

Final Report of the Provost's Committee on *Reimagining Doctoral Education*

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Executive Summary

The Reimagining Doctoral Education (RIDE) Committee was created in the wake of Duke's 2017 strategic plan, *Together Duke: Advancing Excellence through Community*, which called for a university-wide appraisal of doctoral education. Over eighteen months of work, the RIDE Committee gathered and studied qualitative and quantitative data on doctoral training across the country and here at Duke. The committee considered:

- reports on doctoral education produced over the past two decades by foundations, disciplinary societies, and national academies;
- information on significant initiatives underway at major research universities;
- an internal inventory of extra-departmental opportunities for Duke doctoral students;
- information from a series of meetings with key stakeholders – doctoral students; senior leaders at The Graduate School (TGS); Deans and other leaders in Duke's nine other schools; Directors of university-wide institutes and initiatives (UICs); Directors of Graduate Studies (DGSs), graduate faculty; Assistants to DGSs (DGSAs); and key staff in Career Services; and
- surveys of doctoral faculty, doctoral alumni, and current doctoral students.

We also received extensive feedback on an initial draft of the report from stakeholders across the university.

Although cognizant of the heterogeneity across Duke's 54 separate doctoral programs throughout our study, we found overarching strengths and shortcomings of doctoral education at Duke. First and foremost, Duke provides doctoral students with access to superb faculty, excellent facilities, and unusually low barriers to interdisciplinary experiences beyond specific programs. Every year, we produce scores of doctoral recipients who land well, with the habits of mind, expertise, and ingenuity to build impressive careers as leading scholars.

At the same time, however, the committee found patchiness in the capacity of doctoral students to take full advantage of the university beyond their programs; insufficient progress on developing diverse and inclusive learning communities; uneven quality of advising and mentoring; a need for better coordination among the provost's office, TGS, senior leadership at other schools, and individual doctoral programs; and a compelling case for specific programs to reconsider how their missions align with curricula and other key elements of doctoral training. Finally, we heard a strong desire to move our funding mechanisms for doctoral education toward the norm among leading research universities – that is, twelve-month funding for five years of doctoral training.

Based on this evaluation, and on the recognition that 21st century societies face daunting and unpredictable challenges, as well as rapidly emerging opportunities, our report calls for a revised mission statement for doctoral education that places as much focus on the formation of creative, adaptive scholars poised for leadership as on the production of world-class scholarship. We propose that:

“The primary mission of graduate education at Duke University is to prepare the next generation of scholarly, educational, and professional leaders. In order to fulfill this mission, we seek to instill in each student a key set of values and capacities necessary for the production of knowledge in the service of society, as well as responsible membership in a community of scholars. These key attributes include: independent critical judgment, academic rigor, intellectual honesty, the ability to frame and conduct important agendas for scholarly inquiry, familiarity with collaborative work, and effective communication skills.”

This mission statement serves as the foundation for the three main goals of this report:

- 1) **Make the Most of Duke.** Here we call for greater opportunities for doctoral students to participate in **collaborative research teams** and **hone communications skills** that enable them to reach diverse audiences; the creation of a small number of **supplemental mentors** to improve awareness of opportunities beyond programs; expansion of access to off-campus **internships** that amplify research capacities for doctoral students; acceleration of progress on **diversity and inclusion** within our doctoral programs; provision of **affordable housing**; and greater attention to **wellness** among doctoral students.
- 2) **Strengthen University Partnerships.** In this segment of the report, we recommend an update of our “Core Expectations for Graduate Education at Duke,” and much greater reliance on this statement of best practices as **communal touchstones** for faculty and doctoral students; a greater stress on **team-based advising and mentoring**, along with **heightened accountability** for effective, student-centered advising and mentoring; **better training and professional development opportunities** for DGSs and DGSAs; and greater attention within schools to the **trade-offs between program size and sufficient per student investment** in doctoral training.
- 3) **Advance the PhD.** Here we ask each doctoral program to undertake a “**deep dive**” into its curriculum and other key features of its doctoral training in light of its more specific goals, wider university opportunities and imperatives, and transformations and challenges in the national and global landscape. We also call for the provision of **seed grants** to facilitate new undertakings suggested by self-studies; a requirement of annual **intellectual development plans** for each doctoral student; a discussion of those plans with a faculty member other than the main supervisor; **annual progress review** of all students in a given program; exploration of **peer mentoring**; explicit attention to doctoral advising and mentoring as a dimension of **evaluation for tenure and promotion**; provision of appropriate **incentives for faculty and doctoral students to seek external funding to support doctoral training**; and the revision of the **external review process** for doctoral programs across the university.

The report concludes with some reflections on the implementation of our recommendations. We identify **who at Duke should be responsible** for carrying out specific proposals and how we might **deploy funds** set aside to support *Together Duke* for these endeavors. Over the next five years, we ask that the provost **set aside \$8 million for strategic investments** in doctoral training. We also call for the provost to create a RIDE Implementation Committee to guide the work of the provost's office, TGS, other schools, and doctoral programs. That follow-on committee should operate with an **experimental ethos**, so that we periodically assess whether undertakings achieve their intended objectives at acceptable costs.

In many ways, our report echoes the recommendations of leading inquiries into doctoral training since the turn of the millennium. Progress toward achieving those recommendations, however, has been notably slow across the country, largely because of insufficient efforts to reconfigure the core incentives for faculty, departments, and doctoral students. There is now growing attention to the importance of incentivizing excellent, student-centered doctoral training by key funders of doctoral education, such as the National Science Foundation, the National Institutes of Health, and the Mellon Foundation.

Duke is particularly well-positioned to take advantage of this momentum. We have the capacity to demonstrate how a research university can meet the lofty aims articulated by these advocates for excellence in doctoral education. By embracing the recommendations outlined in this report, we can better equip Duke's doctoral recipients to adapt to the quickly changing intellectual and institutional currents of the 21st century through whatever career path they choose to pursue. And by seizing these opportunities, we believe that Duke can attract even stronger cohorts of doctoral students, sharpen our capacity to foster world-class research, and build richer intellectual networks as our doctoral recipients carve out leadership roles within and outside academic settings.

I. Introduction

Duke's 2017 strategic plan, *Together Duke: Advancing Excellence through Community*, highlighted the need for a university-wide exploration of doctoral education to ascertain whether the university is adequately training scholars for the challenges and opportunities of the 21st century, whether within or outside academia. In response, Provost Kornbluth created the Reimagining Doctoral Education (RIDE) Committee in August of 2017 (Appendix 1), comprised of graduate faculty from all of Duke's schools, four doctoral students, and senior administrators, including the Associate Dean for Academic Affairs of The Graduate School (TGS). The provost asked the committee to ensure broad input in its deliberations, including but not limited to doctoral programs across campus, the graduate faculty, TGS staff, and other academic programs that incorporate doctoral students. (For a timeline of the committee's work, see Appendix 2.)

Doctoral education is a crucial component of Duke's overall mission. Doctoral students bring new ideas and intellectual approaches into departments, schools, and interdisciplinary communities. They forge connections across the divides of subfields and disciplines, and play crucial roles within collaborative research teams. Strong doctoral programs help Duke recruit and retain excellent faculty, since the world's best scholars often seek academic homes that are committed to training the next generation of scholars. Doctoral students play important roles in undergraduate education, whether as teaching assistants or as mentors within vertically integrated research teams. For Duke to thrive as a generator of new knowledge, a provider of excellent undergraduate and professional education, and an engaged partner with communities close to home and further abroad, we must provide world-class doctoral training.

Together Duke suggested a number of ways to broaden and deepen the quality of doctoral education, including: wider exposure to collaborative research; expanded avenues for disciplinary and interdisciplinary inquiry; greater access to internships, leadership training, and community engagement; more opportunities to learn effective communication skills and gain skills complementary to core disciplinary training; and enhanced advising and mentoring¹ to ensure consistently excellent intellectual guidance, as well as better understanding of opportunities across Duke and potential career paths. The goals identified in *Together Duke* mirror the recommendations of the many high-profile national organizations convened to study doctoral education over the past two decades. Whether coming from the National Academies, disciplinary societies, or leading foundations like Mellon and the Carnegie Foundation for the Advancement of Teaching, the message has been remarkably similar (see Appendix 3 for a detailed overview). There is powerful consensus on the need for doctoral programs to:

- Revisit the mission of their programs in light of the expectations, challenges, and opportunities for 21st century scholarship;

¹ The committee's deliberations and engagement with university stakeholders led to important discussions on "advising," "mentoring," and the importance of distinguishing these crucial, overlapping elements of doctoral training. In the context of doctoral education, we see "advising" as centrally related to core aspects of scholarly instruction, such as research methods, identification of key domains of knowledge, choice of research questions, iterated construction of a research agenda, critiques of analysis, and the development of scholarly arguments. We see "mentoring" as focused on an individual's intellectual maturation, professional development, and career aspirations. Mentors aid with networking, the nuts and bolts of employment searches, and the challenges of handling interpersonal conflicts or achieving work-life balance.

- Redesign cultures of advising and mentoring to emphasize a team approach rather than sole reliance on primary faculty supervisors;
- Diversify doctoral cohorts and ensure that programs create a welcoming climate and an inclusive environment for learning and intellectual growth;
- Improve pedagogical training;
- Experiment with new curricular and co-curricular elements to better align purpose/mission and program elements;
- Expand research opportunities that connect doctoral students with networks beyond their programs; and
- Raise awareness of and appreciation for the full breadth of career paths undertaken by alumni – including not only academic paths within the discipline, but also academic routes outside the discipline, and non-academic trajectories.

Despite the depth of consensus on these goals and focal points, the overall pace of reform across American research universities has been slow, with the notable exceptions of improved pedagogical training and greater investment in support for non-academic job searches. More far-reaching reconfiguration of doctoral programs has been stalled by several significant challenges and obstacles:

- Departmental reconsideration of curricula is a time consuming process, especially if it draws on careful analysis of relevant evidence and engagement with scholars from elsewhere, and so can easily fall away amid competing priorities and shifts in departmental leadership.
- In too many contexts, a disconnect between oversight responsibility for doctoral education and day-to-day engagement hampers the provision of high quality, student-centered doctoral training.
- Some faculty have concerns that curricular changes or other adjustments to doctoral training might disadvantage PhD recipients in academic job markets. In particular, these faculty see deep specialization as crucial to academic success. They worry that time spent on broadening intellectual and professional horizons will distract doctoral students from their core activities, rather than giving them the perspective, skill sets, and networks that will allow them to better deploy their specialized knowledge.
- The structure of grant funding in the laboratory sciences has led some faculty in those disciplines to expect their doctoral students to focus solely on grant-funded research.
- Across all fields, effective doctoral advising and mentoring rarely receives much weight in tenure and promotion decisions.

Given the broad consensus on steps needed to improve doctoral education, and the impediments that have precluded that improvement to date, the RIDE Committee has concluded that Duke needs to focus particularly on implementation mechanisms. A first step toward implementation is the articulation of a university-wide mission for doctoral education that takes the formation of the scholar, understood in all its current manifestations, as seriously as the production of scholarship. The next steps, which use that

mission statement as a guide, are centered on three overall goals for improving doctoral education at Duke:

- 1) **Make the Most of Duke:** actions at the university level to ensure that an appropriate array of intellectual opportunities outside the boundaries of specific degree programs are available to all doctoral students.
- 2) **Strengthen University Partnerships:** actions to augment coordination among The Graduate School, other Duke schools and departments, and the Provost's office in order to fulfill Duke's mission for excellent, student-centered doctoral training.
- 3) **Advance the PhD:** actions by individual doctoral programs to articulate their missions and align their program elements with their priorities.

To reach these goals, we need to coordinate resources and create appropriate incentives so that doctoral education at Duke has a foundation of support reflecting its abiding centrality to Duke's promise as one of the world's most vibrant research universities. The point about creation of incentives deserves particular emphasis. If we are to achieve more consistent excellence in doctoral training and make the adjustments necessary to keep our doctoral programs at the most exciting intellectual frontiers, we **must align our institutional incentives and priorities with those objectives**.

Throughout our deliberations, the committee has remained cognizant of the heterogeneity of doctoral training at Duke, which occurs in every corner of our campus, in every division of knowledge, and across 54 separate programs. Those doctoral programs vary greatly with regard to epistemological premises, modes of analysis, and the character of scholarly interactions among faculty and doctoral students. They also have varied patterns of career outcomes for degree recipients. As a result, our third goal stresses the pivotal importance of each doctoral program engaging in a process of self-examination. Such self-study will allow individual programs to update their most important objectives, if advisable, and to ensure that curricula and other facets of doctoral training support the achievement of their key goals.

As background to a fuller articulation of the goals and recommendations in this report, we provide in the next section an overview of the RIDE committee process and a discussion of our main findings.

II. Process and Findings

To gather input on doctoral education at Duke and across the nation, the committee:

- Conducted an external inventory to understand how select universities are adapting to: the evolving nature of academic research and teaching; the challenges of funding doctoral education; increasing competition for excellent applicants and matriculants; and the changing marketplace for doctoral degree holders. Appendix 4 compares Duke's standard doctoral funding packages with those of several other major American private research universities. A breakdown of Duke's doctoral funding by school and by year of graduate study is given in Appendix 5.
- Conducted an internal inventory of extra-departmental opportunities available to doctoral students at Duke (briefly summarized in Appendix 6). These opportunities include methodological

workshops, learning communities, interdisciplinary research projects, certificates, and internships, offered either by TGS, schools and institutes/initiatives, or the Provost's office, or developed independently by groups of doctoral students.

- Held focus group meetings with doctoral students, faculty at different career stages, Director of Graduate Study Assistants (DGSAs), Directors of Graduate Study (DGSs), and school Deans and Directors of university-wide Institutes, Initiatives, and Centers (UICs). (Appendix 7 provides an overview of our focus group conversations.) Each of these discussions identified strengths and weaknesses of graduate education at Duke, as well as ways to build on the former and address the latter.
- Surveyed doctoral students, PhD alumni, and faculty to assess views on the value of a Duke doctoral education, the quality of advising and mentoring, and exposure to scholarly enhancements outside of the discipline or core doctoral program. (Appendix 8 furnishes highlights from these surveys, as well as our survey instruments.)
- Met with senior TGS leaders at various points during the 2017-2018 academic year to gather their perspective on the challenges and opportunities for Duke doctoral education, and to gather feedback on the committee's initial findings.
- Discussed a first draft of this report with Dean's Cabinet, the Executive Committee of the Graduate Faculty, the Academic Programs Committee, Arts & Sciences Chairs, the Arts & Sciences Leadership Team, and the Advisory Council for Duke's Versatile Humanists Project (VH@Duke). Additionally, the first draft was circulated to DGSs, DGSAs and all others who participated in our focus group meetings. The committee also received extensive feedback from the Humanities Team within Arts & Sciences. Our final report reflects the input from these various constituencies.

This multi-pronged approach to fact-finding allowed the committee to synthesize qualitative and quantitative data about the diverse contexts of doctoral training at Duke, to think about broad trends and overarching issues that cut across programs and schools, and to envisage ways to catalyze university-wide action on priority areas for reform.

The External Landscape:

The committee's investigation of initiatives in doctoral education elsewhere made clear that many of our peers enjoy larger endowments that enable greater core financial support for doctoral education. One important measure concerns the capacity of universities to guarantee summer funding. Many of Duke's peers, including Harvard, Princeton, Brown, and Northwestern, provide twelve-month stipends for five years.

We also identified a number of promising experiments at other universities. Some of these innovations modify funding structures, such as the expansion of guaranteed summer funding (Michigan), and the provision of a post-doctoral semester or year for students who complete their degree within five years (Notre Dame). Other experiments focus on faculty training in mentoring (Stanford), pedagogical training (Columbia), the provision of interdisciplinary research experiences for doctoral students (University of California-Berkeley), and exposure to non-academic careers (University of Chicago). The University of

Cardiff has developed a particularly impressive set of integrated programs that cut across these areas of focus.

The Internal Landscape:

To address a longstanding concern about the financial underpinning of doctoral training, TGS has focused intensively over the last five years on raising funds to support graduate fellowships and expand summer funding. Dean McClain, her senior leadership team, and the TGS development staff raised more than \$21 million during the recent Duke/Forward campaign, with most of those gifts dedicated toward these purposes. The unprecedented success in fundraising has begun to close the financial gap between Duke's endowments for doctoral education and those of other leading universities. As seen in Appendix 5, Duke currently provides 12 months of funding to ~80% of doctoral students, though there are stark differences among schools. Also of note is the jump in the number of sixth-year graduate students with only 9 months of support. In order to alleviate the burden on these sixth-year students, the university has recently expanded its commitment to fund tuition for those students who do not complete their degree in five years. Despite these important recent steps, Duke continues to face abiding challenges in providing the right mix of guarantees and incentives to underpin the financing of doctoral education for all of its varied programs.

Another crucial issue identified by national inquiries on doctoral education involves provision of high-quality information to doctoral applicants, doctoral students, and faculty on: selectivity measures; demographic background of applicants and students; rates of attrition; time to degree; and career outcomes for degree recipients. Under the leadership of Dean McClain, Duke has become a national leader in the provision of such data, which is now available [online](#) through user-friendly visualizations.

We also prioritized an inventory of the wide array of extra-departmental opportunities for doctoral students at Duke, whether offered by The Graduate School, the Provost's office, other schools, or university-wide Institutes, Initiatives, and Centers, or developed by graduate students on their own. We found that Duke is collectively providing numerous avenues for supplementary training and professional development, with some avenues longstanding, and others spurred by recent investments through *Together Duke*. These include:

- a variety of skills-based boot-camps, short-courses provided by the Libraries, UICs, and the Summer Doctoral Academy;
- TGS's extensive lineup of professional development workshops, its Emerging Leaders Institute, and its highly regarded Teaching Certificate and Preparing Future Faculty program;
- Graduate Student Training Enhancement (GSTEG) grants, which support cognate skills development outside Duke;
- Duke Support for Interdisciplinary Graduate Networks (D-SIGN) grants, which fund collaborative, interdisciplinary teams focused on a research problem or pedagogical innovation;
- several interdisciplinary doctoral cohorts convened by Duke UICs to share work-in-progress and/or engage with a research project beyond dissertation research;

- Versatile Humanists at Duke, which offers supplemental mentoring, modest funding for curricular innovation and doctoral participation on collaborative research projects, and off-campus internships;
- Bass Connections research teams, including summer experiences such as Data+ and Story+;
- Duke Interdisciplinary Social Innovators, an organization established and run by and for Duke doctoral and professional students, which matches teams of Duke students with NGOs that need pro bono consulting; and
- more substantial resources in Career Services targeted to doctoral students, and in the School of Medicine's Office of Biomedical Graduate Education for biomedical PhD trainees.

A significant fraction of Duke's doctoral students benefits from one or more of these opportunities. Anecdotal evidence gleaned from focus group meetings and an assessment of the three surveys highlight the significant impact that these ongoing programs are having on Duke doctoral education. Those same inquiries identified several notable strengths of our core doctoral programs, as well as important areas that require attention.

Overall Strengths and Weaknesses

In both focus groups and surveys, faculty and students alike were quick to point to the **intellectual firepower and research productivity** of Duke's faculty and to the **quality of student cohorts** as key strengths. No serious doubts emerged on this front. Interestingly, some faculty highlighted as a strength the fact that their degree recipients continue to build **successful careers as scholar-teachers within academia**, while other faculty highlighted the increasingly wide array of careers which their degree recipients aspire to and pursue. The co-existence of these two strengths is in and of itself a positive attribute for Duke's doctoral programs. Also highlighted, particularly so by graduate students, was the **high quality of Duke's infrastructure**, including laboratories (aside from some within the natural sciences) and library resources. Both faculty and doctoral students frequently stressed that relatively **low barriers to collaboration and interdisciplinary training** represent significant comparative advantages for Duke's doctoral education, as do the varied opportunities (noted above) for educational enhancement outside of degree programs.

Despite the significant number of innovative extra-departmental opportunities available to doctoral students, we also found that **awareness of these opportunities remains notably inconsistent** among students and faculty alike. Similarly, faculty advisors and mentors vary considerably in the degree to which they encourage (or discourage) their students to take advantage of these opportunities. Patchiness extends as well to the **training of DGSs and faculty as advisors and mentors**. We heard repeatedly from faculty and students that too many faculty lack preparation for meeting the broad needs of doctoral students and have only a minimal grasp of the expectations that students and the university have of them as graduate advisors and mentors.

The committee heard particular concerns about the mental duress that some graduate students experience. While the university has resources to aid **graduate students facing mental health challenges**, students and faculty report highly uneven use of these resources, either because of lingering

stigma or lack of awareness. Regardless, many faculty stressed the imperative to take more seriously the expanding need for mental health services for graduate students.²

Finally, we heard about **structural conflicts of interest in the biomedical, natural and physical sciences**, as some faculty make abundantly clear that the highest priority of graduate students should be work on their advisor's grant-funded research.

Although, as noted above, some faculty encourage doctoral students to explore non-academic career paths, these pockets stand out as the exception, not the norm. In fact, we found that a striking characteristic of doctoral education at Duke is the perceived or real **lack of understanding and appreciation for non-academic career trajectories** within many departments and PhD programs. Graduate students see "two Dukes" with regard to this issue: at the university level, they see a willingness to embrace and support a wide array of career outcomes, while at the local level they often encounter a strong preference for academic careers and a disinclination to encourage and value other options. In many of those programs where faculty signal respect for non-academic career paths, there remains uncertainty about how best to support students in exploring those avenues. The committee found growing interest among doctoral students in considering off-campus internships that would allow them to deepen their research capacity and develop complementary skills, and at least some new efforts to meet this demand, as, for example through VH@Duke and the Pharmacology and Cancer Biology Internship Program.

This disparity between messaging and programming at the university level and the culture of local programs also characterizes efforts to **diversify the graduate student population**. As a university, Duke has articulated diversity as a core value; TGS has instituted a range of programs to increase diversity, most recently under the auspices of a \$1 million multi-year grant from the Sloan Foundation to diversify doctoral cohorts in STEM fields; and some of our programs can point to significant gains. Nonetheless, in too many individual programs, progress toward the diversification of doctoral cohorts and the development of inclusive learning and research communities has been slow.

Another abiding issue concerns funding. Although faculty and students generally lauded the level of financial support for graduate students, and although TGS has greatly expanded endowments that provide fellowships and summer funding, **some constituencies emphasized significant challenges around finances**. Within the humanities and interpretive social sciences, faculty and doctoral students emphasized that financial pressures resulting from constraints on summer support and out-year funding generate considerable anxiety. Both groups expressed a strong interest in more summer funding and stronger guarantees for 6th year funding. Significant increases in Durham's cost of living have added to the financial burden for some students, with rents standing out in this regard. Within several smaller departments, there is ongoing concern about how to sustain critical mass for doctoral cohorts.

Finally and in the view of the committee, most importantly, the committee heard a great deal about **insufficient accountability** in many programs for poor and, at times, even abusive faculty advising. Faculty and students both stressed that even if all students become aware of and have the chance to take advantage of the myriad of opportunities afforded them, and even if we alleviate funding and housing concerns, provide diverse cohorts across the board and improve mental health and wellness services, the graduate student experience will suffer if there is poor advising. And, we will have failed

² In this regard, the School of Medicine has undertaken an IRB-level study of the mental health of biomedical PhD trainees, with the goal of developing affordable, effective support systems for those doctoral students.

graduate students whenever there is abusive advising. There was a general consensus that a successful doctoral experience rests heavily on **a healthy, productive relationship between a student and the faculty supervisor**. Thus, it comes as no surprise that many voices – faculty, graduate students, and alumni – highlighted the lack of accountability for poor or abusive advising as one of the main weaknesses of doctoral education at Duke.

In summary, while the many strengths we have identified over the past year are cause to celebrate Duke's doctoral education, the weaknesses serve as a **call to action**. These shortcomings are not Duke's alone, as evidenced by the surveys and reports noted above, but they are by and large Duke's to solve. While there are a number of external constraints on graduate education, we have the capacity to address the weaknesses we have identified within the confines of our campus. We can **address the unevenness** in the Duke graduate student experience by ensuring that all students can make the most of Duke. We can **provide accountability** for graduate student advising by strengthening university partnerships. And we can narrow the gap between the university's stated values and their local articulation with a strong focus on **advancing each PhD program** across the university.

III. Moving Forward – Recommendations

Our first step in rethinking graduate education at Duke is to articulate a clear sense of its purpose. In February of 2001, the Executive Committee of the Graduate Faculty developed the following mission statement:

"The primary mission of graduate education at Duke University is to prepare the next generation of professional, scholarly, and educational leaders. In order to fulfill this mission, we seek to instill in each student an understanding of and capacity for scholarship, independent critical judgment, academic rigor, and intellectual honesty.³"

An important first step in realigning doctoral education at Duke with our stated values for a 21st century doctoral education is to explicitly state those values. As such, we recommend the following revision of the mission statement:

"The primary mission of graduate education at Duke University is to prepare the next generation of scholarly, educational, and professional leaders. In order to fulfill this mission, we seek to instill in each student a key set of values and capacities necessary for the production of knowledge in the service of society, as well as responsible membership in a community of scholars. These key attributes include: independent critical judgment, academic rigor, intellectual honesty, the ability to frame and conduct important agendas for scholarly inquiry, familiarity with collaborative work, and effective communication skills."

This suggested revision, which has been forwarded to TGS for consideration, informs the committee recommendations in this report. Importantly, this mission statement now emphasizes the molding of creative and adaptive scholars as well as the facilitation of excellent scholarly work. To achieve this

³ This mission statement appears in a February 2001 TGS document, *Best Practices: Core Expectations for Graduate Education at Duke University*.

mission in the years ahead, the committee recommends the three goals listed above - **Make the Most of Duke**, **Strengthen University Partnerships**, and **Advance the PhD** – which are fully described below.

Make the Most of Duke

As our findings indicate, Duke has already made important strides in strengthening the financial underpinnings of doctoral education and in extending extra-departmental opportunities to doctoral students. But we need to sustain our core efforts in fundraising, address some key financial challenges such as access to affordable housing, and widen opportunities for internships. The extent to which doctoral students take advantage of existing opportunities also remains uneven because of patchy awareness or skepticism/opposition expressed by faculty advisors and mentors. Accordingly, we recommend that the Provost work to:

1. Sustain and, where appropriate, extend opportunities (such as those provided through Bass Connections, D-SIGN grants, Duke Engage, and Doctoral Scholars programs in interdisciplinary Institutes and Initiatives) for **doctoral students to assume leadership roles within collaborative research teams**; and encourage individual programs to **incorporate university-wide opportunities into curricular frameworks**, where appropriate. The Provost's office should also assess the effectiveness of the new Duke Summer Doctoral Academy, and **provide appropriate resources for university-wide short-courses** that address general needs for doctoral students, such as communications skills, digital literacy (for research and teaching), organizational leadership, innovation, and approaches to collaboration.
2. Expand access to **internships** that will amplify doctoral students' research skills and capacity to translate knowledge for diverse audiences (either through new funding sources or the possibility of incorporating internships as a part of summer research awards).
3. Extend efforts to **amplify diversity and inclusion** throughout our doctoral programs. The university must pay close attention to the outcomes of TGS's Sloan Foundation grant and embed best practices for the recruitment, retention, and success of doctoral students from underrepresented groups.
4. Create a **corps of supplemental mentors**, akin to the Director of Academic Engagement for Doctoral Students in the Humanities, as resources for doctoral students and faculty across the university. We envisage adding at least one such individual for the social sciences and one for the natural and applied sciences. Working closely with leaders and staff at TGS, these individuals would: inform doctoral students about relevant opportunities outside their degree programs; serve as a sounding board for students as they weigh their options across Duke; oversee any internship or community engagement programs in their domains; provide assistance as students think through/pursue academic and non-academic career trajectories; offer guidance/training to DGSs, DGSAs, and faculty advisors as requested; form their own community of practice; and partner with key figures in Career Services to support advanced doctoral students as they begin to engage with job markets of their choice.⁴

⁴ Insofar as the supplemental mentors help to reduce attrition and time to degree, they could free up resources for additional fellowships. At the close of the funding period for *Together Duke*, we would recommend a careful evaluation of the impact of supplemental mentors for doctoral students and an assessment as to whether departments and schools should absorb their functions and cost.

5. As the cost of living continues to rise in Durham, ensure that all students have **access to affordable housing**, so they can focus on their coursework, research, and professional development.

6. Insofar as doctoral students continue to **confront mental health challenges**, ensure that we provide access to appropriate, high-quality care and furnish all doctoral students with information about mental health and wellness resources at Duke. Attention to this issue is part of The Graduate School's 2016-2026 Strategic Plan, which appropriately prioritizes the enhancement of services and resources that support students' wellbeing. That plan outlines a set of strategies to improve students' access to wellness services and a set of key performance indicators to monitor progress. We call on the Executive Vice President to work in coordination with TGS and all schools to ensure that university resources devoted to student wellbeing, such as Counseling and Psychological Services (CAPS), DukeReach, the Women's Center, and the Student Wellness Center, can meet current and anticipated student demand, and that all doctoral students are made aware of these resources.

Resources:

The Provost's office should:

- Draw on funds from *Together Duke* to expand the opportunities of doctoral students to obtain **internship experiences, gain access to relevant short-courses, and take on leadership roles within collaborative research teams**. The Provost's office should also explore possibilities for augmenting philanthropic and foundation support to make these extensions financially sustainable.
- Encourage the President and Executive Vice President to explore the **advisability of expanding the availability of affordable on-campus housing for doctoral students**.
- Encourage the President and Executive Vice President to assess the capacity of Counseling & Psychological Services (CAPS) to **meet the mental health/wellness needs of our doctoral students**, and address any identified shortfalls.

The Graduate School should:

- Continue its crucial focus on **expanding the base of philanthropic support** for fellowships and summer funding so our doctoral students can take full advantage of the opportunities within and beyond their degree programs.

Units across the university should:

- Look to extend opportunities to integrate doctoral students into collaborative research projects and to connect them to internship experiences that will amplify their research capacities and communications skills.

Doctoral students should:

- Recognize their own responsibility for surveying the Duke landscape beyond their departments/schools.

- Take full advantage of curricular and professional development opportunities across campus.

Strengthen University Partnerships

One central challenge the RIDE committee has identified is that the complex gears of the university do not mesh as well as they might with regard to the many important issues surrounding doctoral education. We see great opportunities for better aligning those institutional gears, especially around the key issue of accountability for the quality of advising and mentoring and the diffusion of best practices within and across doctoral programs. We recommend that the Provost:

1. In conjunction with the President, consistently articulate the centrality of excellent doctoral training to Duke's core missions and prioritize the provision of appropriate financial support and incentives for doctoral students, with a key goal of moving all Duke doctoral students toward 12-month funding.
 2. Ask TGS to update the document, ***Best Practices: Core Expectations for Graduate Education at Duke***, compiled by TGS in 2001, so that the expectations for faculty members, graduate students, graduate programs and TGS are consistent with the revised mission statement and other recommendations in this report. As TGS revises this crucial statement of our collective approach to doctoral training, we should add a set of expectations for academic deans in the administration of graduate programs within their schools and in the supervision of graduate faculty. Schools should emphasize that membership in the community of doctoral faculty, and in the community of doctoral students, is a privilege that, for all groups, entail responsibilities. Schools should similarly increase reliance on these **statements of expectations as communal touchstones**, as at new faculty orientation, retreats for newly tenured faculty, and graduate student orientation.
 3. Ask school deans, to whom departmental chairs and graduate faculty report, to focus on **heightened accountability for doctoral advising**. Specifically, we recommend that on a periodic basis, all department chairs and deans use the core expectations for graduate faculty to assess whether individual faculty members are meeting those expectations. These assessments should be conducted with the recognition that **advising graduate students entails fundamental responsibilities for those faculty who gain admission to the graduate faculty**, and with the presumption that all of our doctoral students should receive high-quality advising and mentoring.
- Programs should not tolerate abusive advising** and should move swiftly to address instances in which there is clear evidence of such behavior, up to and including revocation of membership in the graduate faculty. If faculty members have exhibited less egregious violations of our standards for advising, but are consistently **not meeting the expectations for advisors**, the relevant dean, in consultation with the departmental chair and/or program DGS, **should advise those faculty members on steps needed to meet their responsibilities as advisors**. A pattern of poor advising should also lead to the revocation of graduate faculty membership.
4. Deans and department chairs should **establish communication channels so graduate students and faculty can readily report inappropriate behavior** that impedes the progress of a graduate student and/or diminishes their membership in the academic community. Duke should consider expanding the number of student ombudspersons and ensure that doctoral students are aware of this resource.
 5. Call on TGS and the schools/departments directly responsible for doctoral training to deepen their institutional partnership. The committee suggests that TGS tap appropriate clusters of school deans to

help structure orientation for DGSs and DGSAs whose departments share funding structures and modes of training, and to convene those groups of DGSs and DGSAs for occasional meetings during the academic year to problem-solve and share best practices. TGS should also encourage doctoral programs to **amplify the role of DGSAs**, with improved training and expanded awareness of extra-departmental opportunities/services. In addition to serving as **conduits of information for DGSs**, the supplemental doctoral advisors that we call for above should also serve **as conveners of DGSAs in their domains**, assisting with training and keeping them abreast of programs/opportunities beyond individual departments.

5. Call on TGS, the individual schools, and the Career Center to coordinate professional development activities for doctoral students, with a focus on optimizing the impact of workshops and deepening the support network available to those students.

6. Insofar as funding for doctoral education will always face budgetary constraints, expect programs to **make explicit trade-offs** between program size and the average degree of support for individual students, as through provision of summer funding or guaranteed sixth-year funding. Programs might also consider the trade-off between program size and deployment of resources to enrich the graduate student experience and/or create a more diverse cohort. These trade-offs should be discussed at the programmatic level, in consultation with the appropriate dean.

Resources:

The Provost should:

- Encourage schools with doctoral programs to make **support for doctoral education a higher priority in their fundraising**, understanding that priorities will vary across schools. Some will likely focus on increased financial support for their doctoral students, while others might choose to enhance the undergraduate experience through mentored research by doctoral students, expand opportunities for exposure to diverse career trajectories, and/or increase their investment in the recruitment of diverse doctoral cohorts and the development of more inclusive intellectual communities.
- Deploy modest funds from *Together Duke* to **foster improved training** for and **community-building among** DGSs and DGSAs, as well as for **an expansion of TGS's mentoring training** for graduate faculty, in partnership with the Office of the Vice Provost for Faculty Advancement.

Advance PhD Programs

For all the contributions that The Graduate School, the Provost's office, and Duke's other schools can make to excellence in doctoral training, vitality within individual degree programs is critical to our overall success. We need to make sure that the graduate faculty within all doctoral programs take responsibility for updating curricula, recruiting diverse student cohorts, providing consistently excellent advising and mentoring, and encouraging students to leverage the resources available at and outside of Duke. While the first two goals in this report, and their attendant recommendations, are targeted toward university-wide issues, achieving this third goal will require an understanding and appreciation for the significant heterogeneity of doctoral education across campus. Here, the ideas of graduate

faculty focused on the advancement of their specific program will find full expression. Toward that end, we recommend that the Provost:

1. Ask every doctoral program to reexamine its curriculum and other activities in light of the recommendations for doctoral education in this report, recent guidance from relevant scholarly societies, and the experiences of its doctoral students during and after their training at Duke. This reexamination should be completed within the next four academic years. We further propose that the Provost:

- Create a RIDE Implementation Committee to develop guidelines for these “deep dives” with the understanding that programs should: include doctoral students in the effort; take a close look at their time to degree, rate of attrition, and career trajectories of graduates; examine curricular developments in peer programs and any recent reports on doctoral education in their discipline; rearticulate the core mission of the program; articulate core expectations for faculty and doctoral students; assess the curriculum in light of that mission; and identify metrics for success;
- Expect all reports from individual programs by Spring 2023 and make funding available to those programs that undertake their deep dive within the first two years; and
- Provide competitive seed grants to programs whose deep dives identify clear needs for investments to reconfigure curricula, improve advising and mentoring, and/or develop a more inclusive intellectual environment.

2. Encourage individual programs and interdisciplinary units to **coordinate cross-cutting course offerings** (such as data analytics, digital research techniques, and archival research skills); where appropriate, expand the number of **interdisciplinary doctoral seminars** that integrate students from across disciplinary and school boundaries; and establish processes to eliminate significant departmental/school financial barriers for students wanting to take course work outside their own programs.

3. Ask programs to require that students submit an **annual intellectual development plan (IDP)** along with their annual report, perhaps from admission to candidacy onward, and then expect faculty advisors and DGSs to discuss these plans with students at an annual meeting. Programs should consider asking a faculty mentor other than the student's primary advisor/supervisor to conduct this annual discussion of the IDP.

4. Encourage each doctoral program to devise **advising and mentoring networks for doctoral students** that minimize the vulnerabilities associated with reliance on a single faculty supervisor and/or mentor. Encourage students to create **peer mentoring networks** (such as the successful program initiated by the School of Nursing) that include attention to questions of inclusivity, and to seek mentors outside of their committee, and outside of Duke. Further encourage awareness of the ongoing mentoring contributions of highly trained staff members at Duke (in the Duke Libraries, school-based centers, UICs, and School of Medicine service cores).

Encourage programs to **maintain connections with all of their doctoral alumni**, including those who have built careers outside academia, and highlight both academic and non-academic career choices among alumni.

5. Charge the RIDE Implementation Committee with revising the template for **external reviews of doctoral programs**. In addition to evaluating achievement of its particular core missions, programs should be required to assess the quality of faculty advising and mentoring; efforts to foster diverse applicant pools and doctoral cohorts; efforts to form inclusive intellectual communities; attention to communication skills; the degree to which fellowship-related service assignments, such as TA or RA duties, provide meaningful professional development to doctoral students (recent reforms by the Sanford School of Public Policy provide a model here); and doctoral students' access to opportunities outside their program, such as TGS's teaching certificate and the Preparing Future Faculty program, the Summer Doctoral Academy, and interdisciplinary networks and research teams. The external review team should be charged to assess these facets of the program.

TGS should:

1. Build additional features into the resources provided to graduate faculty, including workshops for faculty members to identify their advising and communication style from which they can construct a profile for prospective/current students.
2. Require that all programs provide explicit incentives for their doctoral students to seek external fellowships. Some departments allow students who receive such fellowships to "bank" at least a semester's worth of Duke funding; others provide a cash bonus; still others offer no direct benefit at all. Although the committee sees a strong case for allowing flexibility in the type of incentives provided, we recommend that TGS devise a menu of options, drawing in part on current departmental practices, from which **all programs would have to choose**.

School deans should:

1. Ensure that doctoral advisors and advisees in doctoral programs under their purview explicitly address expectations about communication, frequency of meetings, provision of feedback on work, respect for deadlines, and other key dimensions of the advising relationship; and further ensure that departments and programs emulate the Biology Department by explicitly specifying norms for advising relationships.
2. Ask faculty whose tenure home is in a department or school with a doctoral program to include an advising and mentoring statement in tenure and promotion packages. Programs should develop a confidential mechanism to solicit input from a faculty candidate's current and former students/postdocs for inclusion in promotion dossiers.
3. Expect that doctoral programs meet once a year to review the progress of all program PhD students, providing an opportunity to identify problems (whether with students, mentors, or mentoring mismatches) and create shared accountability among the program's faculty.
4. Maintain/create appropriate incentives for faculty members to seek large grants that furnish support for doctoral students and provide leadership over expansive training programs such as NIH T-32 grants or National Science Foundation Research Traineeship (NRT) grants.

Doctoral students within Ph.D. programs should:

1. Participate actively in the deep dive into curricular requirements, departmental advising and mentoring culture, and other facets of the program;

2. Develop structures for peer mentoring networks; and
3. Develop an annual intellectual development plan that reflects on their intellectual trajectories and career ambitions, and sets goals for the year ahead.

Resources:

The Provost should deploy Together Duke funds to:

- Support the **work of doctoral programs in their deep dives**. We propose the granting of modest, flexible funds to departments that undertake self-studies during the first two years after the completion of this report, with the goal of facilitating a serious inquiry. These funds could be used, for example, to provide course release for a lead faculty member, to fund work by a doctoral student RA, and/or to bring in an external expert as an interlocutor once departments are moving toward finalizing their report and recommendations. The Provost's office should further pursue foundation grants to support these program-level reexaminations of curricula and other elements of doctoral training.
- Establish competitive grants that allow programs to **address key shortcomings** identified in the deep dive.
- Reserve funds for **broader university-wide initiatives** suggested by the deep dives as a whole.
- Create funds **to support coordination of cross-cutting doctoral offerings**.
- Provide modest funds to support **peer mentoring networks** and a **Faculty & Lunch (FLUNCH)** option for doctoral students wishing to meet faculty outside their program.

The Graduate School should:

- Extend its pivotal efforts, as reflected in its Sloan Foundation grant, to **accelerate the diversification of doctoral cohorts in STEM fields** and other programs characterized by a lack of demographic diversity.

IV. Overcoming Obstacles to Change

This past July, Alan Leshner, Chief Executive Officer, Emeritus, of the American Association for the Advancement of Science (AAAS), visited Duke to give a talk on the recent National Academies report, *Reshaping Graduate STEM Education for the 21st Century*. (This report resulted from a multi-year study, which Leshner chaired.) Noting the accumulating number of such inquiries over the past two decades, Leshner commented that academic leaders charged with thinking through how to improve doctoral training have become “sick of discussing this issue,” since they tended to agree about goals, as well as the glacial pace of achieving them. The key question, he insisted, has become “what do we do?”

To answer Leshner's explicit call to action, our committee has thought hard about the longstanding impediments to reform mentioned at the start of this report, and has formulated specific steps to

surmount those impediments. Through careful deployment of strategic planning funds, and by seeking additional support from foundations and philanthropic resources, we believe that the goals we have articulated here will:

- *Provide doctoral programs with the resources to undertake necessary self-studies and reconfiguration of curricula, and to improve training of DGSs, DGSAs, and doctoral faculty advisers.* Importantly, the call for this examination to take place within the next four years is crucial for overcoming the inertia that often characterizes the response to calls for graduate education reform; that work must be undertaken by faculty in partnership with a program's doctoral students.
- *Clarify our university-wide and program specific missions and deepen the partnership between our schools with doctoral programs and TGS.* As such, we can lessen the structural divide between authority and responsibility and better align faculty incentives with student-centered education and training. Furthermore, we believe the steps outlined here will lead to an improved university-wide understanding about the imperative of preparing our doctoral students for success in both academic and non-academic careers, as well as the complementarity of those approaches.
- *Allay faculty concerns that curricular changes or other adjustments to doctoral training might disadvantage students in academic job markets.* The overall goal of the steps outlined here is to improve doctoral education across the board. All students, regardless of the career path they choose, will be advantaged by a stronger emphasis on communication and collaborative work, by improved advising and mentoring, and especially by a faculty reexamination of what defines cutting edge scholarship in the 21st century.
- *Alleviate the restricted access to doctoral education enhancements for students in the biomedical, natural and physical sciences.* We acknowledge that as long as graduate education is linked to grant-funded research in many quarters of the university, some of the co-curricular opportunities described in this report will be unevenly accessed. However, we believe Duke can meaningfully lower the barrier imposed by faculty expectations that students devote the great majority of their time to grant-funded research. Though a student might not have the option for a semester-long internship, he or she can take a short course, attend a workshop, or take advantage of a D-SIGN grant to cultivate an interdisciplinary aspect of their research. In short, the menu of possibilities should be sufficient to allow every student an opportunity to enhance their Duke PhD education. We also call on university leaders to work with funding agencies to build more flexibility for doctoral students into research grants.

There are signs, moreover, that funding agencies such as the National Institutes of Health (NIH) are increasingly recognizing their role in shaping the quality of doctoral training. The NIH T32 training grants, for example, now require that biomedical doctoral programs have clear plans to: improve diversity and inclusion; widen advising and mentoring networks; provide pedagogical experience; and expose doctoral students to interdisciplinary research opportunities and diverse career trajectories.

- *Raise awareness of the need for and value of effective advising and mentoring of PhD students.* We acknowledge that across all fields, effective doctoral advising and mentoring rarely receives much weight in the current tenure and promotion decisions, though we see some of our recommendations as a significant nod in that direction. Specifically, a periodic evaluation of a

faculty member's performance as an advisor and/or mentor signals the value the university places on this contribution, as does the introduction of a mentoring statement in promotion dossiers, the invitation for doctoral students to submit letters for those same dossiers, and the emphasis on the revocability of membership in the graduate faculty. We believe that a commitment to effective advising and mentoring aligns closely with commitments to excellence in scholarship and education and that hiring and promotion decisions should take account of this critical ingredient in a faculty member's profile. Ideally, a faculty member should show potential for quality advising/mentoring at hiring, demonstrate effectiveness in advising/mentoring at tenure, and excel in advising/mentoring at the full professor stage. Just as we look for signs of a clear trajectory in research, so we should expect to see a clear trajectory in effective advising and mentoring.

As Duke moves to reimagine doctoral education, whether through deployment of resources at the university level, the deepening of key institutional partnerships, or revisions in specific programs, the committee wishes to underscore the crucial importance of maintaining an experimental ethos. We understand that innovation requires testing, assessment, flexibility, and, importantly, an open mindset. Toward that end, our final recommendation calls for the Provost to develop an implementation plan that details the priority of the recommendations herein, specifies an implementation timetable, identifies resources available for individual goals, and plans for the assessment of new endeavors. We lay out suggested parameters for that implementation plan in Section V below.

Duke is well positioned to answer Alan Leshner's call to arms. By heeding his plea to act, we can burnish our reputation as a leader in doctoral education. More importantly, we believe that concerted effort to realize the goals articulated in this report will significantly enhance Duke's capacity to attract the best and brightest graduate students across the globe and to graduate outstanding PhDs who have the creativity, knowledge, and skills to meet the scholarly needs of this coming century.

V. A Final Reflection on Resources for Implementation

This report lays out an important set of goals to ensure that Duke provides world-class doctoral education in tune with emerging intellectual trends and societal needs. The realization of these goals will require time, effort, and financial resources. Excellent doctoral education depends on collective focus across the university, and so we call on the Duke community to implement the recommendations in this report through a series of university partnerships.

One overriding objective concerns the provision of full-year support for all of Duke doctoral students. As we note above, Duke does not currently provide 12 months of support to all doctoral students for the duration of their studies, unlike several peer institutions. Moving toward the provision of full-time funding for all students will require attention on several fronts, in no small measure because the nature of doctoral funding and the degree to which students receive 12 months of support varies across campus. Success in this crucial endeavor will depend on a combined effort: elevation of doctoral education in Duke's articulation of its mission and promise; continuation of fundraising efforts by TGS; increased attention to the needs presented by doctoral education within schools, as Deans fundraise and seek other revenues to contribute to doctoral budgets; the provision of appropriate incentives for students to seek external funding themselves, and for faculty in relevant programs to continue pursuing

grants that provide funding for doctoral students; and, importantly, clear-eyed trade-offs within individual programs.⁵

Some recommendations in this report do not entail explicit financial commitments since they involve faculty time and effort far more than monetary resources. We understand, however, that time and effort are precious and scarce resources across the university. In particular, this report calls on graduate faculty to engage in a sustained reexamination of doctoral education at the programmatic level. We know that reconsiderations of mission and curricula represent major requests, given the suite of other faculty obligations; but we make this ask in the expectation that work invested over the next couple of years will bring rich rewards down the road. Elevating Duke's doctoral programs has the potential to attract better graduate students and faculty as well as outside resources.

We recommend that the Provost invest at least \$8M in support of the RIDE goals over the next five years. These central dollars should be considered a down payment to jump start the goals outlined in this report. The table on the following pages provides a suggested guide to these initial investments, broken down according to the report's major goals. The table furnishes a flexible roadmap for allocation decisions that the Provost will make in collaboration with Deans, Directors, and faculty governance groups as they implement this elaboration of one key component of our strategic plan, *Together Duke*.

We further recommend that implementation plans for this report should include identification of the individuals primarily responsible for a particular goal; the process for requesting/allocating funds; measures of expected outcomes; and funding criteria, such as programmatic impact, potential to attract internal or external matching funds, and long-term sustainability.

Finally, we expect that we can build upon this initial investment with funding from philanthropy, sponsored research funds, corporate partnerships, and co-investment by schools. As the programs conduct and complete their deep dives, we expect to identify additional funding opportunities that will likely prompt adjustments in resource allocation.

⁵ In discussions of the draft version of this report, we heard concerns about a growing preference of many science faculty to structure grant budgets around the hiring of postdocs rather than the provision of doctoral student slots.

Table 1: Recommendations, Responsibility for Implementation, Anticipated Resources, and Timeline

| GOAL ONE: Make the Most of Duke | | | |
|--|--|--|---|
| Recommendation | Responsibility | Resources | Timeline |
| 1. Continue Summer Doctoral Academy; sustain/extend key extra-departmental opportunities for doctoral students | Provost's office; TGS; individual schools; UICs; doctoral students | Maintain/extend current investments in Teaching Certificate, D-SIGN, GSTEG, Bass Connections, Doctoral Scholars Programs, Summer Doctoral Academy; inclusion of doctoral students within Provost's collaboratories: +/- \$500k /year | Ongoing |
| 2. Expand access to internships | Provost's office; individual schools; TGS | \$100-\$250K/year | Begin FY20; assess impact after 3 years |
| 3. Create a corps of supplemental mentors | Provost's office; individual schools; TGS | \$375K/year | Begin FY20; assess impact after 3 years |
| 4. Ensure access to affordable housing | Executive Vice President | Requires study/analysis | |
| 5. Access to high-quality mental health care | Executive Vice President | Requires study/analysis | |

| GOAL TWO: Strengthen University Partnerships | | | |
|--|---|---|-------------------------------|
| Recommendation | Responsibility | Resources | Timeline |
| 1. Articulate centrality of excellent doctoral training to Duke's core missions; prioritize provision of appropriate financial support for doctoral students | President and Provost | Time/Effort | Begin Spring 2019 and ongoing |
| 2. Update <i>Best Practices: Core Expectations for Graduate Education at Duke</i> | TGS | Time/Effort by TGS Committee | Spring 2019 |
| 3. Heightened Accountability around Doctoral Education within schools | School Deans | Time/Effort by school Deans, Department & Program Chairs | Begin Spring 2019 and ongoing |
| 4. Closer coordination between TGS and schools/departments: DGS and DGSA training | TGS, school Deans, department chairs, supplemental mentors | \$50-100K/year to support professional development of DGSs, DGSAs, and supplemental mentors | Begin Spring 2019 and ongoing |
| 5. Closer coordination between TGS, schools/departments, and Career Center | TGS, school Deans, departments, supplemental mentors, and Career Center staff | Time/Effort of key Individuals | Begin Spring 2019 and ongoing |

| 6. Require explicit trade-offs between program size and support for individual students | School Deans | Increased focus on expanding revenues to support doctoral education | Begin Spring 2019 and ongoing |
|---|--|---|--|
| GOAL Three: Advance PhD Programs | | | |
| Recommendation | Responsibility | Resources | Timeline |
| 1. Require deep dives by all doctoral programs | School Deans; department Chairs; RIDE Implementation Committee; faculty and students | \$300-500K to support self-evaluations; \$1M total to support seed grants for investments in specific programs and cross-university investments suggested by reports as a whole | RIDE Implementation Committee convened Spring 2019; department deep dives in FY20 & 21 eligible for funding; additional investments thereafter |
| 2. Coordination of cross-cutting seminars; more interdisciplinary doctoral seminars | School Deans; departments; UICs | \$50-100K total for course development | Fall 2019 and ongoing |
| 3. Require annual intellectual development plan (IDP) and annual discussion with someone other than primary advisor | Schools, departments/programs; faculty and students | Time/Effort | Fall 2019 and ongoing |
| 4. Intensify focus on diversity & inclusion; support mentoring teams and peer mentoring networks; strengthen alumni | Departments/programs; faculty and students | \$50-100K/year to support diversity & inclusion efforts; creation of peer mentoring groups; and | Fall 2019 and ongoing |

| | | | |
|---|---|--|--------------------------|
| networks at program level | | alumni networks at the program level | |
| 5. Revise template for departmental external reviews | RIDE Implementation Committee | Time/Effort | Spring 2019 to Fall 2019 |
| 6. Increase attention to doctoral training in tenure/promotion dossiers | School Deans; RIDE Implementation Committee | Time/Effort | 2019-20 and ongoing |
| 7. Require programs to provide incentives for students to seek external funding | TGS | Time/Effort | By Fall 2019 |
| | | | |
| Estimated total funds from <i>Together Duke</i> over a five-year period | | Approximately \$8.225M (~\$1.6M in one-time costs; remainder is the sum of annual costs over five years) | |

Reimaging Doctoral Education Committee Report

Appendix 1: Reimaging Doctoral Education Committee Members

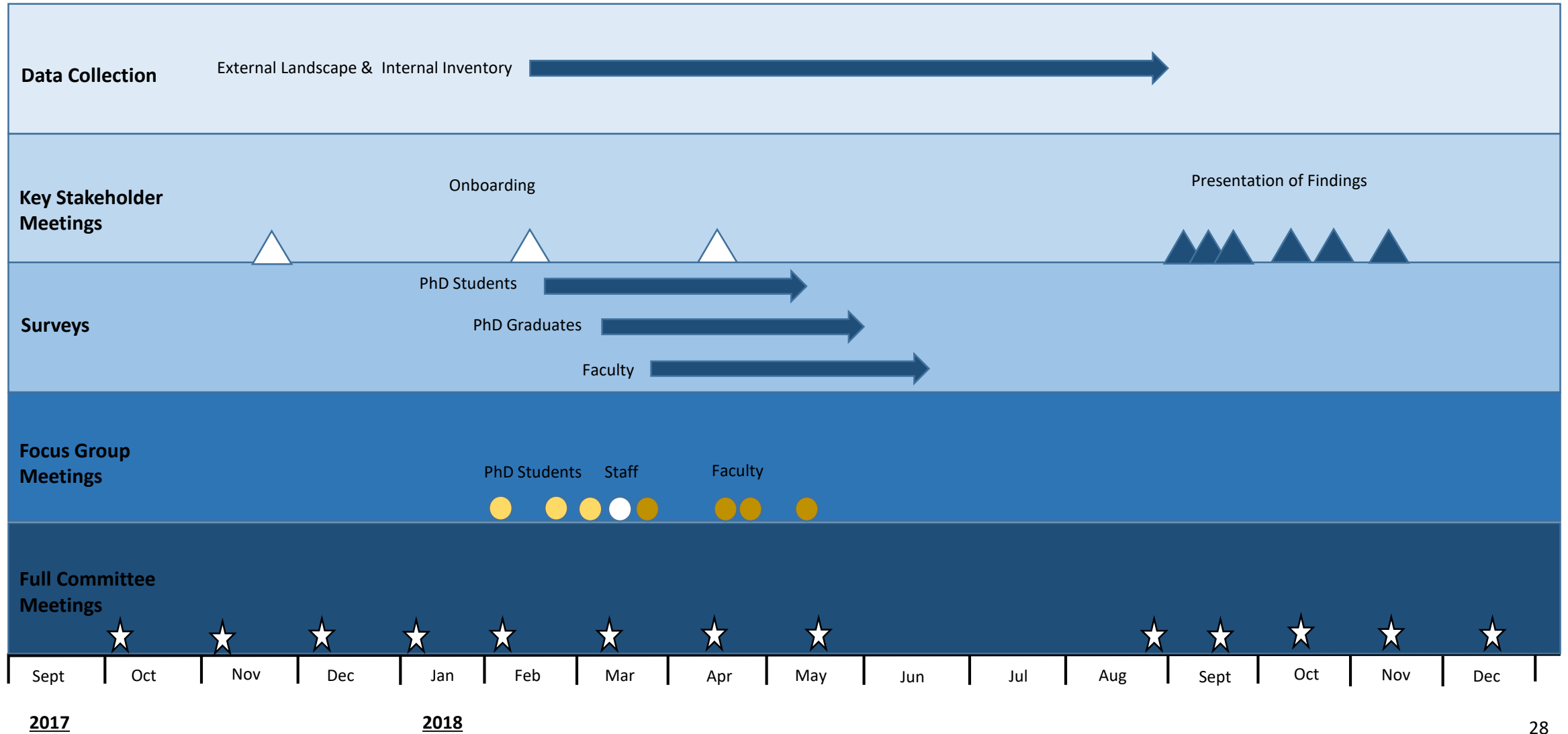
| Name | School |
|------------------------------|---|
| Ed Balleisen, PhD (Co-Chair) | Vice Provost. Interdisciplinary Studies (<i>ex officio</i>) |
| Susan Lozier, PhD (Co-Chair) | NSOE |
| Emily Bernhardt, PhD | A&S-NS (Biology) |
| Debra Brandon, PhD | SON |
| Lou Brown, PhD | Forum for Scholars & Publics |
| Kathy Franz, PhD | A&S-NS (Chemistry) |
| William Goldsmith | Graduate Student (History) |
| Sara Greene, JD | Law |
| Kerry Haynie, PhD | A&S-SS (Political Science) |
| Christine Hendren, PhD | Pratt, CEINT, Executive Director |
| Deborah Jakubs, PhD | Vice Provost Libraries |
| Daniel Lew, PhD | SOM |
| Lauren Lowman* | Graduate Student (Pratt) |
| Randy Maddox*, PhD | Divinity |
| Alex Pfaff, PhD | Sanford |
| Renee Michelle Ragin | Graduate Student (Literature) |
| Ashleigh Rosette, PhD | Fuqua |
| Jonnathan Singh Alvarado | Graduate Student (Neurobiology) |
| Adam Wax, PhD | Pratt |
| Gennifer Weisenfeld, PhD | A&S-Art (Dean of Humanities) |
| John Klingensmith, PhD | Graduate School (<i>ex officio</i>) |
| Christopher Nicchitta, PhD | SOM (<i>ex officio</i>) |
| Carolyn Mackman | Staff |
| Dustin Benac* | Office of the Provost Fellow 2017-18 |
| Carolyn Naughton | Office of the Provost Intern 2017-18 |

* Served through May of 2018

Reimagining Doctoral Education Sub-Committee Members

| <u>Focus Groups & Surveys:</u> | <u>School</u> |
|--|---|
| Susan Lozier, PhD (Chair) | NSOE |
| Sara Greene | Law |
| Deborah Jakubs, PhD | Vice Provost Libraries |
| Debra Brandon, PhD | SON |
| Gennifer Weisenfeld, PhD | A&S-Art (Dean of Humanities) |
| Christopher Nicchitta, PhD | SOM (<i>ex officio</i>) |
| Lou Brown PhD | Forum for Scholars & Publics |
| <u>Quantitative Data</u> | |
| John Klingensmith, PhD (Chair) | Graduate School |
| Ashleigh Shelby Rosette, PhD | Fuqua |
| Renee Michelle Ragin | Graduate Student (Literature) |
| Alex Pfaff | Sanford (DGS) |
| David Jamieson-Drake, PhD | Asst Vice Provost & Director Institutional Research |
| <u>External Landscape</u> | |
| Ed Balleisen, PhD (Chair) | Vice Prov. Int. Studies (<i>ex officio</i>) |
| Kerry Haynie, PhD | A&S-SS (Political Science) |
| Jonnathan Singh Alvarado | Graduate Student (Neurobiology) |
| Will Goldsmith | Graduate Student (History) |
| Emily Bernhardt, PhD | NSOE |
| Kathy Franz, PhD (Christiana Conti Gooden) | A&S-NS (Chemistry) |

Appendix 2: Reimagining Doctoral Education Timeline 2017 -18



Reimagining Doctoral Education Committee Report

Appendix 3: Summary of Selected Reports on Reforming Doctoral Education

| | Report & Agency | Key Goals | Obstacles to Change | Recommendations |
|--------------------|--|---|--|--|
| Holistic Overviews | Reforming Doctoral Education, 1990-2015, Recent Initiatives & Future Prospects (The Mellon Foundation, 2016) | <ul style="list-style-type: none"> • excellent academic training • > attention to professional develop. & cognate training • reduced time to degree • > stud-centered approach • Alignment of curricula & career needs of graduates • > collaborative sharing of information/assessment among reform initiatives | <ul style="list-style-type: none"> • among key stakeholders, lack of assigned/accepted responsibility • insufficient communication & collaboration among depts., between programs & univ. leadership • decentralized nature of doctoral educ. => veto points that resist/slow change | <p><u>Mentoring:</u> Creation of advising teams; attention to academic & non-academic options</p> <p><u>Curricular Innovation:</u> Attention to pedagogical training; > exposure to div. career trajectories; Resources to help programs implement widely-accepted reform ideas;</p> <p><u>Career Development:</u> training for work w/in & beyond academia; internships</p> <p><u>Diversity, Inclusion & Wellness:</u> > attn. to recruitment strategies; > investment in advising/instit. support for URM students</p> <p><u>Financial Support:</u> decouple funding from RA-ships; funding for internships, & interdisciplinary research; foundation & agency grant programs to support student-centered reforms</p> <p><u>University-wide Endeavors:</u> > mechanisms for coordinating b/t programs & university as whole; Adequate resources for reforms; Developing clear criteria for evaluation of reforms</p> |
| | | | | <p><u>Mentoring:</u> embrace team approach</p> |

| | | | | |
|------------|---|--|--|--|
| | The Formation of Scholars (Carnegie Foundation for the Advancement of Teaching, 2007) | <ul style="list-style-type: none"> • train stewards of the scholarly enterprise • > exposure to collaboration • > integrative learning, including across disciplines • > attn. to building intellectual community • > diversity in student cohorts | <ul style="list-style-type: none"> • lack of focus on holistic formation of scholars • attachment to apprenticeship model • collective action problems w/in universities • institutional inertia • insufficient coordination of reforms | <p><u>Curricular Innovation:</u></p> <p>Explicit articulation of program purpose; Tailoring curriculum to that purpose; > openness to experimentation; Focus on intellectual community</p> <p><u>Career Development:</u></p> <p>Program awareness of grad career paths; Feeding of those trajectories into curricular choices</p> <p><u>Diversity, Inclusion & Wellness:</u></p> <p>> diversity and inclusion crucial for vibrant intellectual community</p> <p><u>Financial Support:</u></p> <p>targeted funding to support program innovation;</p> <p><u>University-wide:</u></p> <p>Coordination of information sharing & assessment; Imperative of ensuring student engagement in reform</p> |
| Humanities | American Historical Association Career Diversity Initiative, 2018. | <ul style="list-style-type: none"> • Ensure capacity to contribute to new historical knowledge • better prepare students for diverse careers • easier connections to alumni outside academia • articulate key skills (communication; collaboration; digital literacy; intellectual | <ul style="list-style-type: none"> • Attachment to Apprenticeship Model • Lack of faculty experience with collaboration or digital research • Faculty uncertainty about mentoring for non-academic careers | <p><u>Mentoring:</u></p> <p>resources for faculty; departmental clarity about expectations team approach</p> <p><u>Curricular Innovation:</u></p> <p>courses including collaborative assignments & diverse forms of communicating knowledge; exposure to quantitative analysis, digital projects;</p> <p><u>Career Development:</u></p> <p>mechanisms for internships;</p> |

| | | | | |
|---|---|--|---|--|
| | | self-confidence; quant. literacy) | | opportunities to communicate thru varied media & to varied audiences |
| Educating Scholars: Doctoral Education in the Humanities (Mellon Foundation, 2010) | <ul style="list-style-type: none"> • Reduce attrition • Reduce time to degree • Improve faculty mentoring • Decrease student isolation/alienation | <ul style="list-style-type: none"> • Dept./faculty conservatism • Lack of clarity about program objectives & expectations • Insufficient evaluation of reform outcomes | <p><u>Mentoring:</u></p> <p>Requirement of regular advising meetings; Explicit articulation of expectations for yearly progress @ dissertation</p> <p><u>Curricular Innovation:</u></p> <p>More supplementary workshops/ colloquia on research methods, dissertation work-in-progress</p> <p><u>Career Development:</u></p> <p>> prep. for teaching (w/out > time to deg.)</p> <p><u>Financial Support:</u></p> <p>>targeted funding (esp. sum. funding) to encourage progress and completion; reduction of teaching obligations</p> | |
| Report of the Modern Language Association (MLA) Task Force on Doctoral Study (2014) | <ul style="list-style-type: none"> • maintaining academic excellence • preserving accessibility • emphasizing student-centered training • broadening career paths | <ul style="list-style-type: none"> • constrained economic resources • entrenched faculty narratives re: “success” (tenure track job) & “failure” (anything else) • de-emphasis on teaching at R1 institutions | <p><u>Mentoring:</u></p> <p>Requirement of clear benchmarks for progress</p> <p><u>Curricular Innovation:</u></p> <p>Exposure to interdisciplinary & collaborative research; experience with digital humanities for research/teaching; experiment with dissertation formats</p> <p><u>Career Development:</u></p> | |

| | | | | |
|-------------------------------------|---|--|---|---|
| | | | | <p>Validate wide range of career outcomes; > teaching prep; > experience in engaging broader publics</p> <p><u>Diversity, Inclusion & Wellness:</u></p> <p>Provision of resources to allow smaller departments to attract URM students</p> |
| Science, Engineering, & Mathematics | Graduate STEM Education for the 21st Century (National Academies, 2018) | <ul style="list-style-type: none"> maintain excellence of US STEM doctoral training student-centered doctoral training articulate core aims for PhD ed.: (1) sci. & tech. literacy sufficient to conduct high level research; (2) cultivation of collaboration, leadership, communication skills; 3) capacity to engage with social implications of science recognize systemic mechanisms to align PhD ed. w/ these aims | <ul style="list-style-type: none"> faculty prioritization of own research agendas faculty disincentives to student-centered mentoring insufficient data about career outcomes entrenched faculty norms about “success” and “failure” lack of resources | <p><u>Mentoring:</u></p> <p>> mentor training; => culture of multiple mentors; > attn. to effective teaching/mentoring in APT consideration</p> <p><u>Curricular Innovation:</u></p> <p>student exposure to: trans-disciplinary research/collaboration, communicating to diverse audiences, & leadership/management -- all thru team-based projects; periodic programmatic deep dives to align curriculum w/ purpose/objectives</p> <p><u>Career Development:</u></p> <p>provision of accurate data re career outcomes; > opportunities for career exploration in & outside academia; > access to approp. internships; req. of student IDPs</p> <p><u>Diversity, Inclusion & Wellness:</u></p> <p>> focus on diversity in admissions and inclusiveness in educational environment; > mental health support;</p> <p><u>Financial Support:</u></p> <p>funding agencies req. research grantees to have policies consistent w report;</p> |

| | | | | |
|-----------------|--|---|---|---|
| | | | | funding agencies create grants to evaluate reform efforts |
| | Strategic Framework for Investment in Graduate Education (National Science Foundation, 2016) | <ul style="list-style-type: none"> advance science & engineering research promote excellence in STEM workforce build effective models of PhD & workforce development | <ul style="list-style-type: none"> lack of integration between research & education inadequate understanding of alt. funding models; insufficient attention to changing skills needed in STEM professionals | <p><u>Mentoring:</u> promote peer mentoring b/t & among cohorts; establish > informal modes of engagement</p> <p><u>Curricular Innovation:</u> Cultivation of transdisciplinary skills; Exposure to international perspective; Stress on sophisticated evaluation of evidence</p> <p><u>Career Development:</u> > research internships;</p> <p><u>Diversity, Inclusion & Wellness:</u> attract broadest Sci & Engineering talent; research on how to cultivate effective diverse science teams</p> <p><u>Financial Support:</u> Assess impact of different. funding mechanisms on career outcomes</p> |
| Social Sciences | Preparing Future Faculty in the Humanities & Social Sciences (Council on Graduate Schools & Association of American Colleges and | <ul style="list-style-type: none"> maintain excellence in next generation of humanities @ soc sci faculty ensure training of quality university teachers | <ul style="list-style-type: none"> gap b/t R1s, where PhDs are trained, & institutions/careers grads serve decentralized nature of academic decision-making exclusive focus on disciplinary training in PhD ed | <p><u>Mentoring:</u> More attention apprenticeship in teaching</p> <p><u>Curricular Innovation:</u> integrate prof. dev. into curricula; exposure to interdisciplinary research & pedagogical training</p> <p><u>Career Development:</u> exposure to range of prof. responsibilities; internship opportunities; cultivation of communication skills;</p> <p><u>Diversity, Inclusion & Wellness:</u></p> |

| | | | | |
|--|--|--|--|---|
| | Universities, 2003) | | | > URM PhDs & faculty thru > diverse cohorts |
| | Reforming the Doctorate in the Social Sciences (European University Institute, 2017) | <ul style="list-style-type: none"> • maintain excellence in Ph.D. training • identify best practices soc. sci. PH.D. ed; • evidence-based evaluation of reforms | <ul style="list-style-type: none"> • economic resources to support public universities • > questions about impact & relevance of higher ed. | <p><u>Mentoring:</u> qual. supervision w/ app. res. for PhDs & supp. for fac.</p> <p><u>Curricular Innovation:</u> > openness to experimentation in thesis formats; realign coursework to reflect PhDs' needs; > coop. b/t inst. across nat. borders to train PhDs for international dialogue</p> <p><u>Career Development:</u> > attention to digital tools, skills relevant for a range of career trajectories</p> <p><u>Diversity, Inclusion & Wellness:</u> > attention to linguistic diversity in contexts w higher % of international PhD students</p> <p><u>Financial Support:</u> funding (indiv. & inst.) for PhDs to focus on thesis work</p> |

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Appendix 4: Doctoral Support at Peer Institutions

| | University | Standard Support Model | # of Doctoral Students | Overall Endowment at Institution | Notes |
|---|-----------------------|---|--|----------------------------------|---|
| 1 | Harvard (A&S) | 5 years (10 months) | 4100 Enrolled PhD students | \$37.1B | |
| 2 | Yale University (A&S) | <i>Humanities & Social Sciences</i> : 5 years (12 months); <i>Sciences</i> : 5 years (9 months) or 5 year (12 months) | 2699 Enrolled PhD students | \$25.4B | In general students receive support until they graduate, although in the Social Sciences & Humanities, Yale does no guarantee support after the sixth year. |
| 3 | Stanford | 5 years (12 months) | 4839 Enrolled doctoral students across all programs | \$24.8B | There may be some programs that provide only 9 months of support. Stanford encourages doctoral students to finish within 5 - 6 years; they receive supported so long as they are in good standing |
| 4 | Princeton | 5 years (12 months) | 2512 Enrolled PhD Students across all programs, as of fall 2017 | \$22.2B* | Students in a 6th year receive some level of support; many receive a full stipend. |

| | | | | | |
|----------|------------------------|--|---|---------|---|
| 5 | U. Penn | Support varies depending on discipline; may require work as a TA, etc. | 3122 Enrolled PhD Students across all programs, as of fall 2017 | \$12.2B | |
| 6 | U. Notre-Dame | 5 x 12 months | 1694 Enrolled PhD students across all programs as of fall 2018 | \$11.8B | |
| 7 | Columbia | 5 x 12 months | 3829 Enrolled PhD Students across all programs, as of fall 2017 | \$10B | |
| 8 | Duke University | 5 years 9 months (with 2 summers); or 5 years (12 months) | 2435 Enrolled PhD students across all programs, as of fall 2017 | \$7.9B | As a result of competitive funding opportunities, 80% of Duke doctoral students have 12 months of funding in any given year |

| | | | | | |
|-----------|------------------------|--|---|---------|---|
| 9 | Chicago | STEM: 5 years (12 months); Non-STEM: 4 years (12 months and 5 th year (9 months) | 3019 Enrolled PhD Students across all programs, as of fall 2017 | \$7.82B | 6th year stipend covered by some programs. |
| 10 | Vanderbilt | For most programs, 5 years (12 months)* | 1890 Enrolled PhDs in the Graduate School as of fall 2017 | \$4.1B | *Peabody College of Education provides stipends for 5 x 9 months. 6th year funding ad hoc. |
| 11 | Brown | 5 years (12 months) | 1571 Enrolled doctoral students, as of fall 2018 | \$3.7B | 6th year funding provided to all Humanities and Social Sciences doctoral students who requested it over the last 3 years |
| 12 | Carnegie Mellon | Each program owns admissions process, including deadlines & requirements, makes own arrangements for financial support of potential students | 1945 Enrolled PhD Students across all programs, as of fall 2017 | \$1.72B | Financial Aid and HR data systems do not maintain stipend information in any consistent matter. Decisions made at the department level. |

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Appendix 5: Duke University Doctoral Student Support

By School

In the tables below:

- students with summer support from TGS (12-month stipends with SRF from TGS);
- students with summer support from other funding sources; and
- counts of students without summer support (nine-month).

| Students with 12mo stipends with SRF from TGS ¹ : 19.05% | | | | | | | | |
|---|------------|------------|-----------|-----------|-----------|-----------|----------|------------|
| Student Count | | | | | | | | |
| Schools/Programs | 1st year | 2nd year | 3rd year | 4th year | 5th year | 6th year | 7th year | Total |
| A&S | 128 | 116 | 47 | 49 | 42 | 10 | 3 | 395 |
| Interdisciplinary Programs | 4 | 3 | 2 | 4 | 1 | 0 | 0 | 14 |
| Nursing | 10 | 9 | 4 | 2 | 0 | 0 | 0 | 25 |
| Sanford | 2 | 4 | 3 | 2 | 2 | 0 | 0 | 13 |
| Nicholas | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 5 |
| Grand Total | 144 | 132 | 59 | 58 | 46 | 10 | 3 | 452 |

| Students with 12mo stipends without SRF from TGS: 59.71% | | | | | | | | | | |
|--|------------|------------|------------|------------|------------|-----------|-----------|----------|----------|--------------|
| Student Count | | | | | | | | | | |
| Schools/Programs | 1st year | 2nd year | 3rd year | 4th year | 5th year | 6th year | 7th year | 8th year | 9th year | Total |
| A&S | 75 | 50 | 70 | 76 | 66 | 23 | 5 | 0 | 1 | 366 |
| Fuqua | 14 | 12 | 13 | 16 | 11 | 0 | 0 | 0 | 0 | 66 |
| Interdisciplinary Programs | 48 | 42 | 17 | 16 | 12 | 8 | 2 | 0 | 0 | 145 |
| Medicine | 62 | 54 | 65 | 59 | 49 | 22 | 4 | 0 | 0 | 315 |
| Medical Physics | 5 | 3 | 5 | 2 | 2 | 1 | 0 | 0 | 0 | 18 |
| Nursing | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| Sanford | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| Pratt | 124 | 93 | 89 | 69 | 41 | 14 | 8 | 2 | 0 | 440 |
| Nicholas | 11 | 12 | 11 | 17 | 4 | 1 | 0 | 0 | 0 | 56 |
| Grand Total | 340 | 266 | 275 | 260 | 185 | 69 | 19 | 2 | 1 | 1,417 |

Students with 9mo stipends¹: 21.24%

Student Count

| Schools / Programs | 1st year | 2nd year | 3rd year | 4th year | 5th year | 6th year | 7th year | 8th year | 9th year | 10th year | 11th year | Total |
|----------------------------|-----------|-----------|-----------|-----------|------------|------------|-----------|-----------|----------|-----------|-----------|------------|
| A&S | 11 | 19 | 51 | 57 | 68 | 74 | 31 | 10 | 1 | 1 | 0 | 323 |
| Fuqua | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Interdisciplinary Programs | 1 | 1 | 2 | 2 | 9 | 11 | 2 | 3 | 0 | 0 | 0 | 31 |
| Medicine | 2 | 1 | 1 | 3 | 9 | 19 | 9 | 4 | 1 | 0 | 0 | 49 |
| Medical Physics | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Nursing | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Sanford | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Pratt | 3 | 5 | 4 | 3 | 15 | 18 | 4 | 1 | 0 | 0 | 1 | 54 |
| Nicholas | 1 | 1 | 2 | 1 | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 25 |
| Grand Total | 18 | 31 | 64 | 66 | 124 | 132 | 47 | 18 | 2 | 1 | 1 | 504 |

¹Totals include students without 12-month funding due to graduation, attrition, medical school transfer or funding beyond Duke's reporting.

By A&S Division

In the tables below:

- A&S students with summer support from TGS (12-month stipends with SRF from TGS);
- A&S students with summer support from other funding sources; and
- counts of A&S students without summer support (nine-month).

| Students with 12mo stipends with SRF from TGS: Student Count | | | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|
| A&S Divisions | 1st year | 2nd year | 3rd year | 4th year | 5th year | 6th year | 7th year | Total |
| Humanities | 45 | 45 | 25 | 23 | 24 | 5 | 2 | 169 |
| Natural Sciences | 25 | 20 | 5 | 3 | 4 | 4 | 0 | 61 |
| Social Sciences | 58 | 51 | 17 | 23 | 14 | 1 | 1 | 165 |
| Grand Total | 128 | 116 | 47 | 49 | 42 | 10 | 3 | 395 |

| Students with 12mo stipends without SRF from TGS: Student Count | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|
| A&S Divisions | 1st year | 2nd year | 3rd year | 4th year | 5th year | 6th year | 7th year | 9th year | Total |
| Humanities | 3 | 3 | 3 | 3 | 6 | 6 | 1 | 0 | 25 |
| Natural Sciences | 66 | 42 | 55 | 43 | 48 | 14 | 3 | 0 | 271 |
| Social Sciences | 6 | 5 | 12 | 30 | 12 | 3 | 1 | 1 | 70 |
| Grand Total | 75 | 50 | 70 | 76 | 66 | 23 | 5 | 1 | 366 |

| Students with 9mo stipends: Student Count | | | | | | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|------------|
| A&S Divisions | 1st year | 2nd year | 3rd year | 4th year | 5th year | 6th year | 7th year | 8th year | 9th year | 10th year | Total |
| Humanities | 5 | 5 | 10 | 21 | 21 | 15 | 11 | 4 | 1 | 1 | 94 |
| Natural Sciences | 5 | 13 | 16 | 17 | 18 | 27 | 13 | 2 | 0 | 0 | 111 |
| Social Sciences | 1 | 1 | 25 | 19 | 29 | 32 | 7 | 4 | 0 | 0 | 118 |
| Grand Total | 11 | 19 | 51 | 57 | 68 | 74 | 31 | 10 | 1 | 1 | 323 |

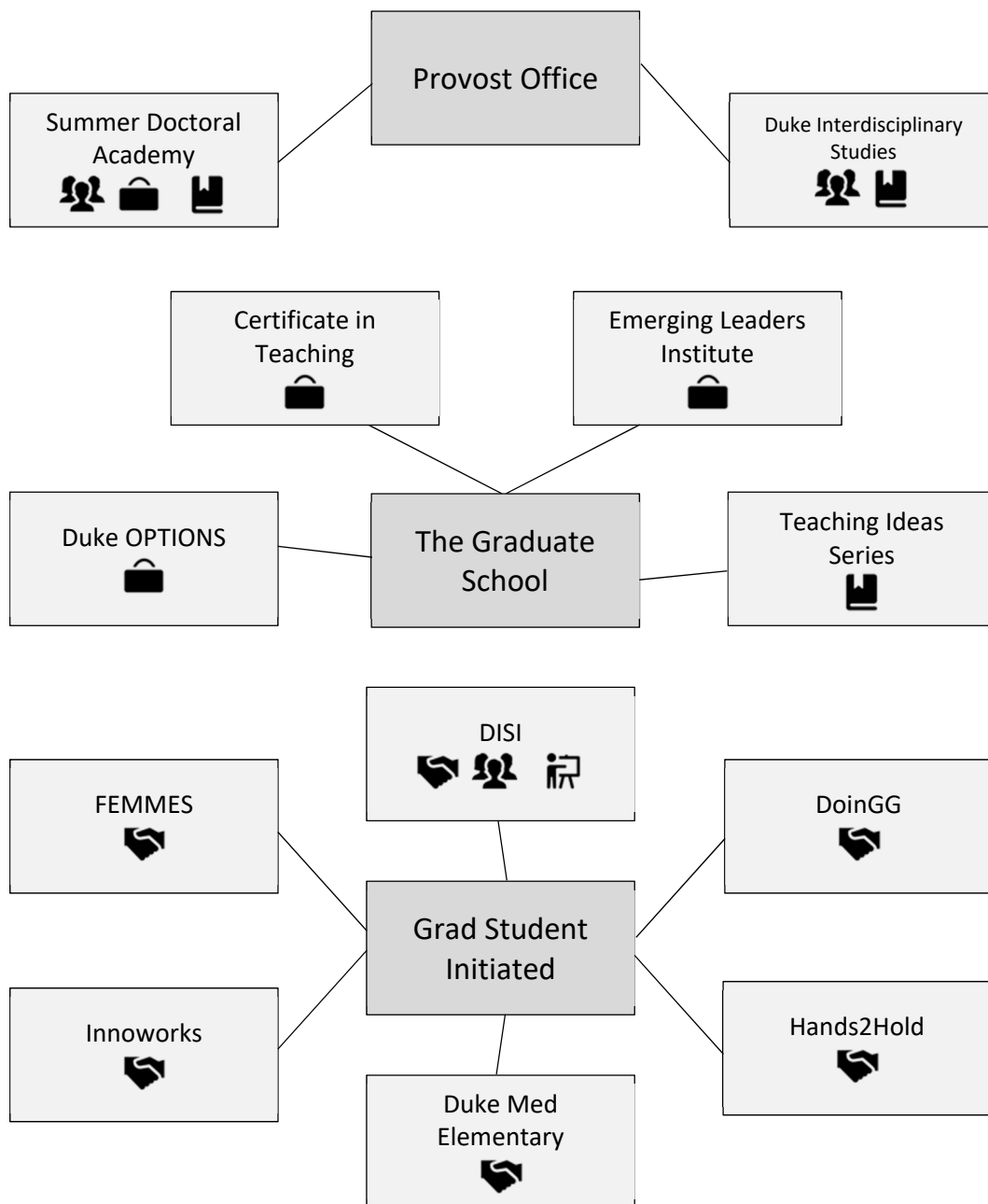
Below, enrolled students without stipend support:

| Students without stipend support | | | | |
|----------------------------------|-----------|----------|----------|-------------|
| School | 6th year | 7th year | 8th year | Grand Total |
| A&S | 8 | 8 | 3 | 19 |
| Fuqua | 3 | 0 | 0 | 3 |
| Medicine | 1 | 0 | 0 | 1 |
| Nicholas | 0 | 0 | 1 | 1 |
| Pratt | 1 | 1 | 0 | 2 |
| Grand Total | 13 | 9 | 4 | 26 |






























| Students without stipend support | | |
|----------------------------------|----------|----------|
| A&S Divisions | 6th year | 7th year |
| Humanities | 2 | 5 |
| Natural Sciences | 0 | 1 |
| Social Sciences | 6 | 2 |
| Grand Total | 8 | 8 |

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Appendix 6: A Schematic Overview of Extra-Departmental Opportunities for Doctoral Students at Duke



**Examples of Opportunities for Doctoral Students Furnished by Duke's
Institutes and Initiatives**

| | | |
|--|--|---|
| Duke Global Health Institute |     | Global Health Doctoral Scholars Program Doctoral Certificate in Global Health |
| Duke University Energy Initiative (EI) |    | PhD Student Fellows in Energy Economics Policy, Energy Data Analytics |
| Franklin Humanities Institute (FHI) |     | Interdisciplinary courses Participation in Academy in Global Humanities; PhD Lab in Digital Knowledge |
| Information Initiatives at Duke (iiD) |     | Offers seminars, lectures, workshops Data+ and Data Expeditions |
| Duke Institute for Brain Sciences |    | Neuroscience Boot Camp for incoming students; Cognitive Neuroscience Admitting Program Courses Certificate in Cognitive Neuroscience -- offers workshops, lectures, seminars |
| Social Science Research Institute (SSRI) |   | Interdisciplinary courses, workshops, consulting services for students |
| Kenan Institute for Ethics |   | Kenan Graduate Fellow Program |
| Duke Innovation & Entrepreneurship (I&E) |     | Innovation & Entrepreneurship Certificate (in development) Courses across a range of topics |
| Duke Science & Society |   | Interdisciplinary courses; workshops/short-courses on Science Policy and Science Communication |
| Nicholas Institute for Environmental Policy Solutions |  | Participation in Catalyst Grant Research Teams |

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Appendix 7: Reimagining Doctoral Education Focus Group Feedback

PhD Student Focus Group I (OPEN)

February 7, 2018, Noon – 1:30pm

Think Pair & Share Exercise: Name 2 strengths of PhD education at Duke and 2 weaknesses

Strengths

Faculty

- High caliber and well-funded

Support & Resources

- Reasonable student stipends
- Plentiful funding opportunities
- Quality of labs, instrumentation for science
- Certificate in Teaching
- Library resources

Organizational Diversity

- Student organizations are diverse and inclusive

Engagement

- Many options to become involved in student life at Duke University

Interdisciplinary Opportunities and Collaborations

- Flexibility to take courses at any of the schools

Peer Groups

- Strongly utilized at Duke for advice.
- School of Nursing (SON) POD model
- International School for non-US students

Weaknesses

Communication

- Landscape very complex; difficult to know what is going on and how to navigate all the opportunities

Advisors

- May not always have unbiased assessments of student interests at heart
- Often lack extensive knowledge of resources at Duke University
- Are not always available
- Often lack managerial experience

DGSs

- Often lack extensive knowledge of resources at Duke University

Culture

- No connection with peer group after Orientation; too many examples of abuse and manipulation by those in power; faculty demonstrate poor managerial skills
- Insufficient school to school interaction
- Less than ideal interaction with the local community
- International students sometimes left adrift

Proposed Solutions/Reforms

- Possible solutions: Web portal with real-time information
- More supplemental advisors such as Maria Wisdom
- Students need to choose advisers wisely and cultivate multiple mentors
- Departments should reward advisors for good performance and penalize them for poor performance
- Better attention to choice of DGSs
- Better training for DGSs
- Additional cross-departmental orientations at key junctures in program (perhaps at beginning of year 2; at beginning of year 4 (post-qualification for candidacy)

PhD Student Focus Group II (OPEN)

February 23, 2018, Noon – 1:30pm

Think Pair & Share Exercise: Name 2 strengths of PhD education at Duke and 2 weaknesses

Strengths

Quality of intellectual infrastructure including

- Access to well-funded PIs
- Courses
- Core facilities for sciences; library resources for humanities
- Access to small grants from centers and institutes
- Access to UNC-CH classes and supervisors

Interdisciplinary Culture

- Ability to TA in different department
- Diversity of student population
- Merit based admissions

Weaknesses

Financial Support

- Constant requirement to find summer funding (especially in some A&S humanities departments, and by international students)
- Stipend increasingly does not keep pace with cost of living in Durham

Culture

- Treatment of graduate students by the administration: sometimes as students, sometimes as employees; toggling not always in best interests of students
- Lack of consistent training experience
- Examples of bullying and abuse by superiors
- DGSs and TGS too often not effective advocates

Mentors

- Too many instances of poor mentoring poor: faculty advisor; DGS; other mentors
- Insufficient standards for behavior; inadequate system of accountability for poor behavior by faculty

Health & Wellness

- CAPS is the only treatment facility and is insufficient

Communication

- Resources too often not clearly publicized

Proposed Solutions/Reforms

- Raise graduate student income cap
- Clarify the role of graduate students at Duke as researchers and teachings assistants
- Provide appropriate incentives to reward students who receive grants from external sources
- Subsidize housing
- Increase/mandate training for mentors and implement system of oversight and accountability
- Implement more comprehensive program site reviews
- Expand opportunities for funded internships (one participant advocated mandatory internship)
- Increase flexibility with courses/curricula to optimize career preparation
- Increase the DGS supplement

PhD Students Focus Group (By Invitation)

March 5th, 2018, Noon – 1:30pm

Think Pair & Share Exercise: Name 2 strengths of PhD education at Duke and 2 weaknesses

Strengths

- Caliber of students and intellectual power of the faculty
- Quality of facilities and resources
- Interdisciplinarity: access to mentors, courses, and advisors outside department and at area universities
- Support for non-academic trajectories by TGS
- Internships for humanities students

Weaknesses

Financial Support

- Continuation fees out of step with peer institutions.
- Difficulties with Summer Funding for International Students
- Uneven incentives for seeking/receiving external funding

Culture

- Faculty expectations extending time to graduation: often due to unreasonable standards for dissertation quantity/quality; exacerbated by anxieties associated with high continuation fees.
- Cognitive dissonance between TGS and department: departments focused on narrower conceptions of research training & career outcomes; TGS promoting certifications/internships/broader approach to professional development; result can be students feeling as if they lead a “double life”
- Curriculum requirements do not provide enough flexibility to pursue internships.
- Concern over preference of some departments for larger cohorts at cost of skimping on average levels of support.
- Dissertation format too rigid

Mentoring

- Faculty advisors not sensitive to, or aware of how to support students in pursuing non-academic careers
- DGS training inconsistent.

Proposed Solutions/Reforms

- Address inconsistencies around faculty expectations for degree completion
- Consider including possibilities for internships in offer letter
- Present career trajectories to enrolling students and to faculty mentors and advisors
- Encourage departments to review dissertation formats
- Increase resources to support graduate students' exposure to non-academic career trajectories.

DGSA Focus Group (OPEN)

March 19th, 2018

Think Pair & Share Exercise: Name 2 strengths of PhD education at Duke and 2 weaknesses

Strengths

- Good stipend support
- Collaboration and interactions both within and outside of student's field of study
- Great faculty and research capacity
- The Graduate School as highly responsive and professional
- Collaboration facilitated among universities in the region

Weaknesses

- Professional development resources & opportunities unevenly communicated to students
- PhD programs vary widely due to differences in departmental funding models
- Lack of on-campus housing, or rent subsidized apartments
- Parking charges
- Lack of transparency around TGS policies
- The burden of summer continuation fees for international students who remain in-country
- Lack of internships

Proposed Solutions/Reforms

- Advise students at the beginning of their doctoral education on how to maximize the relationship with their advisor/mentor
- Initiate mentor/ mentee contracts that describe what can be expected of the relationship
- Offer DGS and DSGA training modules
- New DGS & DGSA teams should discuss roles and responsibilities
- Build a DGS and DGSA community (DGSA Council)
- Hire additional Supplementary Advisors who can provide holistic advice

Faculty Focus Group (Open)

March 27th, 2018 6:00 – 8:00pm

Think Pair & Share Exercise: Name 2 strengths of PhD education at Duke and 2 weaknesses

Strengths

Funding

Quality of the program

- Measured by quality of graduate students
- Measured by quality of faculty (academic reputation attracts diverse, high quality students, which results in strong placement)

Dedicated faculty, scholars, researchers, mentors

Low barriers to collaboration between units

- Openness to interdisciplinary collaboration across schools

Training

- TGS supports “in between” areas where departments train in (teaching, grant writing) attracts students

Weaknesses

Funding

- Sometimes too strict/restrictive
- Dollars not going as far in Durham
 - Disproportionately felt by students without family support (1Gs)
 - Fact that there is a food pantry
- Structure of grant funding makes it much more expensive to take students vs. post-docs
- Conflict in seeing grad students as trainee vs laborer is self-reinforcing
- Advancing research mission and undergraduate education may be at odds with cultivating graduate students
- Lack of summer funding
- In some departments, there is a tradeoff between summer funding and sixth year: some departments bank summer funding in order to support sixth year

Mentoring and advising

- Mentorship varies between excellent and terrible
- Problems are sometimes individual, sometimes institutional
 - Lack of accountability
- Faculty incentives: faculty not trained/supported in being good mentors
 - Doesn't match incentives: faculty rewarded for research and publishing, not teaching; having teaching responsibilities doesn't mean faculty can put in less effort with research and publishing

- When bullying happens, students and other faculty may raise concerns with DGS, but at least some DGSs can't/won't do anything
- We don't reward/punish departments for collective virtue

Culture

- Not sufficiently preparing our students to be anything other than academics
- Some students can get a little silo-ed, not exploring all options available to them with less engagement across peer networks
- Many faculty don't know where to point students
- Career services has historically had little grasp of what kinds of jobs are available to them (getting better);
- Tension between adding new opportunities and creating more stress for students
- Mental health: not feeling in control/effective/productive; mentors should help students feel productive; cultivate resilience with positive reinforcement
- Dispersed opportunities and responsibilities
 - "to be productive, you need to focus"
 - No navigator, easy to get lost in the shuffle
- Need more effective training for DGS

Proposed Solutions/Reforms

Interdisciplinary Collaboration

- More intellectual discussions of how fields intersect
- Department reviews take into account interdisciplinary opportunities
- Eliminate barriers to collaboration (coursework, faculty, financial)

Funding

- 12 months, all students, all departments
- Successful interdisciplinary programs receive direct funding
- Independent funding model would remove "perverse" incentives involved with putting students on grants (trainee vs. laborer)
- Provide funding mechanisms for exceptional students to enable "free discovery"

Case for Doctoral Education

- Understand why students pursue doctoral education and value doctoral students as much as undergrads
- Having more conversations about what graduate education is and what it means in different fields and departments
- Openness to market changes

Supporting Faculty

- Help mentors be prepared to work with diverse students
- Train faculty to be watchful of mental health
- Tie faculty compensation and review to successful faculty-student relationship
 - Accountability & enforcement
- Prepare faculty for teaching, mentoring

Curricular Changes

- Faculty report to DGS technical evaluation before comprehensive exams
- Make multi-varied mentors available to students
- Be more open minded & intentional about preparing for non-academic careers
- Prepare students who wish to pursue an academic career to teach
- Understand why infrastructure that supports professional development under-utilized:
 - In some departments, it's a course credit
 - Some students have too much on their plate
 - There may be a disconnect among departments, advisors and students (there may also be incorrect assumptions about messages/preferences/signals from/by faculty)

DGS Focus Group (By Invitation Only)

April 26th, 2018, 6:00-8:00pm

Think Pair & Share Exercise: Name 2 strengths of PhD education at Duke and 2 weaknesses

Strengths

- Range of program/thesis areas
- Great faculty and students and strong research ethos
- Extent of funding opportunities
- Availability of travel funds
- Peer to peer group dynamics
- Collaboration with universities in the region, especially UNC-CH
- Community outreach and service

Weaknesses

- Insufficient training in data analysis & statistics
- TGS policies enforced inconsistently
- Funding of 6th year and summer terms.
- Misalignment between prestige of university and financial support of students
- Pressure to meet expectations often causing anxiety and health issues.
- Mentor: mentee responsibilities often not clear

Proposed Solutions/Reforms

- Enforce accountability to address instances of poor advising/DGSs/mentoring
- Fund DGS – student lunch sessions
- Administer Individual Development Plans (IDPs)
- Offer students a “Managing-Up” module
- Create DGS and DGSA community groups
- Create career ladder: DGS, Associate DGS
- Bolster resources in CAPs including ethnic and cultural awareness
- Introduce a Cohort Model to optimize the no. of student slots while still filling the need for RAs and TAs
- Consider decreasing the number of student slots but pay 12 months for 6 years.

Junior Faculty Focus Group

April 30th, 2018 6:00-8:00pm

Think Pair & Share Exercise: Name two strengths and weaknesses of PhD education *at the school where you completed your PhD training*

Strengths

International reach, diversity

Interdisciplinarity

- Connection to cohort (including students in different departments)
 - Culture of peer mentoring supportive/motivating
- Faculty
 - One-on-one mentoring
 - Access to many leading faculty as mentors
- Curriculum
 - Structured (with qualifying exams)
 - Strong foundations
- Transparent standards
- Professional development (in at least some programs)
 - Weekly presentations from external researchers
 - Teaching responsibilities (good preparation, part of pedagogy)
 - Academic and non-academic professional development useful whether or not you go into academia

Weaknesses

Funding

- Guarantee promised on condition of onerous teaching requirements in some programs
- Draining, “living that life was very hard”
- Unionization (confusing for students, disjoint between public and private conversations)
- Conference funding not sufficient (for learning, networking) (at Duke)
- Summer funding not sufficient in some programs, tuition onerous to students and departments (at Duke)
- Cheaper to take post-docs or UNC PhD students
- Cohort size in some smaller programs– need to think about critical mass

Mentoring and advising

- Uneven mentoring of doctoral students
- Heterogeneity
- Burden of mentoring sometimes falls on junior faculty (Ghost advisor)
- Students vulnerable to a single advisor
- Academic chain of command not strong – can’t resolve student-faculty conflict

Culture

- Heterogeneity in student experiences: expectations, professional development, treatment

Proposed Solutions/Reforms

Funding

- Expectation that student will TA/RA
- Make sure teaching pertinent to student's pathway
- May involve some curricular flexibility including changing the way students matriculate and flexibility around the Masters completion (flexibility for students matriculating with a related Masters; less stigma for leaving after Masters)
- More transparency around summer tuition remission/high continuation fees

Building Cohorts ("training an intellectual community")

- Connect across departments/programs and years
- Integrate post-docs more with cohort, culture of departments
- Best practices on recruitment

Mentoring/advising

- Students should learn from more than a single advisor
- Departments may hamper interdisciplinarity because admitted students will land more in the core of the discipline
- Accountability: soft or hard incentives at level of individual faculty and department

Potential for co-advising

- junior-senior faculty pairings good training for junior faculty member (especially first-time advisors)
- *But* dilutes student impact on faculty work in some fields
- Would require both advisors to communicate with each other

Deans & Directors Focus Group

May 9th, 2018, 6:00-8:00pm

Strengths

- Location in Triangle allows collaboration with other local research universities and facilitates some industrial partnerships
- Duke brand has a caché that is attractive to students and to employers

Weaknesses

- The mismatch between matriculants' expectations of academic careers and graduate career outcomes is not explicitly acknowledged or addressed
- Inconsistent mentoring and advising
- Inconsistent accountability for poor mentoring /advising
- Inadequate communication to graduate students regarding their responsibilities as members of the Duke scholarly community
- Too few venues for graduate students to speak in confidence about problems with their advisor, committee and/or department
- Uneven of DGS training
- Lack of departmental understanding around best practices in graduate education
- Chair & dean are not directly responsible for the actions (and inactions) of faculty acting in their capacity as graduate student advisors
- Some TGS practices are opaque
- Some doctoral programs lack a critical mass of graduate students
- Insufficient endowment for graduate education results in inability to recruit top students

Proposed Solutions/Reforms

Funding

- Allow units to opt-in to a model of guaranteed 12 month/five-year funding in exchange for fewer graduate students
- Make philanthropy for graduate education/ department research a bigger university priority
- Consider additional partnerships with UNC-CH to build cohorts for smaller programs

Mentoring/advising

- Align responsibilities with accountability. Consider how best to enable chairs and school deans to work with DGSs and DGSAs in fashioning local responses to departmental issues. (DGS has primary appointment in dept.)
- Encourage faculty to monitor peers; mentor to mentor "cup of coffee" model
- Inform students of reporting line and expectations of outcomes

Reimaging Doctoral Education Committee Report

Appendix 8: Highlights from the Surveys of Duke Faculty, Current Doctoral Students, and Graduate Alumni¹

In the spring of 2018, and with the help of the Office of Institutional Research, we conducted randomized surveys of Duke professors who are members of the Graduate Faculty, current doctoral students, and holders of Duke PhDs.² The statistics for the number of individuals sampled, the number who opened the relevant survey, and the number who completed that survey, follow. Some survey takers did not answer every question, leading to variability in the number of answers for different questions.

| | Sampled | Opened | Completed |
|-----------|---------|--------|-----------|
| Student | 1,000 | 249 | 164 |
| Faculty | 1,000 | 266 | 197 |
| Graduates | 4,425 | 891 | 756 |

This appendix pulls out a selected set of key findings, including representative reflections from those questions that invited survey-takers to offer comments. It discusses the following broad areas: mentoring; professional development; and perceptions of key resources to support doctoral students while they are at Duke.

Mentoring

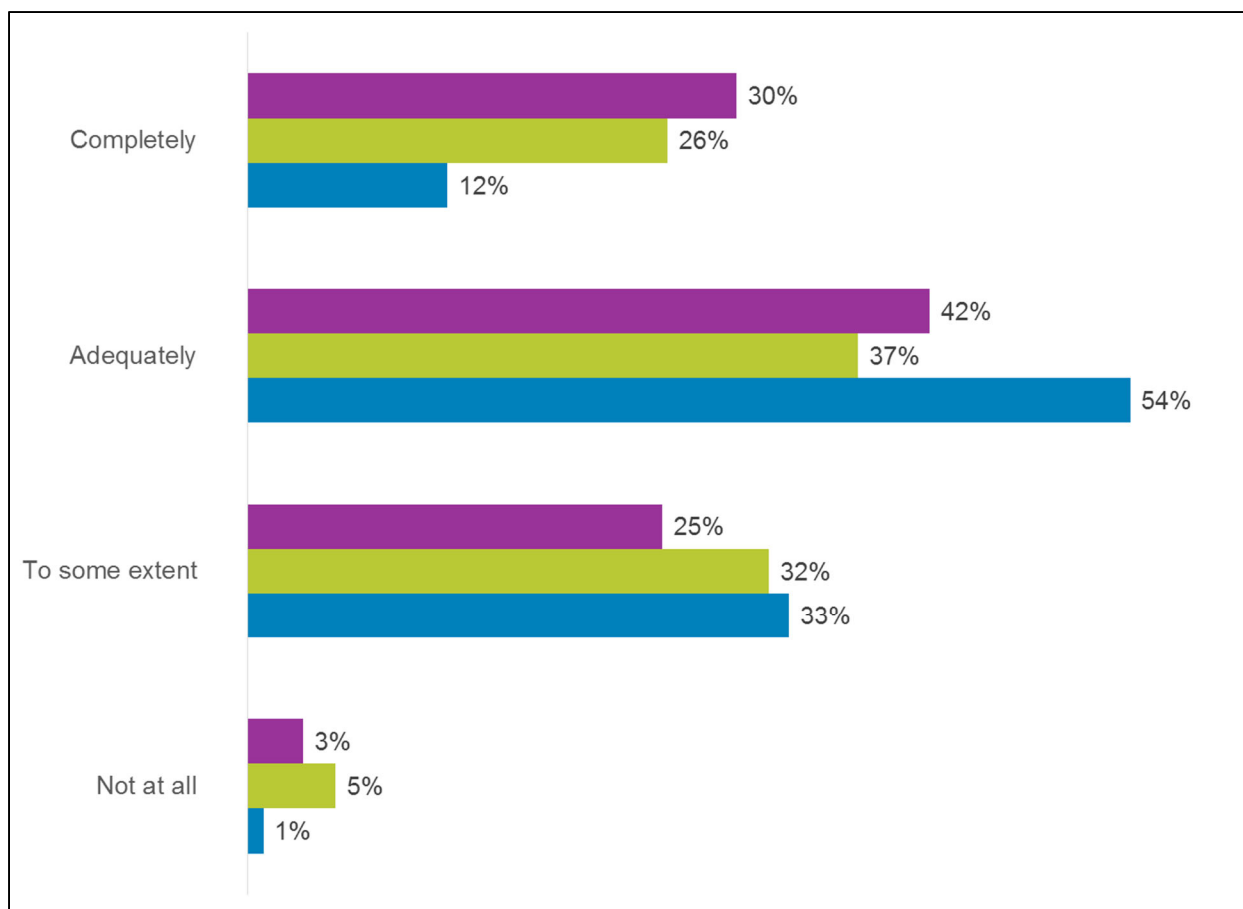
1. We asked **students**, **graduates**, and **faculty** about the mentoring and advising needs of students.

Question:

- Student version: To what extent have your mentoring and advising needs been met here at Duke?
- Graduates version: To what extent were your mentoring and advising needs met at Duke?
- Faculty version: To what extent do you think that PhD mentoring and advising needs are met in your program?
 - Completely
 - Adequately
 - To some extent
 - Not at all

¹ We are grateful to Callie Naughton, a student pursuing Masters in both Public Policy and Business Administration, who has served as a research assistant for the RIDE Committee. Naughton undertook analysis of the survey results.

² We did not survey doctoral students who graduated last year, in order not to have a negative impact on the response rate to The Graduate School's regular survey of graduating students.

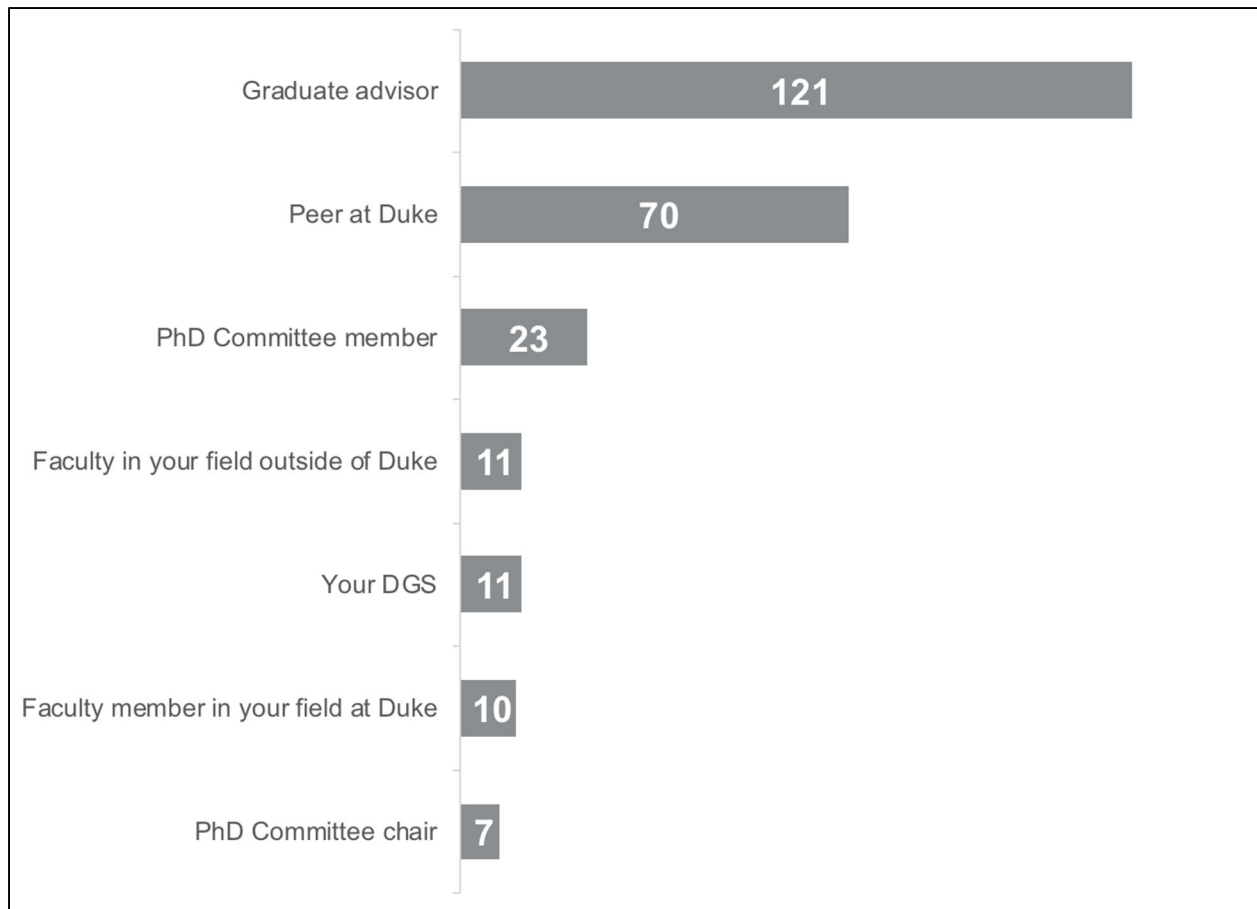


In general, faculty underestimate the degree of variation in mentoring and advising relationships. Compared with students and graduates, faculty slightly over-report relationships where mentoring and advising needs are met adequately or to some extent. Compared with students and graduates, faculty under-report cases where mentoring and advising needs are completely or not at all met.

2. We asked students who has provided the most valuable mentoring and advising during their graduate careers.

Question:

- Student version: Who has provided the most valuable advising and mentoring during your graduate career? Please check up to two responses.

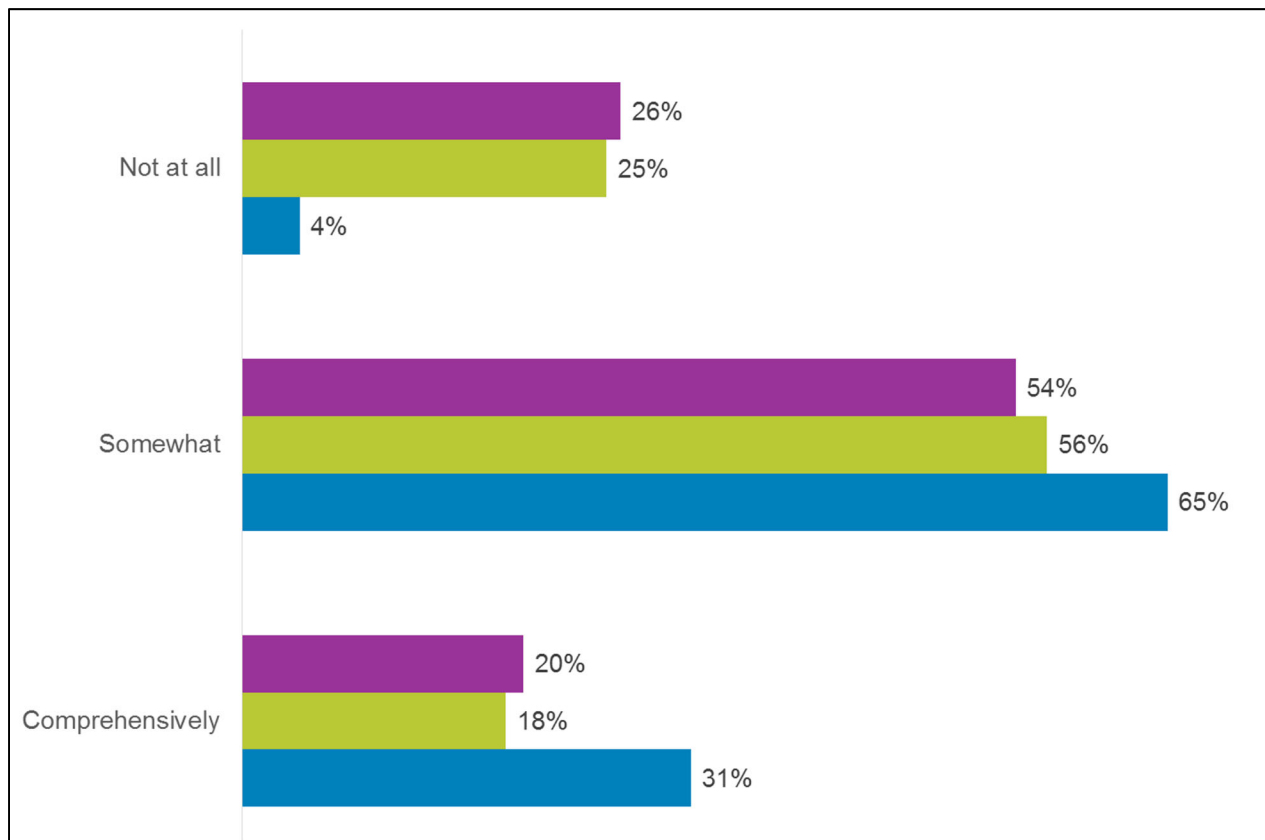


While 68% selected graduate advisor among their top three, nearly a third of students did not include their advisor among the top three most valuable sources of mentoring and advising. The next most frequent responses were peer at Duke and PhD committee member.

3. We asked **students**, **graduates**, and **faculty** more specifically about career advising and whether students and advisors discuss the full range of career trajectories.

Question:

- Student version: To what extent have you chosen to talk to your PhD advisor or PhD committee chair about the full range of career trajectories available to you?
- Graduates version: To what extent did you talk to your PhD advisor or PhD committee chair about the full range of career trajectories available to you?
- Faculty version: To what extent do PhD students in your program talk to faculty about the full range of career trajectories available to them?
 - Not at all
 - Somewhat
 - Comprehensively



As before, responses are fairly consistent between students and graduates. Faculty report that 31% of students in their departments receive comprehensive mentoring and advising, whereas students and graduates report 20% and 18% respectively. Faculty underestimate the student and graduate satisfaction at the bottom end of the range. Faculty report that only 4% of students receive no mentoring and advising, whereas students and graduates report 26% and 25%, respectively.

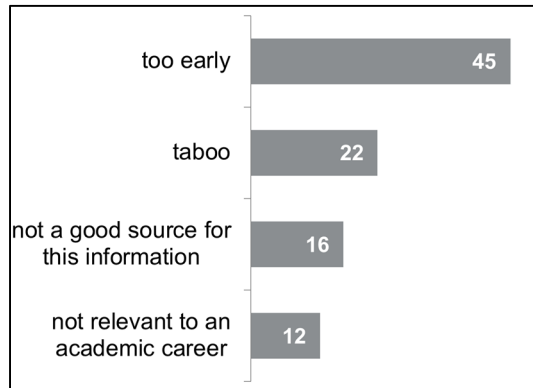
Note: We did not ask students, graduates or faculty to define what they mean by “comprehensive,” so students and faculty may have ranked the same relationships differently. Regardless, the results indicate that a quarter of students and graduates feel that their mentoring and advising needs were not at all met during their time at Duke.

4. We asked students why they have chosen not to discuss the full range of career trajectories with their PhD advisor or committee chair. Likewise, we asked faculty why colleagues in their departments have chosen not to discuss the full range of career trajectories with students.

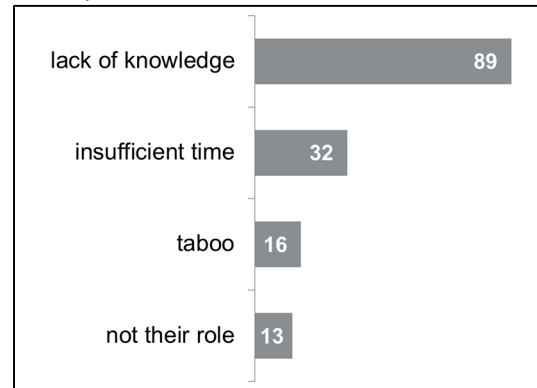
Question:

- Student version: Why have you not chosen to discuss the full range of career trajectories available to you with your PhD advisor or PhD committee chair?
- Faculty version: What limits your colleagues’ willingness/ability to discuss career trajectories with PhD students in your program?

Students:



Faculty:



Students offered the following explanations in comments:

I am not entirely sure about what I want to do, and so I do not want to introduce doubt or uncertainty with my advisor.

Still figuring out what I want to do after I graduate, since I'm only half way through my PhD. Also I don't want to invest in career development too openly at the expense of my academic responsibilities. Advisors tend to prefer graduate students who're fully committed to publishing papers, getting useful results etc.

I'm a first-year, and am still figuring out what career trajectories I want to pursue. I don't necessarily want to create stress with my advisor before I'm more sure about what I want to do.

The first and third comments, and the survey results, indicate that students may be waiting too long to have critical conversations with advisors. The second comment also illustrates what is found in the survey, namely that students consider career discussions a taboo subject more so than faculty members. A corps of supplemental advisors would solve both of these problems by allowing students to have lower-stakes conversations about career options earlier. Supplemental advisors could also alleviate a secondary problem: students may assign too much knowledge to faculty advisors who do not themselves feel equipped to offer students comprehensive advice on the range of career trajectories.

Students did acknowledge that sometimes they contribute to the breakdown of mentor-mentee relationships. Several asked for training on how to choose a dissertation topic, how to make the most of their time at Duke, and how to be a good mentee. One said simply: "I would like to have a clearer idea of how to find good mentors." Ultimately, students, faculty and graduates agreed that faculty are not in the best position to offer comprehensive mentorship and advising. As students explained:

I really think faculty do not always realize some of their responsibilities to their students in terms of checking in on research, mental health, and career plans. I also think students are not trained in initiating conversations about their needs or think their advisors are not there to talk about those concerns.

In many cases, having a singular graduate advisor works great, but in others it doesn't. Faculty cannot be expected to do all parts of the mentoring job well: They are expected to train us in research, writing, analysis, publishing, teaching, mentoring, networking, alternate careers, etc. Most faculty have no idea what outside careers look like, because they never sought one themselves. Others are not particularly great at teaching, but are supposed to train us to teach?

Beyond better faculty training and oversight, I would strongly urge Duke to consider having more than one primary faculty advisor for incoming PhDs, because sometimes advisors can't do it all, and students should have a formalized mechanism to have more than one advisor. Many of us get this secondary help by other faculty or committee members stepping up, without any formal recognition of that relationship.

Professional Development

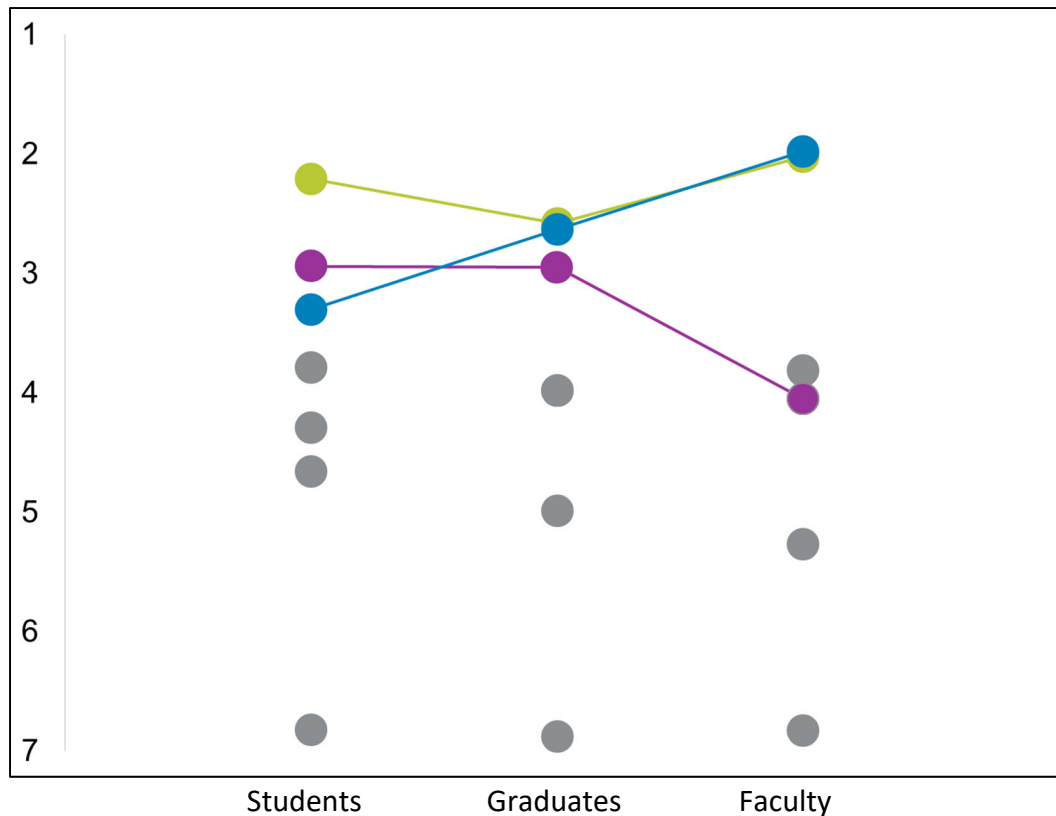
1. In the student, graduate and faculty surveys, we asked respondents about what motivates graduate students to obtain a doctoral degree.

Question:

- Student version: When you matriculated, what was your motivation for obtaining a doctoral degree? Please rank your motivations by dragging and dropping the choices below, with your top motivation at the top.
- Graduates version: When you matriculated, what was your motivation for obtaining a doctoral degree? Please rank your reasons by dragging and dropping the choices below, putting the most important reason at the top.
- Faculty version: What do you think motivates most incoming Duke PhD students in your program to pursue a doctoral degree? Please rank your top three reasons starting with the most important. Drag the items into the order you want.
 - Interest in an academic career
 - Interest in teaching
 - Interest in research
 - Professional advancement
 - Intellectual development
 - Interest in a non-academic career

The ranking of motivations to obtain a doctoral degree were:

| | Students | | Graduates | Faculty |
|-----------------------------------|------------------|------|------------------|------------------|
| | At Matriculation | Now | At Matriculation | At Matriculation |
| Interest in research | 2.21 | 2.63 | 2.58 | 2.02 |
| Intellectual development | 2.94 | 2.58 | 2.95 | 4.04 |
| Interest in an academic career | 3.30 | 3.98 | 2.63 | 1.98 |
| Professional advancement | 3.79 | 2.95 | 3.98 | 4.05 |
| Interest in teaching | 4.29 | 3.98 | 3.98 | 3.81 |
| Interest in a non-academic career | 4.66 | 4.99 | 4.99 | 5.27 |



For faculty and graduates, the top two reasons why students pursue doctoral education is **interest in an academic career** and **interest in research**. Students report that they are highly motivated by interest in research, but report that **intellectual development** is a stronger motivator than interest in an academic career.

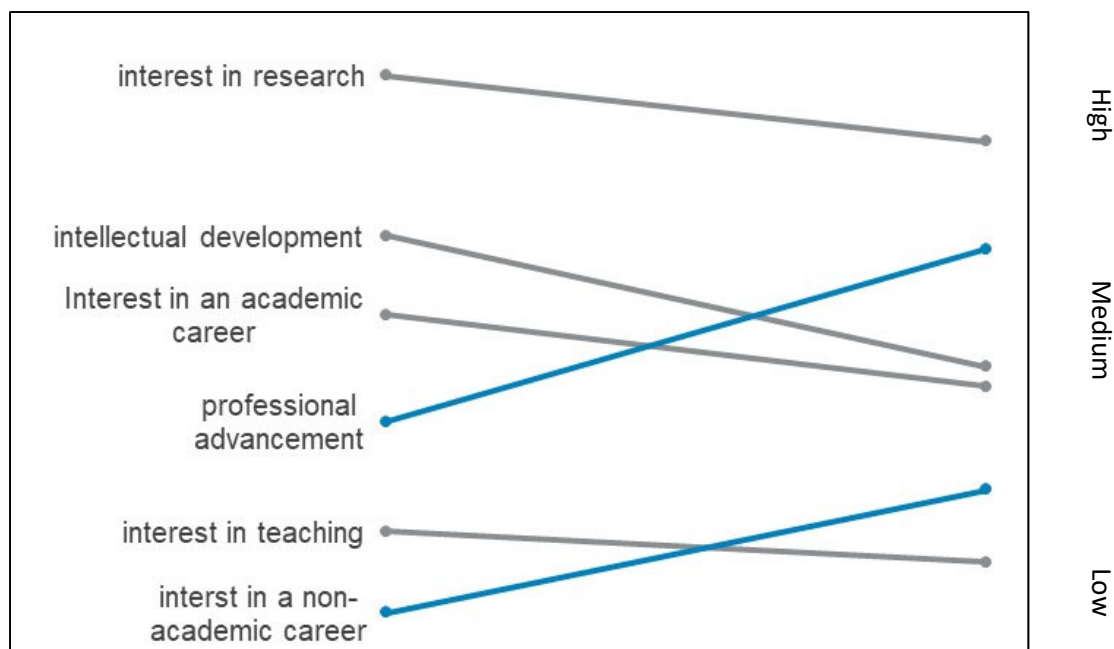
2. In addition to asking students to rank their motivations to pursue doctoral education at the time of matriculation, we asked students to rank their motivations to continue doctoral education at the present time.

Question:

- Student version: At this present time, what is your motivation for obtaining a doctoral degree? Please rank your motivations by dragging and dropping the choices below, with your top motivation at the top.
 - ☐ Interest in an academic career
 - ☐ Interest in teaching
 - ☐ Interest in research
 - ☐ Professional advancement
 - ☐ Intellectual development
 - ☐ Interest in a non-academic career

At Matriculation

Now



The results indicate that student motivations are not static. As their career advances, students are increasingly motivated by professional advancement and interest in a non-academic career. Other motivations, such as interest in research, intellectual development, interest in an academic career and interest in teaching, become less important during a student's time at Duke.

Based on these results alone, it is difficult to tell whether students are pushed away from interest in an academic career because of the challenges in the academic job market, or rather if they are pulled towards a non-academic career because of organic interest in opportunities outside of academia. As departments grapple with issues of program size and admissions standards, they should keep in mind that gauging a student's commitment to an academic path at the outset does not account for the degree to which student interests will grow and change while pursuing a doctoral degree.

3. Student motivations to obtain a doctoral degree are varied and personal. In the comments section at the end of the survey, students, faculty and graduates asked for more programming around core professional skills that will serve graduates students in any professional environment they might seek.

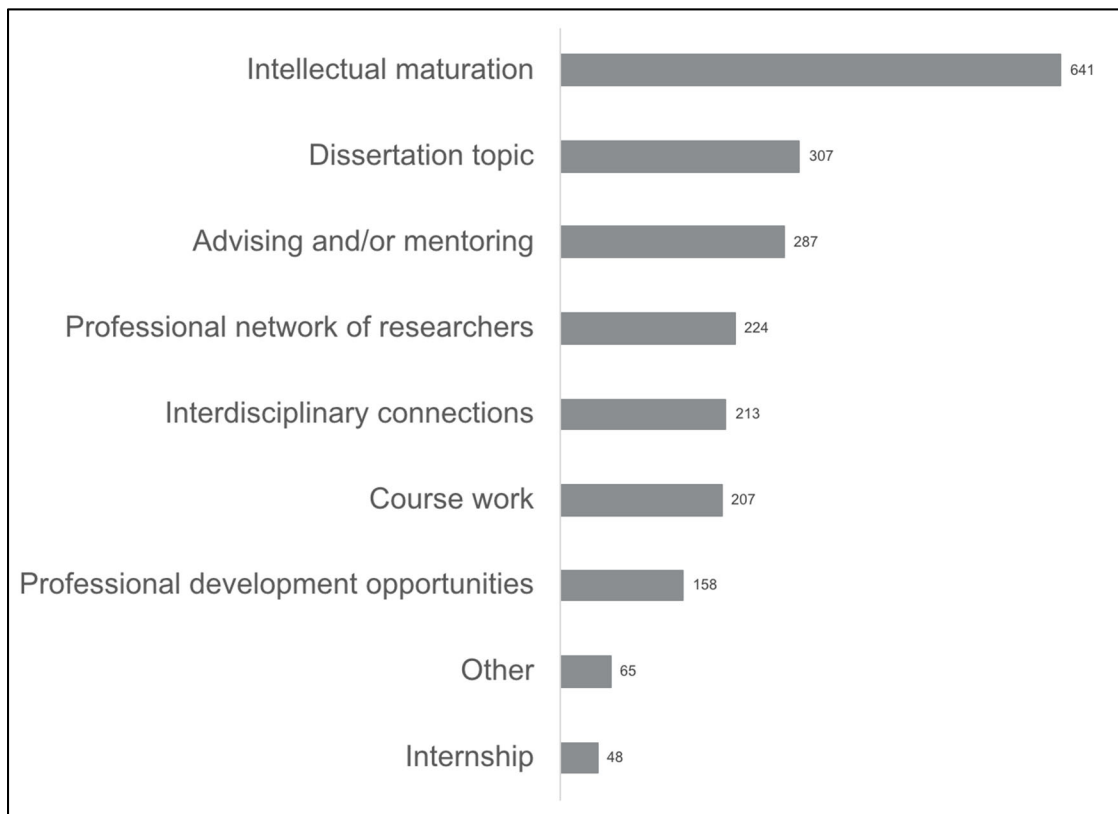
The following comments were submitted by graduates of the doctoral program. One currently works in academia and the other does not.

The Graduate School saved me. The professional development opportunities, career exploration opportunities, advising, and support I received from the Graduate School staff made my PhD experience. The Graduate School programming gave me a safe space to explore my professional interests, meet and work with students from different disciplines, and develop as a more well-rounded individual. The Graduate School helped me integrate my research identity into my larger identity; the impact of this is I now mobilize my research training to inform and augment my contribution to a non-research career.

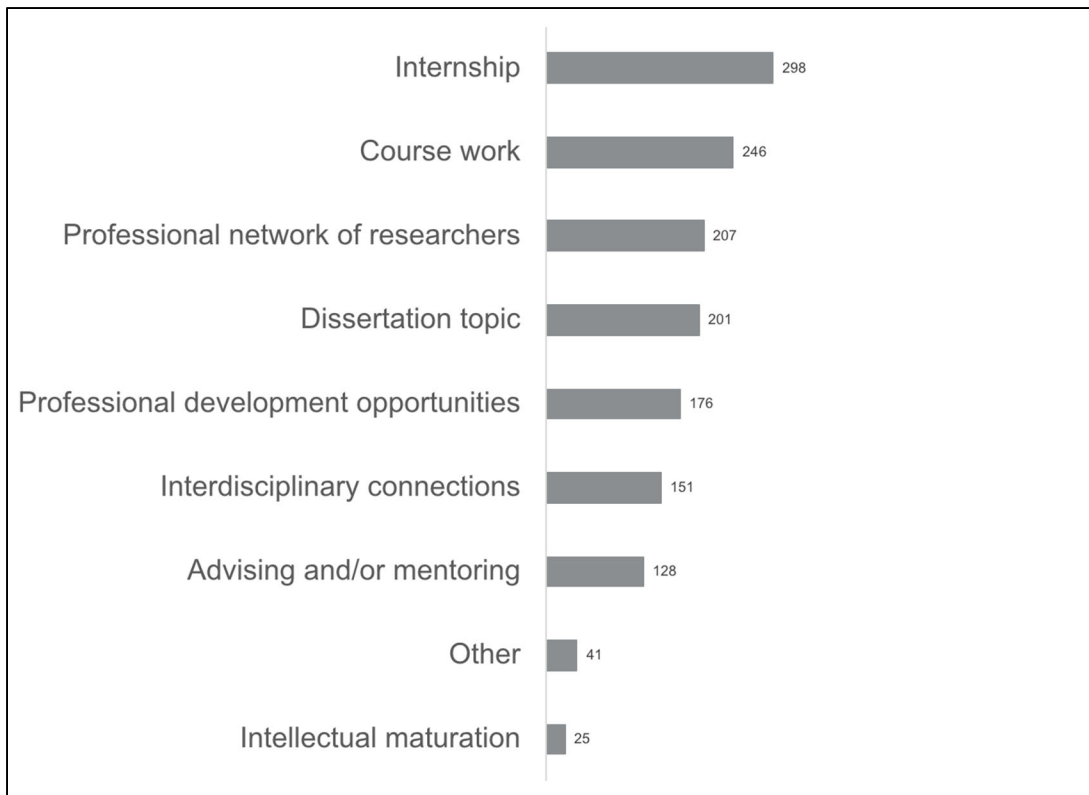
I believe that more emphasis could be placed on professional development for grad students in humanities PhD programs - for instance, learning how to teach, how to think of oneself as a faculty member, and how to make important professional connections (networking), and how to balance teaching and research.

4. We asked graduates to list the aspects of their doctoral training that are most valuable and least valuable to their current work.

Most Valuable (n=762)



Least Valuable (n=661)



Nearly 85% of graduates, or 641 out of 762 respondents, identified intellectual maturation as the aspect of doctoral training that is most valuable to their current work.

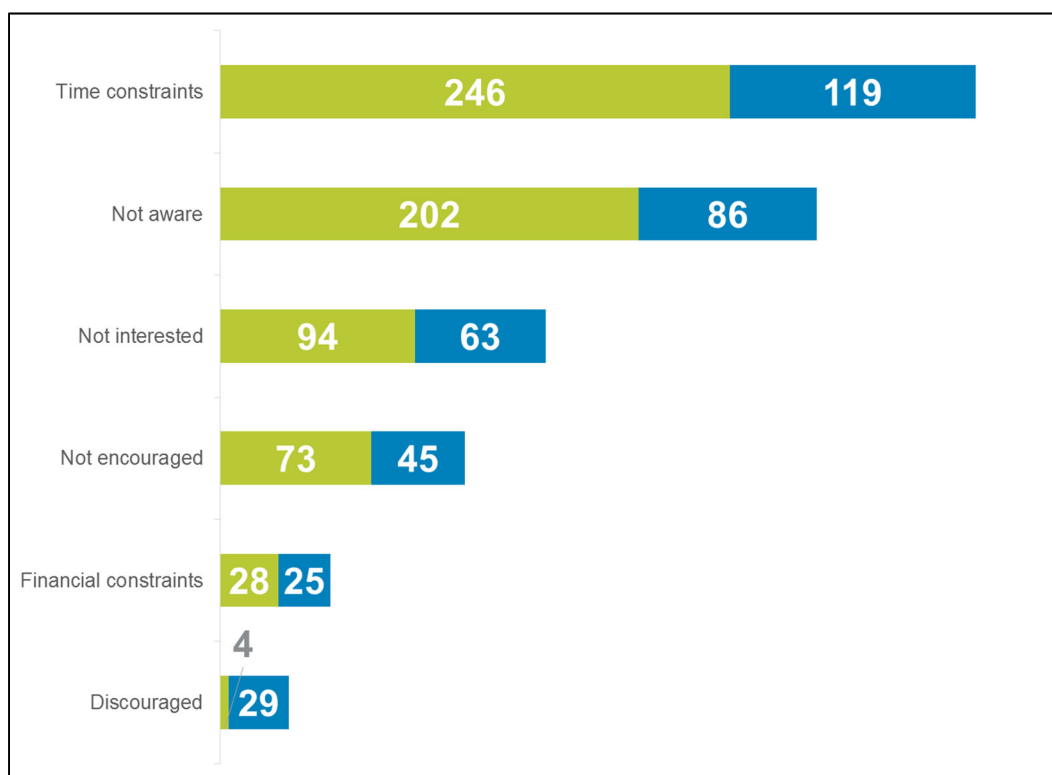
Though 37% of graduates feel that course work was one of the least valuable aspects of doctoral training, 27% of graduates feel that course work was one of the most valuable aspects of doctoral training. These responses suggest that doctoral education is not one size fits all. If the results indicate that all these opportunities have the possibility of being valuable, then the key seems to be helping students identify which opportunities are most valuable to their own path.

5. We asked students why they do not take advantage of available enhancement opportunities, such as research teams, professional development, certificates, and internships.

Question:

- Student version: Indicate why you haven't taken advantage of these enhancement opportunities. Please check all that apply.
 - Not aware of the enhancement opportunities
 - Not interested
 - Not encouraged
 - Discouraged
 - Time constraints
 - Financial constraints

Evaluating the responses based on how far students have progressed in their programs reveals differences between students **less than three years** or **more than three** years into their tenure as doctoral students.



A large number of students, especially students in the first three years of a program, identified that it is too early to take advantage of enhancement opportunities or that they are not aware of them. Some students, especially students past the first three years of a program, said they were discouraged from participating in enhancement opportunities. This suggests that two things are happening: first, students put off participating in these opportunities until well into their time at Duke; second, when students do get around to participating in an enhancement opportunity, they often are discouraged from doing so.

6. In the comments section, graduates provided a great deal of feedback about internships. Some wished they had had the opportunity to pursue an internship in order to prototype career options. Instead, students reported that they wound up moving between academia, industry and non-profits after graduating. Doing an internship while in school might have avoided some of this job-hopping.

Some graduates pointed out that internships are useful even if the student intends to pursue a career in academia:

“For students who are interested in research, this helps the future researchers to understand the challenging issue in the real world. It also helps the researchers avoid research topics that are going nowhere. For student who are interested in pursuing a career in industry, it helps professional development and career connections. So when students graduated, he or she will be ready for the career in front of him/her.”

One graduate wrote:

“Some of my most vivid memories of experiences during graduate school were actually an internship that I did with a company and a summer program (in Taiwan) that I personally sought out. These were experiences that greatly enriched my time and I'm very grateful that my adviser was a champion for me pursuing them.”

7. In the survey, we asked students, faculty and graduates to rank various enhancement opportunities, including internships. On average, faculty and graduates ranked internships last out of four options (average ranking of 3.33 and 3.60 respectively), and students ranked internships third out of four options (average ranking of 3.29). Nevertheless, 42 out of 179 students ranked this opportunity first. Of those, 17 of them reported that they had taken advantage of the opportunity to participate in an internship through the Graduate School, in the student's department, at another program at Duke, or outside of Duke. In total, there were 29 students who reported taking advantage of internship opportunities at least occasionally. Among those students, the average ranking of internships was 2.30. Of the students who reported taking advantage of internship opportunities “often” or that internship opportunities are a “central aspect of my training,” internships were ranked with an average score of 1.77.

Resources

1. While we did not specifically ask about funding and the cost of living, concern over these issues surfaced through the comment sections and focus groups.

Most graduate students and alumni echoed the words of this graduate who wrote that the ability to cover basic expenses like rent was necessary to fully engage intellectually with doctoral education:

“... I cannot underestimate how important sufficient funding was to my success. I have never identified with the “poor grad student” meme because I felt like I lived comfortably in Durham while in grad school (and I felt like my peers lived comparably). The lack of anxiety about basic living expenses and the ability to relax, have fun, engage in “self-care” etc. truly made me a more successful researcher/student.”

On the other hand, a current student offered the following comment about his/her ability to cover basic living expenses:

“I lose sleep every night worrying about how I am going to simply survive monetarily as I finish my dissertation. This financial situation has affected my mental health and overall health, impeding my work as a teacher and delaying the dissertation, because it's hard to focus on abstract questions and the fascinating research problems when you have insomnia worrying about the problem of paying your credit card and phone bill. Whereas I had entered academia in the hopes of working as a professor, now I am working on simply getting my degree and getting out.”

2. While we did not explicitly investigate concerns over mental health, the issue also surfaced in comment sections and focus group feedback. There is broad consensus among students, faculty and graduates that mental health is a challenge for doctoral students. Students asked for more resources for themselves and their peers. Faculty asked for support to help identify at-risk students early and support to direct students to appropriate resources. Graduates reflected on how mental health challenges created obstacles to intellectual development and academic achievement during their doctoral studies.

Students, faculty and graduates agreed that some degree of stress is inherent in the process of doctoral education. Many noted that the power imbalances between advisors and students can reinforce poor mental health when those relationships are abusive. The following comments from two graduates are especially instructive:

"... Better training in and openness to discussing mental health issues is something I think most graduate programs (but certainly mine) could do better in as a whole. It's troubling, I think, that most of my peers in graduate school struggled with severe depression, suicidal ideation, self injury, and substance abuse as widely as we seemed to, and that this was just sort of accepted as the way graduate students live."

"The dramatic discrepancy in power between PhD mentors and mentees could be a big problem and could kill PhD students' interests and future in academia. There should be enhanced systems and outlets for PhD students to talk openly about these issues with people outside of their thesis committees. I am currently in a completely different profession and am having a very promising future. But when I was a PhD student at Duke, I was so verbally and mentally abused by my mentor on a daily/weekly basis that I could barely spend a week without crying (the same happened to another PhD student in my lab). This mentally-traumatizing effect will remain on me and for the rest of my life, I will fight to feel more positive about myself and to be more confident and assertive."