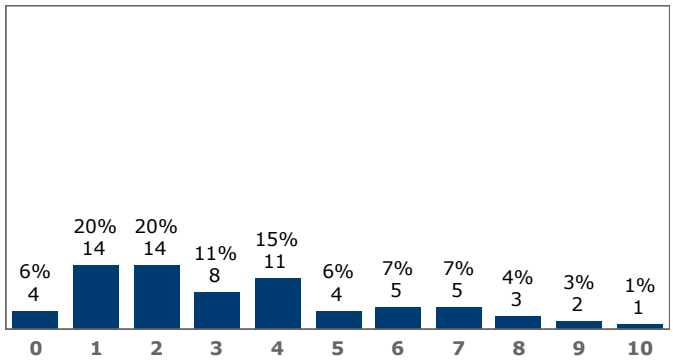
Divisional Attrition

Please note: In these charts, students currently on leave are included in attrition numbers.

By Entry Year



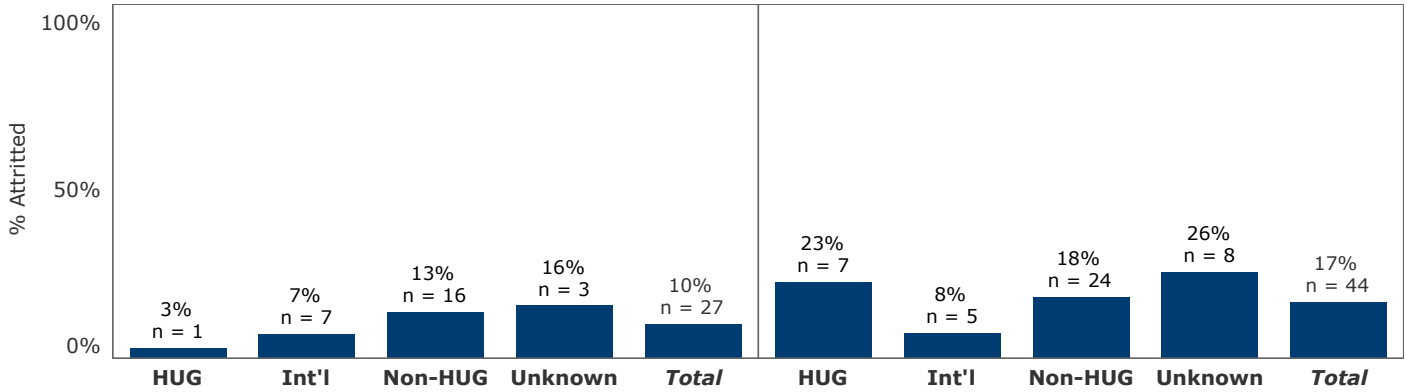
By # of Completed Years, Among Attritted



Divisional Attrition by Sex and Race/Ethnicity, Entry Years 2011 - 2020

Female

Male



BROWN Graduate School

Physical Sciences

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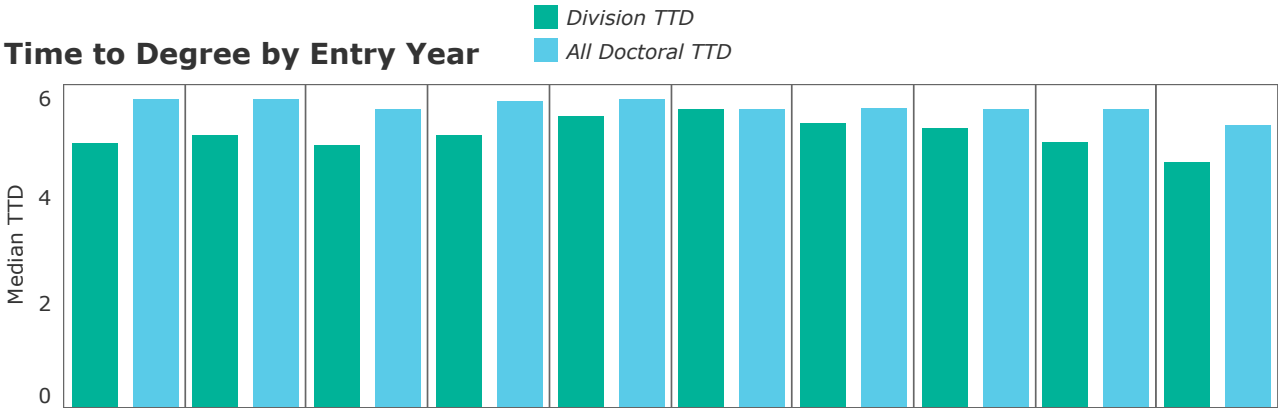
ENROLLED STUDENT METRICS

Median Time to Degree by Entry Year

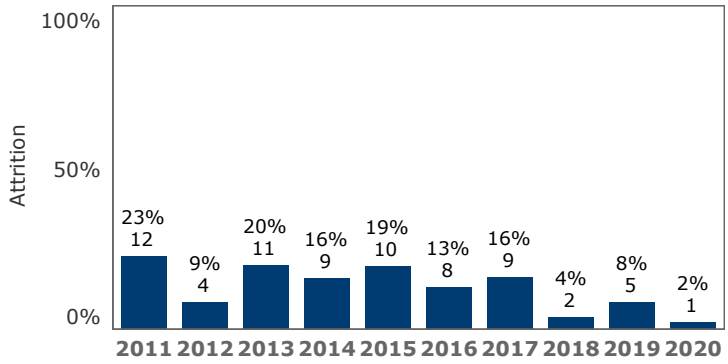


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Graduated N	222	182	206	253	233	185	221	201	206	185
Division TTD	5.01	5.16	4.98	5.16	5.50	5.65	5.37	5.28	5.01	4.65
All Doctoral TTD	5.82	5.82	5.65	5.81	5.83	5.65	5.65	5.64	5.64	5.35

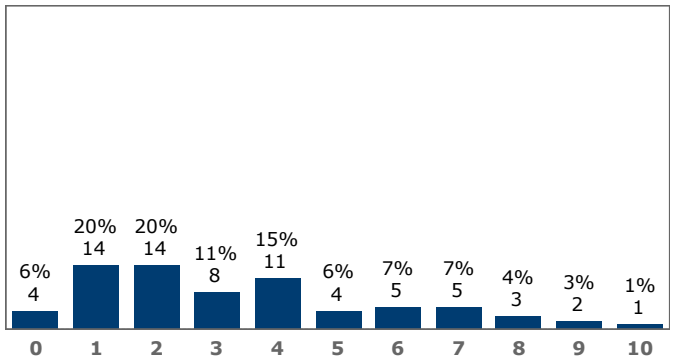
Divisional Attrition

Please note: In these charts, students currently on leave are included in attrition numbers.

By Entry Year



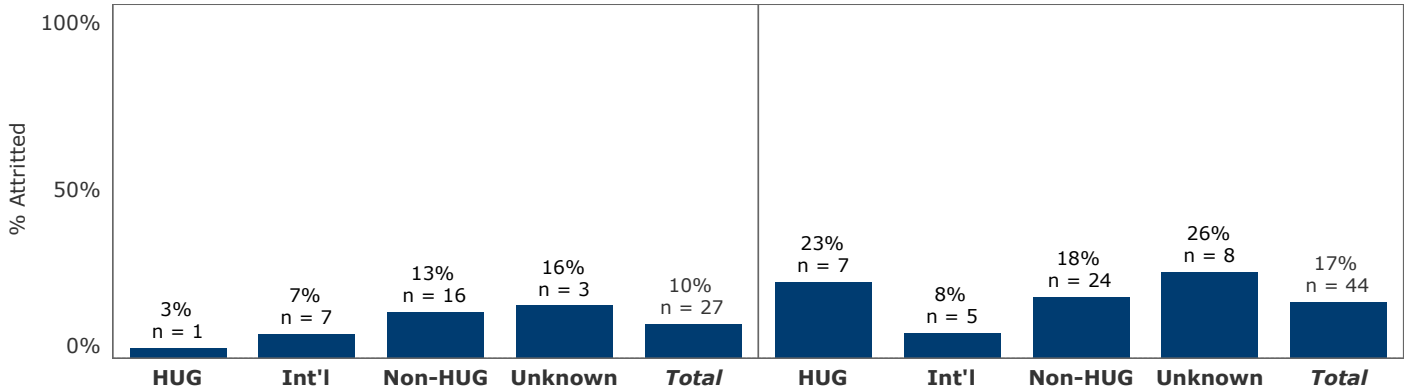
By # of Completed Years, Among Attritted



Divisional Attrition by Sex and Race/Ethnicity, Entry Years 2011 - 2020

Female

Male



BROWN Graduate School

Social Sciences

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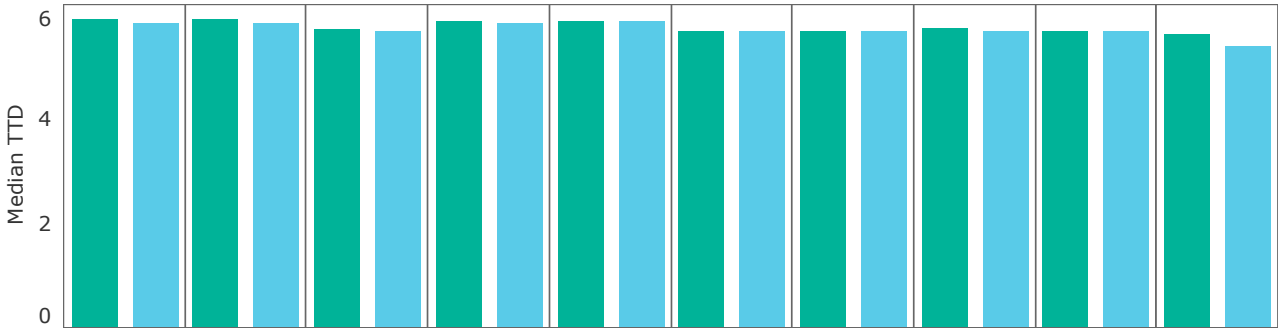
ENROLLED STUDENT METRICS

Median Time to Degree by Entry Year

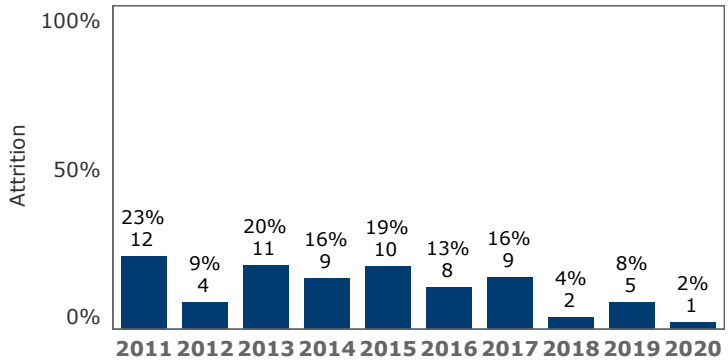


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Graduated N	222	182	206	253	233	185	221	201	206	185
Division TTD	5.87	5.87	5.67	5.85	5.83	5.64	5.65	5.69	5.66	5.57
All Doctoral TTD	5.82	5.82	5.65	5.81	5.83	5.65	5.65	5.64	5.64	5.35

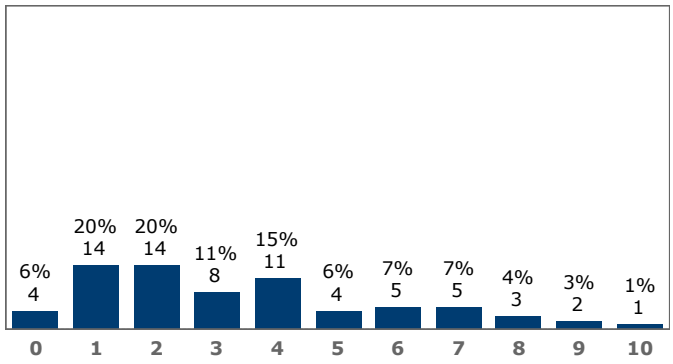
Divisional Attrition

Please note: In these charts, students currently on leave are included in attrition numbers.

By Entry Year



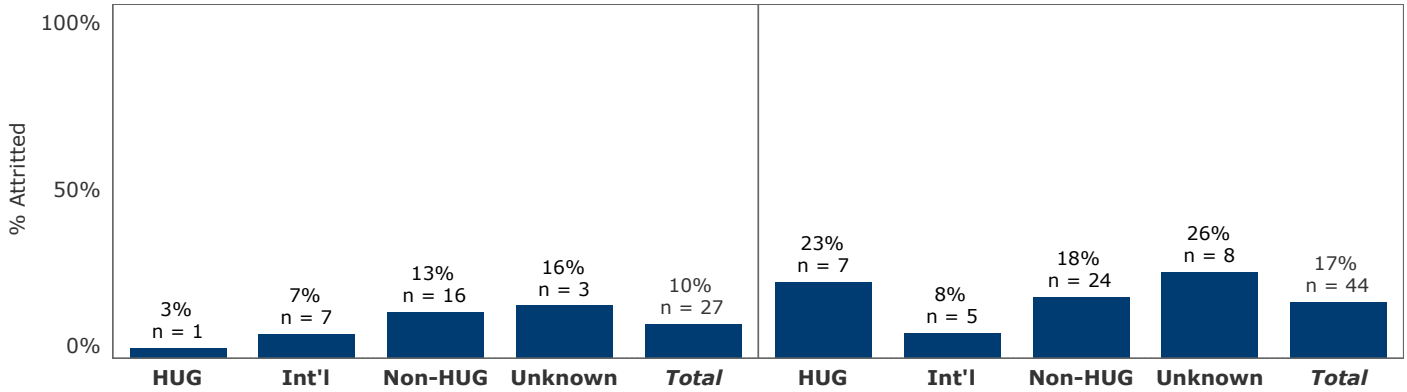
By # of Completed Years, Among Attritted



Divisional Attrition by Sex and Race/Ethnicity, Entry Years 2011 - 2020

Female

Male

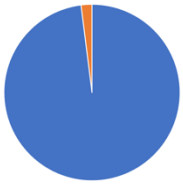


Collaborative Humanities: Research Outputs

The Cogut Institute distributed surveys to 50 faculty members who taught collaborative humanities seminars between fall 2017 and fall 2022 and 60 doctoral students previously or currently enrolled in the certificate program. The two surveys were administered between April 22, 2022 and May 6, 2022 through email.

Do collaborative humanities seminars contribute to research?

Faculty
Has your collaborative humanities teaching had an impact on your own research?
(n=47) Yes: 89%



Doctoral Students
Did your work in the program contribute to the development of your doctoral research?
(n=50) Yes: 98%

Faculty Research

47 faculty members contributed answers (94% response rate). 8 respondents team-taught undergraduate courses and were recipients of the research-based, interdisciplinary Collaborative Humanities Course Award. The 39 other respondents taught a graduate seminar included as an elective in the Doctoral Certificate in Collaborative Humanities. In total, respondents are reporting on their perception of the contribution that participation in the respective programs made on their research. The respondents were primarily affiliated in the humanities (72%) and with the humanistic social sciences (23%). Two respondents are faculty members in cognitive sciences.

The survey, to probe the nature of the impact, explored three categories in particular: in decreasing order of reported impact, these were **research themes** (74%, n=45), **research methods** (57%, n=47), and **new forms of research collaboration** (49%, n=47). Some faculty members report important and long-lasting impact on their research project: "The impact of [the class]," one wrote, "was pretty profound. I would say the book [I am writing] has changed radically as a consequence of the experience." Another stated: "It fundamentally reshaped my own book manuscript."

In open-ended responses, about a third of respondents emphasized the benefits of engaging deeply with **another discipline and scholarly corpus**. For example, a faculty member wrote: "I honed my skills in bridging literary and visual analysis" and "my current research project is expressly a multimedia work that has gained enormously from the interdisciplinary synergies of the Cogut collaborative project."

Over a fifth highlighted the contribution of the seminars to the **development of questions and concepts**: "The theoretical and methodological questions of the seminar directly influenced the direction of my current monograph." In two instances, the collaborative humanities seminar provided the resources to turn the class into a performance and practice space, for example, to reconstruct and reproduce historical experiments and crafts (i.e. modes of knowing and making things), or to stage and practice different modes of reading.

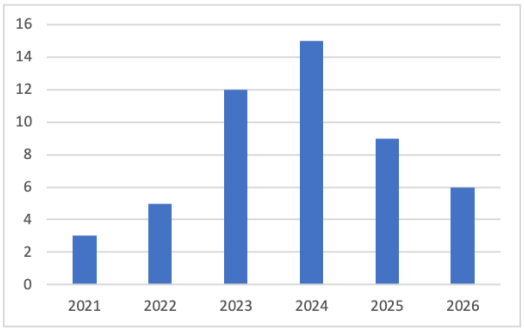
Respondents who reported little or no impact highlighted that the specific seminar had built on prior research rather than the other way around: "I would stress," one such respondent noted, "that I find the idea and the reality of these collaborative seminars to be conducive to the enriching of research."

Faculty members listed **over 60 peer-reviewed projects** — from articles to monographs — that are published, forthcoming, or in progress and that they "consider informed by the collaborative humanities seminar(s)." Some examples include:

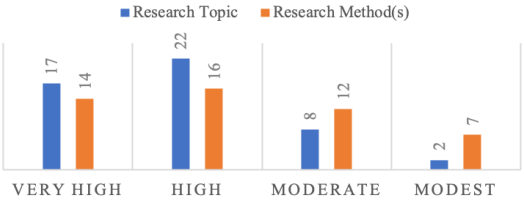
- Ariella Aïsha Azoulay, Wendy Ewald, Susan Meiselas, Leigh Raiford & Laura Wexler (eds.), Collaboration — Potential History of Photography (Thames & Hudson, forthcoming).
- Tamara Chin, "The Afro-Asian Silk Road: Chinese Experiments in Postcolonial Premodernity." PMLA 136/1 (January 2021): 17-38.
- Paul Guyer, A Philosopher Looks at Architecture (Cambridge University Press, 2021).
- Bonnie Honig, Shell Shocked: Feminist Criticism After Trump (Fordham University Press, 2021).

- Juliet Hooker, Black Grief/White Grievance: Democracy and the P roblem of Political Loss (Princeton University Press, forthcoming 2023).
- Gerhard Richter, Uncontainable Legacies: Theses on Intellectual, Cultural, and P olitical Inheritance (Edinburgh University Press, 2021).
- Massimo Riva and Fulvio Domini, "The History and Science of VR: An Experiment at Brown University." The Italianist (forthcoming, 2023).
- Holly Shaffer, "Eclecticism and Empire, in Translation," Modern P hilology 119/1, Special Issue: "Multiplicities: Recasting the Early Modern Global," eds. Carina Johnson and Ayesha Ramachandran (August 2021): 147-165.
- Vazira Zamindar and Tapati Guha-Thakurta, How Secular is Art? The P olitics of Art, History and Religion in South Asia (Cambridge University Press, 2022).

Doctoral Research



50 past or present doctoral students submitted responses (83% response rate) to a survey that offers a snapshot in a developing process. Students typically enroll in the early years of their doctoral program: most certificate students are still matriculated at Brown and at different stages in the process of defining their doctoral research and pursuing publications. Of the 50 respondents, three have completed their Ph.D. degree to date, and five plan to graduate in 2022. 54% of the respondents anticipate graduating in 2023 and 2024, and 30% in 2025 and 2026.



80% of respondents (n=49) described as "very high" or "high" the contribution of their work in the program to the development of their **research topic**, and 61% described in the same terms the contribution to their **research method(s)**. Open-ended answers also highlight this, among others: "I developed the core of my dissertation in the project development workshop [the certificate's capstone course]"; "it helped me see my own materials in new and more creative ways"; "I was introduced to texts and methodologies that became central to my dissertation"; and "it helped forge some of the basic thrusts in my research."

Sample dissertation titles by program participants who emphasized the impact of the collaborative humanities on their research topic include "Blurred: A Visual History of Racial Mixture (1920-1940)," "When Lightning Strikes Twice: Race, Memory, Performance and the Rebirth of the Ku Klux Klan," "'We Did It Reddit!': Injury, Conspiracy, Race and the Digital," "The Political Imaginary of User Democracy," "Reflections on Acceleration: Railroads and Travel Writing in Afro-Luso-Brazilian Scenes," "Literary Strate of Imperial Borders: Sinoscript Culture and Its Encounters around the 8th Century," "Witnessing as Worldbuilding: Practicing Decolonization in Palestinian Moving Images," "Halakhic Woman: Gender, Practice, and Obligation in American Orthodox Judaism," and "Outlandish Tongues: Trilingual Translations in Early Modern Mexico."

Doctoral students also emphasized the **formative role of wider interdisciplinary cohorts** to "test out ideas," forge enduring partnerships based on thematic affinities, and share experiences in the process of completing doctoral projects. For 44% of respondents (n=50), the impact of the program on their research orientation also extended to the **composition of their dissertation committee** while 74% benefitted from informal mentoring or advising from collaborative humanities seminar instructors about their doctoral research.

15 respondents reported **17 published or forthcoming peer-reviewed publications** and eight articles under review, with 73% of these respondents describing the impact of the program on their research topic as "very high" or "high." An overlapping but distinct set of 15 respondents are recipients of **external research awards** ranging from project grants to prestigious dissertation fellowships (ACLS/Mellon, SSRC, Association for Jewish Studies). Eight of these respondents described the contribution of the program to the development of their research topic as "very high," and 80% saw it as either "very high" or "high." Half thought the impact on their research methods "very high" or "high."

APPENDIX K

Institutional Structures at Peer Institutions

The Mellon Report from 2016 highlighted the importance of a graduate school that is empowered to provide leadership on matters such as advising practices, attention to attrition, support for professional development, and reform of graduate education more generally.[1]

Along these lines, recent years have seen a number of peer institutions building up centralized units and resources for the support of graduate education. For instance, the University of Chicago has expanded UChicago GRAD and the Graduate Schools at Princeton and Columbia have expanded their in-house support for career diversity.

That said, there are several variables in the structures of graduate schools (or the nearest equivalent) at peer institutions.[2] The most significant of these are two:

1. What unit controls the student support budgets and sets the admissions targets for the graduate programs.
2. The leadership of the graduate school (or the nearest equivalent), including to whom that person reports.

In surveying peer institutions, the first of these can be difficult to determine with certainty. Nonetheless, one can see a spectrum of approaches among Brown's IvyPlus peers. At several peers, a centralized graduate school plays the principal role in setting program size and admissions targets for the individual graduate programs. In this model, external funding and additional resources, such as endowments located in individual units, still play an important role; but the graduate school oversees how these other sources figure into a larger determination of program size. This degree of centralization provides a unit to backstop funding in the case of overyields as well as to coordinate program sizing with larger institutional priorities. Princeton, Yale, and Columbia seem to operate largely on this model.

At the other end of the spectrum are institutions in which the graduate school (or its nearest equivalent) plays a very limited role in determining the allocation of student support and thus in setting program sizes. In several of these cases, the institution does not designate the unit as a "graduate school" In this model, graduate student funding is provided directly through decentralized academic units, such as a Division of Biological Sciences or School of Humanities, Arts, and Sciences. These units thus bear responsibility for supporting the graduate programs in their area. Here, a graduate-school-type unit may still set stipend rates, establish funding policies, offer distinguished fellowships, and provide a range of student development and student affairs programming. The University of Chicago, MIT, University of Pennsylvania, and Stanford fall toward this end of the spectrum.

Brown's Graduate School stands in the middle of this spectrum, perhaps closer to the first pole. With respect to programs under the Dean of the Faculty and in Engineering, the Graduate School holds the student funding budget, works with programs to set the program size, and can backstop funding in the case of overyields. In relation to the Division of Biology and Medicine as well as,

[1] Mellon Report, 56-61.

[2] Because of the task force's focus on doctoral programs, we leave aside the matter of support for master's programs and thus of the relationship between the Graduate School and the School of Professional Studies.

more recently, the School of Public Health, Brown's model is more decentralized. Cornell and Harvard also appear to have hybrid models.

With regard to the second question—the leadership of the graduate school or nearest equivalent, the chart below is based on the administrator who serves as the lead among the IvyPlus graduate deans.

	Unit	Title of senior administrator	Reports to
Berkeley	Graduate Division	Vice Provost for Graduate Studies and Dean of the Graduate Division	Provost
Chicago	UChicagoGRAD	Vice Provost for Academic Affairs	Provost
Columbia	Graduate School of Arts and Sciences	Dean of the Graduate School	Executive Vice President for Arts and Sciences and Dean of the Faculty of Arts and Sciences
Cornell	Graduate School	Dean of the Graduate School and Vice Provost for Graduate Education	Provost
Harvard	Graduate School of Arts and Sciences	Dean of the Graduate School of Arts and Sciences	Dean of the Faculty of Arts and Sciences
MIT	Office of Graduate Education	Vice Chancellor	Chancellor
Penn	Grad Center at Penn	Vice Provost for Education	Provost
Princeton	Graduate School	Dean of the Graduate School	Provost
Stanford	Office of the Vice Provost for Graduate Education	Vice Provost for Graduate Education and Postdoctoral Affairs	Provost

Yale	Graduate School of Arts and Sciences	Dean of the Graduate School	Vice President and Dean of the Faculty of Arts and Sciences

As noted, neither the discussions with students and faculty nor the internal discussions of the task force identified Brown's current structure as a major challenge or in need of transformation. The most relevant point that did emerge–and arose a number of times–concerned the challenges for programs that straddle the Division of Biology and Medicine and other units (specifically, Neuroscience, Biomedical Engineering, and Computational Biology). This matter is discussed under "Cross-unit programs" in the body of Section IV.

For this reason, the task force is not recommending a significant restructuring of support for doctoral programs but supports greater alignment of funding policies across units in order to remove barriers and challenges for interdisciplinary programs that span these units.

Reference page:
VIII. Conclusion: Investing in Excellence, 42