Interim Report of the Academic Planning Council Workgroup

Future of Doctoral Programs at the University of California

Initial Recommendations, and a Path Forward

October 8, 2023

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Executive Summary

In late Spring 2023, the University of California's Academic Planning Council (APC), led by Provost Katherine Newman and Senate Chair Susan Cochran, created a new Workgroup with the title "The Future of Doctoral Programs at UC".[1] The Workgroup was asked to provide an interim report in October 2023, with a final report due in Spring 2024. Based on the deliberations of the group over the past several months, this interim report describes the status of our work as of early Fall 2023. It covers issues that apply to the UC system as a whole, while acknowledging that our intra-system differences will require flexibility and adaptation for implementation on individual campuses.

The report affirms the overarching principles and values of the University of California around graduate education, including the importance of PhD/MFA students to UC's mission and our obligation to ensure their success. It aspires to ensure that the UC can play a positive role in shaping PhD/MFA education for the nation. It also provides specific recommendations on three graduate education issues deemed by the Workgroup to require urgent action by the UC, its campuses, and its Faculty, namely:

1. **Clearly define academic expectations, particularly as they are distinct from other relationships graduate students may have with the university,** by:
   - generating syllabi and/or sets of expectations for learning outcomes, and clearly articulate and disseminate the academic criteria by which each graduate student will be graded;
   - creating resource banks with sample syllabi and templates;
   - explicitly acknowledging and encouraging faculty efforts in the training and mentoring graduate students.
2. **Provide stable and competitive financial support appropriate to successful degree completion,** by:
   - increasing public funding for graduate education by making its impact more visible broadly;
   - availing ourselves expeditiously of more graduate student housing;
   - working towards a minimum level of guaranteed support for PhD and MFA students;
   - incentivizing timely academic progress better matched to funding availability;
   - reducing the extent of coupling between the UC's tripartite missions;
   - continually assessing the impact of evolving funding models.
3. **Actively manage PhD/MFA enrollments, centering student success, disciplinary opportunities and challenges, program and applicant quality**, by:
   - managing admissions and yields more intentionally;
   - reducing the average time-to-degree and therefore overall cost of the program;
   - assisting programs in collecting and disseminating placement data.

The report also identifies unresolved questions in these same three areas that will require further, broad discussion over the coming academic year and, likely, bold new decisions in the near future.

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[1] Although this Workgroup's title specified "doctoral programs" at the time the group was convened, we have made an explicit point not to consider professional doctorates (*e.g.,* MD, DNP, EDD) within our scope, and to include the Master of Fine Arts (MFA), since it serves as the terminal degree in many arts and some humanities programs. Unless otherwise specified, the recommendations in this report should be assumed to apply to both the PhD and MFA degrees.

1. Introduction

1.1 The backdrop

The expansion of US universities in the post-war era between 1945 and 1970, also known as the "Golden Age" of higher education,[2] allowed research universities to grow their enrollments at all educational levels. This growth provided many opportunities for both established disciplines and new fields. However, by the 1970s, state governments had begun reducing their subsidies for higher education, resulting in a shifting of costs onto (1) students, in the form of tuition increases, and (2) faculty, who were obliged to secure extramural grants to fund graduate student research.[3] Since that time, all levels of graduate student support have failed to keep up with rising costs, including student stipends, tuition, fees, and other benefits, equipment and research costs, travel for professional development, and other expenses required for the education of PhD/MFA students. Neither state support for higher education nor federal grant support has expanded at anywhere near the pace of these rising costs. During this same time, tightening job opportunities and economic insecurity have contributed to dissatisfaction among graduate students. The prevalence of mental health issues amongst PhD students[4] has been the cause of much soul-searching.[5] The recent global pandemic appears to have exacerbated both economic and emotional distress for graduate students.[6]

The University of California plays a significant role in PhD/MFA education, contributing 64% of all PhDs earned in the state of California, and 7% of all PhDs earned nationally. Consequently, UC has a unique leadership responsibility in defining the future of graduate education. The career challenges of US-based graduate students in the Arts, Humanities, and Behavioral Sciences have received much attention,[7] and these concerns are now spreading to the STEM fields as well.[8] According to a National Science Foundation biennial survey of doctorate recipients, less than half of all US-residing PhD recipients (about 42%) were employed in tenure-stream positions in their primary field in 2021.[9] For STEM PhDs *of all ages*, the extent of private sector employment is now on par with employment at educational institutions, with the biggest shift over the past two decades affecting doctorates in the life and health sciences.[10] Furthermore, since this analysis includes several generations of degree recipients, the impact is much larger on STEM PhDs who entered the workforce more recently. Data on new PhD recipients shows that the fraction in 2021-22 who

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[2] Freeland, R. M., 'The World Transformed: A Golden Age for American Universities, 1945-1970', *Academia's Golden Age: Universities in Massachusetts, 1945-1970* (New York, 1992; online ed, Oxford Academic, 12 Nov. 2020), https://doi.org/10.1093/oso/9780195054644.003.0008.

[3] Bennett, J. W. (1971). The 1970's - Decade of Crisis for Higher Education. NACTA Journal, 15(3), 72–74. http://www.jstor.org/stable/43762656

[4] Levecque, K., Anseel, F., De Beuckelaer, A., Van der Heyden, J., and Gisle, L. Work organization and mental health problems in PhD students, Research Policy, Volume 46, Issue 4, 2017, Pages 868-879, https://doi.org/10.1016/j.respol.2017.02.008.

[5] Council of Graduate Schools & the Jed Foundation. *Supporting Graduate Student Mental Health and Well-being* (CGS, 2021). https://legacy.cgsnet.org/ckfinder/userfiles/files/CGS_Well-being%20ConsultPaper%20Lee.pdf

[6] Langin, K. (2020) Amid Pandemic, U.S. Faculty Job Openings Plummet. *Science* https://www.science.org/content/article/amid-pandemic-us-faculty-job-openings-plummet. 10.1126/science.caredit.abf1379

[7] American Academy of Arts and Sciences, State of the Humanities 2022: From Graduate Education to the Workforce (Cambridge, Mass.: American Academy of Arts and Sciences, 2022). https://www.amacad.org/publication/humanities-graduate-education-workforce

[8] Xue, Y. and Larson, R. C. "STEM crisis or STEM surplus? Yes and yes," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, May 2015, https://doi.org/10.21916/mlr.2015.14

[9] National Center for Science and Engineering Statistics (NCSES). 2023. *Survey of Doctorate Recipients, 2021.* NSF 23-319. Alexandria, VA: National Science Foundation. https://ncses.nsf.gov/pubs/nsf23319.

[10] Langin, K. (2019) In a First, U.S. Private Sector Employs As Many Ph.D.s as Schools Do. *Science* https://www.science.org/content/article/first-us-private-sector-employs-nearly-many-phds-schools-do (doi: 10.1126/science.caredit.aax3138)

secured an academic employment offer had declined a startling 3.7% over the previous year, while the fraction with job offers in the private sector had increased by 4.4%.[11] While we welcome the broader use of their skills, we must nevertheless acknowledge that their career opportunities are changing that graduate students and the academy have yet to fully embrace.

1.2 Challenges and opportunities for UC's PhD and MFA programs

The University of California, as an institution, is a highly interconnected ecosystem. Each of its constituencies – undergraduate students, graduate students, staff, faculty, and other academic employees – must be able to thrive if we are to deliver high-quality educational experiences and create the new knowledge that will address society's biggest challenges. In the context of UC graduate programs, we consider the following factors to be intrinsic to their quality and effectiveness:

- positive program climates, including both structural and cultural issues;
- supportive mentoring and advising;
- appropriate time-to-degree norms, and high degree completion rates within these times;
- broad opportunities to prepare for careers in teaching, research, and other intellectually demanding endeavors;
- competitive funding packages that attract the best students nationwide to UC PhD/MFA programs;
- strong employment records for UC's PhD/MFA graduates in academia, the private sector, and non-profit and governmental agencies.

All UC graduate programs face challenges in achieving at least some of these goals. Furthermore, the challenges intersect. For example, weak alumni outcomes may be a function of the job market in a given field, insufficient mentoring, and/or a problematic climate. Likewise, program climate data suggest that impacts may be distributed unevenly within programs and across campuses, with minoritized students sometimes reporting more concerns about climate than those students more traditionally well-served by educational institutions.

We have now arrived at a pivotal and historic moment in graduate education. Across the UC system, we have committed to significant changes in the way we interact with, and support, our graduate students, due in part to the recently concluded bargaining agreements with our teaching assistants and our newly represented graduate student researchers. Our current understanding of the educational, emotional, and professional needs of our students obliges us to reassess our graduate programs and be willing to redesign them where appropriate to better prepare our students for the types of careers they will create as they forge their paths in the world, and change the world in doing so.

1.3 Principles and values guiding this Workgroup's deliberations

Despite the multiple stress points apparent in our system, we assert that *many aspects of PhD and MFA education at the University of California work well and should be preserved*. Many of our graduate programs are ranked among the best in the country and are highly desirable to students seeking advanced degrees. Approximately 72% of UC's PhD students complete their degrees within 10 years, which is much higher than the national average (57%). Our MFA completion rates are nearly 84% at 3 years and rise to above 94% at 5 years. Averaged across the entire UC system, we offer more graduate housing per capita than any other research university in the country. Nevertheless, we must examine existing models for PhD/MFA education and, where appropriate, invent new models that are better suited than traditional apprenticeships to the needs of our current and future graduate students.

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[11] Heuer, R., Einaudi, P., and Kang, K. *Research Doctorate Conferrals Rebound, Leading to Record Number of U.S. Doctorate Recipients in 2022.* NSF 23-353. National Center for Science and Engineering Statistics (NCSES). 2023. Alexandria, VA: National Science Foundation. https://ncses.nsf.gov/pubs/nsf23353/

Through our status as federally designated minority-serving institutions, our unique contribution to the advancement of scholarly knowledge in California and in the world, and our systemwide capacity for and track record in PhD/MFA education, we believe that *the University of California is uniquely positioned to transform both the professoriate and the intellectual leadership for the state and the nation*, making it more diverse, equitable, and inclusive. The UC is educating an increasingly diverse population of PhD/MFA students, including large numbers of first generation and parenting students. We must think creatively about all pathways into and out of PhD/MFA education, including recruiting and career objectives.

Finally, we affirm that *we value our PhD and MFA students as students, first and foremost.* Consequently, each PhD/MFA student admitted to the UC should be adequately supported, in terms of student advising, student services, staff support, funding, and other needs, for the normative period required to attain the degree objective. The academic goals of the students and their programs should determine our PhD/MFA enrollments, rather than the University's needs for undergraduate pedagogy, its research enterprise, and other core missions.

1.4 Objectives for this interim report
This Academic Planning Council (APC) Workgroup seeks to initiate conversations across the UC system that would, in turn, spur a radical rethinking of PhD/MFA education (see Appendix 2 for the summary of our Charge).[12] The Workgroup consulted several times with leaders of campus-based task forces formed to address the new challenges in PhD/MFA education, and had access to guidance in the APC's 2019 Report on Doctoral Education (Appendix 4, which itself refers to the reports of five previous UC workgroup and task force reports on similar topics delivered since 2000), the 2021, 2022, and 2023 reports from UC Irvine and UC Santa Cruz on Graduate Education (Appendices 5 and 6), and recommendations from Academic Senate's Coordinating Committee on Graduate Affairs (CCGA) regarding independent study courses (Appendix 7).

Three areas of concern that appear in the Workgroup's charge summarize the most pragmatic and urgent concerns of the Faculty. These three areas were selected for the group to address, at least in part, by the start of the Fall 2023 term. They can be summarized as:
1. *Clearly define academic expectations*, specifically, as distinct from expectations and evaluations for GSR employees whose work has traditionally overlapped significantly with their efforts to make progress towards their academic goals.
2. *Provide stable and competitive financial support*, taking into account UC's budgetary challenges and long-term as well as newly accelerating trends in increased costs related to the education of PhD/MFA students.
3. *Actively manage PhD and MFA enrollments*, in response to local and national trends in professional opportunities, pedagogical changes, and resource constraints of the University.

The following section contains brief descriptions of the Workgroup's considerations in each of these areas, as well as a set of actionable recommendations targeted variously to the University, its campuses, colleges and schools, programs, and individual faculty advisors of PhD/MFA students.

2. Interim findings
2.1. Clearly define academic expectations
The Faculty of the University of California, as well as its staff and administrators, are committed to preserving and enhancing the core values and traditions that define excellent research universities, which include the education of PhD/MFA students. To achieve our academic mission, we must clearly articulate our academic expectations for PhD/MFA students, distinct from our expectations related to any other relationship they might have with the university. *Academic progress must always be measured according*

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[12] Our processes and procedures to-date are described in more detail in Appendix 3.

to academic standards. While a graduate student might apply the skills and knowledge they acquire in the course of their employment - whether inside or outside the university - to their academic objectives, their academic progress is not predicated on any such employment. The Workgroup's recommendations in this area aim to assist faculty in delineating academic expectations distinct from requirements related to GSR employment. Furthermore, we expect the effort involved in better articulating and formalizing our academic expectations to help us to improve academic outcomes.

The Faculty of the University of California's Academic Senate are empowered by the Regents to oversee academic matters of central importance to the University. Faculty determine academic policy, set conditions for admission and the granting of degrees, authorize and supervise courses and curricula, and set professional standards relevant to the academic mission. Faculty collectively and individually have the authority to require, assess, and judge academic outcomes, and to assess progress toward academic degrees. They must do so for all graded activities in the University, consistent with the policies and procedures of the Academic Senate. In other words, when faculty award academic credit (*e.g.,* course grades, passing an exam, defending a thesis or dissertation), they have the right and the responsibility to establish the criteria by which academic progress is assessed and then to evaluate all students and academic progress using those standards.

Our traditions, models, and practices at both the undergraduate and graduate levels provide the basis for our expectations for PhD and MFA students. UC faculty have already invested considerable time and effort in similar tasks (*e.g.,* delineating and assessing learning outcomes for undergraduate courses and programs in the context of accreditation requirements). Extending this effort to the independent study courses that are at the core of our PhD/MFA programs will require resourcefulness, creativity, and a willingness to defend academic principles.

Departments that enroll graduate students and individual faculty members who advise them must consider the following key questions:
- For each activity worthy of academic credit, what are the learning outcomes (*e.g.,* how to conduct research, work in collaboration with other experts, understand professional standards, design experiments or studies, etc.) that prepare graduate students to become independent scholars, scientists, engineers, or artists?
- How are graduate students assessed in terms of their academic progress and the value of their original discoveries and contributions to knowledge or their field?
- What milestones or metrics must students achieve to demonstrate adequate progress toward these learning outcomes and degree objectives?

The first part of the Workgroup's answers to these questions are found in a recent recommendation from the Academic Senate's Coordinating Committee on Graduate Affairs (CCGA) (Appendix 7): "At the beginning of each term, faculty should clearly describe to their graduate students the expectations for their academic progress, as distinct from the expectations for their employment." They are further articulated in the August 11, 2023 memo from this Workgroup on academic expectations (Appendix 8). It notes that "academic expectations are defined by progress toward the dissertation or final thesis project, including through a collection of intermediate goals and learning outcomes."

Overall, we must engage in a collective effort, both system-wide and campus-wide, to clearly define academic effort for our PhD and MFA programs, while respecting the needs and traditions of individual fields and disciplines. This effort will require a balance between providing models and guidance documents for campuses, departments, individual faculty, and graduate students themselves, and acknowledging and honoring the highly individualized journey that each PhD/MFA student undertakes towards discovery and mastery. Embracing this opportunity will assist the Faculty in asserting the intrinsic and essential value of graduate education at the University of California, while adapting our practices, policies, and cultures to optimize outcomes. Although policies and procedures will undoubtedly continue to evolve with the

University's mission, the current focus is an opportunity to start a broader discussion of the merits, concerns, and pedagogical considerations for UC's PhD/MFA programs as part of our broader academic mission to educate scholars, scientists, artists, and leaders of the future.

Actionable recommendations
1. **Generate syllabi and/or sets of expectations for learning outcomes for all means by which graduate students earn academic credit; clearly articulate and disseminate the academic criteria by which each student will be graded.** Graduate students are, by definition, scholars in training. This education takes place both in their formal coursework and in all scholarly efforts they undertake, whether paid or not, including but not limited to courses that teach them to conduct research and those that teach them to teach. Through formal annual reviews, course grades, and informal feedback, students should be measured and informed of their progress by their faculty advisor(s), dissertation committee, and other faculty members and the administration. In this context, faculty must delineate and communicate the nature of academic credit, in particular, what constitutes original and significant scholarly contributions worthy of being awarded an advanced degree.
2. **Create a resource bank with sample syllabi and templates that can be adapted based on discipline, project, student, or other specific details.** Individual faculty have the authority to establish the goals and expectations appropriate for the syllabi in their directed studies courses, adapted to the context of their fields and disciplines. However, academic outcomes will be better supported if the UC system, disciplinary groups within the system, and individual campuses articulate core principles and share resources and common templates to ease the burden on faculty of creating and using new, more detailed assessment practices.
3. **Explicitly acknowledge, incentivize, and reward faculty efforts in training and mentoring graduate students, via the Academic Personnel merit and review process.** Considerable additional effort will be required of faculty to create and continually update personalized academic expectations, via syllabi and other mechanisms. The added workload comes at an inopportune time, when faculty are being asked to compete for more extramural funding to support graduate students, and to manage increasing compliance burden in many aspects of their activities, often with limited or no staff support. However, APM 210-1.d.1 already recognizes "general guidance, mentoring, and advising of students; effectiveness in creating an academic environment that is open and encouraging to all students, including development of particularly effective strategies for the educational advancement of students in various underrepresented groups." This section of the APM can be interpreted to include the new expectations of faculty in describing and assessing graduate academic work.

2.2 Provide stable and competitive financial support
According to the US Census Bureau, in 2018, the fraction of the US population aged 25 or older with a doctoral (not professional) degree was 2.0%, compared to 22% who hold Bachelor's degrees.[13] These figures mean that, both nationally and in California, public interest in doctoral research programs is understandably not as deep as interest in undergraduate education, and public understanding of how graduate students are supported is limited. Few people know the full costs of the training of PhD/MFA students in university resources (*e.g.,* fellowship stipends, employment, infrastructure, faculty time in mentoring, supplemental services).

Traditional sources of funds that support PhD/MFA students include instructional budgets (state funds), extramural support in the form of research grants (usually awarded on a competitive basis to faculty who allocate a portion of these funds to support graduate student researchers) and fellowships (usually awarded directly to students), and philanthropic support (which in turn manifests as fellowships, research funding, and other types of support). These sources have not expanded sufficiently over time to meet the needs of

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[13] U.S. Census Bureau, Educational Attainment in the United States: 2018, based on data from the Current Population Survey Annual Social and Economic Supplement.

our current students, *i.e.*, revenues have not kept pace with the rising costs of conducting research and training PhD/MFA students. Consequently, funding models for PhD/MFA students are now under intense stress. In the short-term (*i.e.,* the next two fiscal years), the substantial cost increases arising from recently negotiated pay raises and new benefits will have to be addressed by shifting funds from other budgeted University activities and/or by mobilizing reserves and carry-forward funding. In the intermediate-term (next 2-3 fiscal years) and for the longer term (3+ fiscal years), the University must look for and acquire new financial resources.

In this context, the University of California urgently needs to create sustainable models to fund its world-class graduate education programs. In considering how best to accomplish this goal, the Workgroup was guided by two foundational questions:
- What kinds and levels of financial support are necessary to recruit the best PhD/MFA students and faculty, and to provide them with the broadest opportunities for scholarship, inquiry, and creative expression at the highest levels of performance and impact?
- How can the University establish and sustain the funding base needed to ensure stable support for its research mission and the PhD/MFA students who contribute to it?

In seeking new sources of revenue to support our graduate students, we must begin to educate the public comprehensively about the impact in California of graduate education broadly, and PhD/MFA education specifically, to increase public funding. In addition, campuses will need to support efforts of individual faculty and programs more broadly to increase the level of extramural funding by providing new incentives, providing more cost sharing, and rethinking formulas for the distribution of sponsored research recovery costs, while simultaneously making the case with state and federal governments to provide our funding agencies with more resources. Meeting the challenge of identifying enough support for this part of the University's mission may also require radical new ideas like the reallocation of systemwide set-asides, as well as investment and endowment income.

Across the UC system, we will need many more graduate student research fellowships and training grants. The relatively weak incentives for submitting applications may have led to relatively low numbers of such fellowships and grants than they could be on many of our campuses. Looking ahead, changes in GSR cost structures may further limit graduate student interest in applying for fellowships, as well as faculty interest in submitting training grant proposals. Specifically, our campus-wide funding guarantees as well as fellowships that fund students at rates lower than the new employment contracts reduce incentives for students to compete for extramural funding. At the same time, the substantial gap between upper limits on stipends provided by training grants and system-wide pay rates create unfunded liabilities for individual PIs, who already receive little benefit for leading training grant projects. Campus-level Graduate Divisions, Offices of Research, and Provosts' Offices will need to better support and incentivize their graduate students to prepare fellowship proposals (with the added benefit of providing valuable professional training), and their faculty to prepare training grant proposals.

Donors and the private sector may be recruited to create substantial endowments for graduate fellowships. Such efforts are already underway at some UC campuses, as well as other peer institutions. Creative mechanisms may include matching programs, and requirements that new endowed faculty chair positions include a component for graduate student support. We note our concern, however, that such strategies may become more challenging in the future, due to new and complex requirements that we will encounter fellowship and employment funding for graduate students are intermingled.

In addition to raising considerably more funds, we must explore decreasing time-to-degree as a mechanism to reduce costs, with the expected benefit of improving student experiences. When funding is clearly aligned with academic progress, there is some limited evidence from internal data that graduate students tend to have shorter times-to-degree and higher levels of satisfaction with their time in graduate school. These

associations must be evaluated more rigorously to understand where students and the University will receive the most return from their substantial investments of both time and money. Most PhD and MFA students in the UC system already receive at least some funding support not connected to their employment (*e.g.,* fellowships, either from internal Block grants and other sources or from extramural opportunities). Many students also receive multiple years of funding via GSR appointments closely related to their thesis topic, particularly in STEM fields. This funding, which is tightly tied to their academic progress, may contribute to the relatively shorter times to degree observed in STEM programs. Wherever possible, training should be reconfigured to prioritize activities that align funding with academic progress, with these approaches being rigorously assessed as part of our reforms.

Actionable recommendations
1. **Initiate a comprehensive effort to make the impact of graduate education more visible.** UCOP, the ten UC campuses, and their individual schools and colleges, should all emphasize the wide-ranging contributions of graduate education to the research and business climate of the state, with a view to expanding both public and private support for this aspect of our mission. A systemwide effort could include presenting PhD/MFA education as a central component of our activities in all outward-facing reports and presentations. Campus leaders can contribute by featuring their PhD/MFA programs in their presentations to Regents, potential donors, industry, and the general public. The new UC Center Sacramento offers a prime venue and opportunity to showcase the successes of our PhD/MFA programs and students to our legislators, and more broadly to the public.
2. **Avail ourselves expeditiously of all possible paths to more graduate student housing.** A critical component of graduate student support packages is affordable housing. Its off-campus cost and limited on-campus availability for many UC campuses are major factors motivating graduate student dissatisfaction with our current financial support models, and they limit our ability to compete for PhD/MFA student talent with universities located in lower-cost areas. While outside the purview and expertise of this Workgroup, some solutions may include low-cost construction financing through state and other programs, working with the state Legislature to overcome regulatory issues, purchasing housing stock in the private market, etc.
3. **Work towards a minimum level of guaranteed support for all admitted PhD and MFA students in good academic standing**. Addressing the financial needs of graduate students will provide stability that will mitigate growing mental health concerns. Unfortunately, not every campus nor every discipline is currently in a financial position to guarantee funding for all graduate students for the full duration of normative time-to-degree. Furthermore, funding guarantees may limit incentives to seek fellowships (as described above) and may require mixing of fellowship and employment offers in ways that could be complicated in light of the new labor contracts.
4. **Incentivize faster academic progress towards graduate degrees.** Regular (*i.e.*, at least annual) formal meetings of graduate students with their dissertation committees will help achieve timely identification of graduate students who are struggling with their academic goals, need to switch advisors, and/or are unlikely to complete their original degree objectives. Programs should create accessible and desirable off-ramps for PhD/MFA students, including mechanisms to switch advisors, degree goals, or even fields. Faculty mentoring contributions should acknowledge graduate student success beyond PhD/MFA programs, including MA/MS programs, and placement in a range of occupations beyond academia.
5. **Reduce the extent of coupling between our PhD/MFA training mission and our parallel missions in research and undergraduate education.** For many years, the tripartite UC missions have been highly integrated: the training of PhD/MFA students was largely paid for by conducting the research and undergraduate teaching missions, which in turn were largely served by the employment of PhD/MFA students. From a budgetary standpoint, such close coupling may not be the best approach going forward, although some amount of such employment often has educational benefits for both the graduate students and the University. Going forward, we must strive to strike a new balance by

considering the value of each of these activities separately, then evaluating the collective cost-benefit tradeoffs as follows:

    a. Undergraduate teaching needs should be met with the highest quality and most efficient resources available, which may include a mix of tutors, near-peer learning assistants, readers, teaching assistants, full-time lecturers, and faculty.

    b. Research must be conducted with the highest quality and most efficient resources available, which may include a mix of graduate students, postdoctoral scholars, research professionals, and faculty.

    c. The UC should admit only as many PhD and MFA students as we have sufficient resources to educate and train, and who have a reasonable expectation of a career that makes appropriate use of their advanced degree.

6. **Continually assess the impact of evolving funding models.** It makes sense for UC to deploy its limited resources for graduate student support where they will provide the best return on student experience and academic progress. The approaches may vary by discipline and by campus, and may include greater fellowship support as well as other funding mechanisms well-suited to accelerate academic progress, such as increased summer support and incentives for timely graduation. As these and other approaches are piloted, outcomes must be assessed and analyzed to ensure that cost savings resulting from improved academic outcomes (*e.g.*, decreased time-to-degree) are commensurate with the investments made.

2.3 Actively manage our PhD and MFA enrollments

Purposefully managing the enrollments in our PhD and MFA programs will entail program and budget planning, candidate selection and recruitment, and holistic monitoring of degree completion and placement at each campus and for each individual school, department, and program therein. Going forward, we must fortify our highest-performing programs and address challenges in lower-performing counterparts, while setting clear expectations for all programs.

Maintaining thriving graduate programs requires faculty incentives to be closely aligned with the needs and roles of PhD/MFA students in advancing the research mission of the University. Current faculty incentives include positive tenure and promotion outcomes that are associated with supervising and mentoring PhD/MFA students, expanded research productivity through the contributions of PhD/MFA students, and opportunities to teach smaller, highly specialized graduate-level classes in addition to undergraduate classes that are typically much larger and less specialized. Faculty, their campuses, and the UC as a whole, also benefit from the association of PhD/MFA education with the ability to shape the future directions of their fields, and to excel in measures of reputational excellence and program quality rankings. Changes to our enrollment management practices incur potential risks to these benefits, and must be considered carefully within the national context.

In reflecting on core principles for enrollment management in PhD and MFA programs, and how PhD/MFA enrollment decisions should be determined, we asked:

- How can we ensure that PhD/MFA enrollments reflect and respond to the fundamental budgetary realities of each department or program, to ensure that PhD/MFA students have consistent financial support for the duration of their normative degree requirements while emphasizing their academic progress?
- How can faculty and administrators maximize the potential of their PhD/MFA students through comprehensive advising and multi-faceted mentoring, as well as support of student career preparation and overall student well-being?
- How can we ensure that the UC continues to produce the next generation of professors, entrepreneurs, and leaders?
- How does enrollment management intersect with career placement and pathways in the broadest sense, including both academic and non-academic careers?

The effectiveness of enrollment management is also predicated on timely assessment. Metrics and measurement in each phase of PhD/MFA education requires both the UC system and individual campuses to gather and disseminate data in the following areas: program size and cost, diversity and inclusion, student success and satisfaction, and career placement. Readily measured benchmarks are needed, by discipline, campus, and, where appropriate, for the UC system as a while. Possible benchmarks might include:

- achieving an eight-year graduation rate of at least 80% for admitted PhD students;
- for graduate students who exit our PhD programs, ensuring that the vast majority (*e.g.,* 90%) of those eligible to do so leave with a MS/MA degree instead;
- increasing graduate enrollments by UC undergraduates and students from California State University, Historically Black Colleges and Universities, Hispanic Serving Institutions and Tribal Colleges and Universities, in line with the UC Growing Our Own effort; and
- both for those who earn a PhD, and those who exit the program with another degree, ensuring that most alumni are employed in positions that require or benefit from the training for their degree.

Data analysis of key issues will require metrics that are still being developed, for example, the relationship between program cost and market demand for graduates with that training. UC could also develop a graduate student satisfaction index to measure student experiences and make targeted investments in support of belonging, equity, and health promotion measures. Components could include exit surveys, alumni surveys, the UC Graduate Student Experience Survey (UCGSES), and Individual Development Plans. For such measurements to be effective, program funding support and other resources/incentives will need to respond to them, while mitigating the impact of year-to-year fluctuations.

We encourage reflection on mechanisms for sustaining excellence in our scholarly communities and making academic contributions beyond the traditional model of a PhD/MFA program housed in a single department, school, or campus, and making better use of our strengths as a system of ten campuses. Finally, while beyond the scope of this Workgroup's charge, approaches to enrollment management for graduate education broadly must consider the roles of each type of degree in the ecosystem, including not only the PhD/MFA degree programs that are the core of this report, but also academic research Masters' and professional graduate degree programs.

Actionable recommendations
1. **Manage admissions and yield more intentionally.** The campuses must provide support for program-level budget planning, projections of future costs and likely graduations, and other tools to support each graduate program in making informed decisions about how many PhD/MFA students to admit each year. Metrics and benchmarks, including those related to diversity and inclusion, degree completion, and placement, should be used to measure progress and support campus and program leadership in decisions about admissions allocations.
2. **Reduce the average time-to-degree.** Although 72% of UC's enrolled PhD students complete their degrees within 10 years, far exceeding the national average of 57%, this metric can and should be improved. Processes must be developed to collect data and communicate an array of concrete suggestions for reducing time-to-degree, across campuses, disciplines, and the system. The UC and its campuses should incentivize initiatives that improve timely degree completion, including but not limited to changes in funding models, curricular requirements, and mentoring support.
3. **Assist graduate programs in collecting and disseminating placement data**. More data regarding post-graduation placements and greater transparency of this data will help prospective students to make informed decisions about the graduate programs they want to join. It will also assist in the use of placements as an element in admissions planning and enrollment management.

3. On-going issues

During this Workgroup's initial deliberations on the future of PhD/MFA education across the University of California, many difficult questions emerged. Some of them prepare us for the discussions that we intend to have in the second phase of our work. However, many of these questions involve issues that cannot be resolved by the Workgroup in isolation. We intend to use the systemwide Congress on Graduate Education planned for October 9, 2023 as one opportunity for broader consultation, and to continue our discussions with campus-based taskforces looking at the future of graduate education. In this section, we summarize some of the questions related to our three initial areas of inquiry that remain unanswered at this time.

3.1 Academic considerations

In many STEM disciplines, extramural grants are awarded specifically for the accomplishment of academic goals and objectives. In some cases, graduate fellowships (*e.g.,* NSF GRFP) are explicitly designated by the agency to support the student's academic progress. In both such cases, students supported by these grants and fellowships are generally included in the new bargaining unit. Drawing clear distinctions between academic progress and for-pay activities is and will remain incredibly difficult for faculty advisors and PIs in these situations. We continue to reflect on:

A. How will faculty PIs effectively distinguish academic goals and objectives from the employment tasks and duties of graduate student researchers (GSRs), particularly when the expectations associated with extramural funding do not clearly align with such distinctions?
B. In complicated overlapping cases, how should faculty advisors and PIs determine and deploy the appropriate mechanism(s) for addressing unsatisfactory performance/progress, as an academic issue, an employment issue, or both?

3.2 Budgetary considerations

The current "compact" between the Governor of California and the UC provides some budgetary relief for the UC system's rising costs. However, the additional funds are mostly already committed to enhancing undergraduate education. Consequently, the available resources are nowhere near the level required to stabilize our overall financial model and ensure sufficient funding of our PhD/MFA programs at the level required for their current size and quality. These budgetary realities raise both pragmatic and philosophical questions about the future of funding for graduate education. We continue to reflect on:

A. What major new sources of funding for graduate education are realistically available to (or could be accessed by) each UC campus in the near, medium and longer terms?
B. Should we reallocate significant UC resources to funding that is aligned with graduate student academic progress? If yes, which major existing commitments will we abandon to make this possible, and how will we justify this realignment?
C. How will we explain (*e.g.,* to the public and to the California legislature) a commitment to full funding of PhD/MFA students, even as costs continue to rise for other types of UC students that we do not fully fund (*e.g.,* undergraduate, masters, professional)?
D. As we partially decouple graduate student funding from undergraduate teaching needs, how will models and budgets for undergraduate teaching accommodate these changes?
E. As we to partially decouple graduate student funding from faculty research needs, how will models and budgets for conducting research adapt?

3.3 Enrollment considerations

Traditionally, PhD/MFA enrollment has been largely decentralized, and is often driven by the preferences and/or idiosyncratic needs of individual faculty. In an environment that requires more intentional enrollment management, changes to culture, processes, and norms will be required to address the larger goals of the institution (*e.g.,* high quality programs, diversity of the student body, and broad access). Making these changes will require difficult decisions by individual faculty, Senate leaders, and administrators across the system, as well department- and discipline-specific discussions. We continue to reflect on:

A. How might we increase access to the highest levels of education, even as total graduate enrollment is likely to decrease in the face of intense budget pressures?
B. How do we ensure the continued quality of our research and undergraduate teaching missions as graduate enrollments change, particularly in the most vulnerable disciplines?
C. How should we manage, rethink, or reconfigure small graduate programs that may not be viable in the face of further enrollment compression?

4. Looking ahead

While we have begun to address the most urgent needs related to UC PhD/MFA programs with the recommendations outlined in section 2 above, we recognize that our recommendations are assuredly incomplete. In places, they simply raise more questions, not only about implementation at the campus and program levels, but also more broadly about how they will reverberate across higher education nationally. The full impacts of even seemingly straightforward actions such as a more rigid separation of academic expectations from employment, changes to our budgets and financial models, and purposeful management of PhD/MFA enrollments, will be known only many years after their implementation. We recommend that UCOP and the Academic Senate work together to assume the monitoring and assessment of these changes to ensure that the quality of the UC is not degraded, and that graduate education continues to thrive in response to these adjustments.

Our assessment of the future of PhD/MFA education remains incomplete without a close look at the pedagogical approaches and structures of our PhD/MFA programs, the mentoring provided by the faculty (and, in some cases, post-doctoral scholars and staff), and the career trajectories of our students in these programs. In addition to continuing our work related to our first three areas of concern, we expect this Workgroup to address these and other issues mentioned in the remaining parts of our initial charge during the 2023-2024 academic year. The issues include:
1. developing and refining new pedagogical models to achieve PhD/MFA educational goals;
2. designing programs and degree requirements for graduate student success at the highest levels of scholarship;
3. enhancing and incentivizing the mentoring of graduate students;
4. ensuring that our PhD students (and alumni) are well-prepared for a variety of careers, in academia but also in the public and private sectors.

We expect our upcoming discussions to be less tactical than those we have undertaken so far, but perhaps more far-reaching since they raise major questions about the goals and needs of PhD/MFA education broadly. The University of California has the opportunity and the responsibility to lead the nation in these discussions, and we hope our current and future recommendations will play a role in transforming graduate education on our campuses as well as nationwide.

Appendixes

Appendix 1: Membership of this APC Workgroup

Co-Chairs		
Susannah Scott	Chair of the Santa Barbara Division of the UC Academic Senate, 2020-2024 Duncan and Suzanne Mellichamp Professor of Sustainable Catalysis Distinguished Professor of Chemical Engineering, and Chemistry & Biochemistry	UC Santa Barbara
Gillian Hayes	Vice Provost for Graduate Education Dean of the Graduate Division Robert A. and Barbara L. Kleist Professor of Informatics	UC Irvine
Members		
Nicquet Blake	Vice Provost of Student Academic Affairs Dean of the Graduate Division	UC San Francisco
Jennifer Burney	Chair of the Committee on Affirmative Action, Diversity, and Equity (UCAADE) of the UC Academic Senate, 2022-2024 Marshall Saunders Chancellor's Professor in Global Climate Policy and Research	UC San Diego
Lisa García-Bedolla	Vice Provost for Graduate Education Dean of the Graduate Division Professor of Education	UC Berkeley
Richard Hughey	Vice Provost and Dean of Undergraduate Education and Global Engagement Professor of Computer Science and Engineering, and Biomolecular Engineering	UC Santa Cruz
Jill Huynh	PhD Candidate	UC Davis
Erith Jaffe-Berg	Chair of the Coordinating Committee on Graduate Affairs (CCGA) of the UC Academic Senate, 2022-2023 Professor of Theatre	UC Riverside
Andrea Kasko	Professor of Bioengineering Chair-Elect of the UCLA Division of the UC Academic Senate, 2022-2023 Past Chair of the Coordinating Committee on Graduate Affairs (CCGA) of the UC Academic Senate, 2021-2022	UCLA
Patricia LiWang	Chair of the Merced Division of the UC Academic Senate, 2022-2024 Professor of Molecular & Cell Biology	UC Merced

Members, continued		
David Marshall	Provost and Executive Vice Chancellor	UC Santa Barbara

Cynthia Schuman	Chair of the University Committee on Research Policy (UCORP) of the UC Academic Senate, 2022-2024 Professor of Psychiatry and Behavioral Sciences	UC Davis
Donald Senear	Chair of the University Committee on Planning and Budget (UCPB) of the UC Academic Senate, 2022-2024 Emeritus Professor of Molecular Biology and Biochemistry	UC Irvine
Elizabeth Simmons	Provost and Executive Vice Chancellor	UC San Diego
Mary Ann Smart	Chair of the Berkeley Division of the UC Academic Senate, 2022-2023 Gladyce Arata Terrill Professor of Music	UC Berkeley
Rodolfo Torres	Vice Chancellor for Research and Economic Development Distinguished Professor of Mathematics	UC Riverside
Douglas Haynes	Vice Provost for Academic Personnel and Programs Professor of History	UC Office of the President UC Irvine
Consultants		
Pamela Brown	Vice President for Institutional Research and Academic Planning	UC Office of the President
Todd Greenspan	Executive Advisor for Academic Planning and Policy Development, Institutional Research and Academic Planning	UC Office of the President
Pamela D. Jennings	Executive Director of Graduate Studies	UC Office of the President
Stefani Leto	Principal Policy Analyst, UC Academic Senate	UC Office of the President
Monica Lin	Executive Director of the UC Academic Senate	UC Office of the President
Allison Woodall	Deputy General Counsel	UC Office of the President

Appendix 2: Charge to the Joint Senate-Administration Workgroup on the Future of Doctoral Programs at UC

Joint Senate-Administration Workgroup on the Future of Doctoral Programs at UC

Background

California's Master Plan for Higher Education gives the University of California the responsibility of enrolling and preparing graduate academic and professional students to help meet the needs of California and the nation and to further the UC mission of teaching, research, and public service. According to the 2022 UC Accountability Report *"UC's goals for graduate education are to offer outstanding degree programs, advance research, support undergraduate instruction, and prepare students to join a professional workforce or innovate on behalf of it."*

Because UC produces the leaders of the future, the university is a global beacon for discovery, innovation, and creativity. In advancing this enduring mission on behalf of the state, nation, and world, UC graduate education also "allows California to grow, create jobs, drive industry, tackle unique challenges facing the state, and help improve the everyday lives of its inhabitants."

Academic doctoral degree programs lie at the heart of the UC graduate education mission and UC's doctoral programs rank among the best in the world. UC offers nearly 500 doctoral degree programs across all 10 campuses and across all major fields of study. In 2021, over 28,000 students were enrolled in doctoral degree programs at UC and nearly 4,000 doctoral degrees are awarded each year. Over 25% of UC domestic doctoral degree students are from historically underrepresented groups, a percentage share that has increased every year since 2001 but lags behind the diversity of UC's undergraduate student population.

The average time to doctoral degree was 6.0 elapsed years for the most recent cohorts. The eight-year, and 10-year, doctoral degree completion rates were 68% and 72%, respectively.

Workgroup charge

Building upon past recommendations on graduation education, including the 2019 Academic Planning Council Graduate Education Workgroup *Recommendations for Greater Support of Doctoral Education*, data and information on the current and projected demand for Ph.D. recipients, the current and projected fiscal climate in California, and the evaluation of a graduate funding model that is comprised of student financial support and part-time employment, the workgroup will consider whether, and how, the current goals of UC doctoral programs could evolve to support UCs mission. The workgroup will consider what needs to be retained in the current mode of doctoral education and what, if anything, needs to change in order to sustain the commitment to the University's tripartite mission of instruction, research, and service.

To help conduct its work, the workgroup will use existing University data sources, including but not limited to doctoral program application, admissions, enrollment, and completion trends and projections. The workgroup will also identify data gaps. The workgroup may also consult with campus workgroups that are currently convening to also address these issues in their local context to identify best practices and innovations that might be of benefit systemwide.

We ask that the workgroup plan for sharing preliminary recommendations with the APC by the end of October, 2023 and a final report by June, 2024.

Questions for the workgroup to consider:

1. How, if at all, should the current model of academic doctoral program training change to serve the research needs of the university while also meeting the projected demand for PhDs in academic and professional fields?
2. What kinds of degree requirements and program design best foster scholarship and high levels of accomplishment for doctoral students?
3. How could targets for graduate student enrollment be set to maximize benefits for both the core missions of the UC and its graduates and California's workforce development needs? What is the appropriate relationship between admission targets in graduate programs and departmental placement records as well as projections of demand for doctoral recipients?
4. How might we better prepare our graduate students for both academic and non-academic careers?
5. What would be the cost of maintaining the current model of graduate training and funding? Are there opportunities to reduce costs associated with academic doctoral training? These opportunities might include changes in curriculum and training sequences, reduction of time to degree, and identifying optimal modes of student support for academic progress.
6. What are the principles defining skillsets and work that principally contribute to a student's academic progress and professional training? What opportunities exist to more clearly delineate between work for hire and academic progress and professional training?
7. How can we enhance and strengthen the faculty-student mentoring relationship?
8. Are there new models of pedagogy that should support academic doctoral training? If so, what are these and how do they provide this support?

PROPOSED MEMBERSHIP:

Academic Senate:
1. Erith Jaffe-Berg, Chair of CCGA (Riverside)
2. Donald Senear, Chair of UCPB (Irvine)
3. Cynthia Schumann, Chair of UCORP (Davis)
4. Jennifer Burney, Vice Chair of UCAADE (San Diego)
5. Susannah Scott, Division Chair (Santa Barbara) – *Co-Chair of Workgroup*
6. Mary Ann Smart, Division Chair (Berkeley)
7. Patricia LiWang, Division Chair (Merced)
8. Andrea Kasko, immediate past Chair of CCGA (Los Angeles)

Administration:
1. Elizabeth Simmons, EVCP (San Diego)
2. David Marshall, EVCP (Santa Barbara)
3. Lisa García Bedolla, Vice Provost and Graduate Dean (Berkeley)
4. Gillian Hayes, Vice Provost for Graduate Education and Dean of the Graduate Division (Irvine) – *Co-Chair of Workgroup*
5. Rodolfo Torres, Vice Chancellor for Research and Economic Development (Riverside)
6. Richard Hughey, Vice Provost and Dean of Undergraduate Education and Global Engagement (Santa Cruz)
7. Nicquet Blake, Dean of the Graduate Division and Vice Provost for Student Academic Affairs (San Francisco)
8. Doug Haynes, Vice Provost for Academic Personnel and Programs, UCOP

Workgroup Advisor:

      Allison Woodall, UC Legal

Student Representative:

      Jill Huynh, UC Davis, School of Education, Ph.D. program

Workgroup Staff:

1. Pamela Brown, Vice President, IRAP (UCOP)
2. Pamela Jennings, Executive Director, Graduate Studies (UCOP)
3. Monica Lin, Executive Director (Academic Senate)
4. Stefani Leto, Principal Committee Analyst (Academic Senate)
5. Todd Greenspan, Executive Advisor, IRAP (UCOP)

Appendix 3: Processes and Procedures of this APC Workgroup

In 2023, the Workgroup met monthly from June to August by Zoom, for two hours at a time, and spent a full day together in Oakland on August 31, 2023. The Workgroup started by agreeing on a set of Principles and Values to ensure we would work well together and accomplish our goals:

1. Making Progress:
- Be bold, and be wise
- Be willing to experiment and iterate
- Allow for good, not just perfect
- Question assumptions about everything ("excellence", "DEI", "quality")
- Recognize what was already good/working and what was not

2. Confidentiality and Care:
- Confidential discussions, with a collective statement at the end, no attribution to individuals
- Read suggestions generously and assume we are all here to be productive
- Provide honest and respectful feedback
- Ask tough questions and challenge norms and expectations
- Value each other's lived experiences

3. Campus and System:
- Balance needs of the "system" with local differences
- Understand differences between disciplines
- Incorporate flexibility into recommendations to account for differences
- Remember the people back on our campuses who are at the heart of this, including the students (both grad and undergrad), faculty, and staff who are impacted
- Center our public mission

After a brief discussion, the full Workgroup agreed to divide our overall charge into two groups of issues: (1) more urgent practical issues for which faculty and administrators were requesting guidance as soon as possible, and (2) less urgent philosophical issues whose discussion was expected to require considerably more time. The first group of issues (described extensively in this interim report) were discussed first by the full Workgroup, which identified the following components needing more in-depth discussion: key questions, macro-micro issues, implementation concerns, and data needs. The Workgroup then divided into three sub-committees during the summer of 2023 to further discuss each of the urgent issues, based on the overall Workgroup priming. Each sub-committee met virtually using Zoom, typically 1-2 times per week for several weeks for 60-90 min at a time. Each sub-committee also met virtually with representatives of campus taskforces to understand campus-level approaches and solicit specific input and ideas. Individual committee members and sub-committee groups dedicated substantial time asynchronously to preparing both written and oral reports for the meetings.

Each sub-committee presented its findings and preliminary recommendations to the full Workgroup for broad discussion at one of the monthly all-hands meetings. Frequently, following this presentation, the sub-committees then met another 1-2 times, culminating in an all-day in-person meeting and the drafting of sections of this report. In one case (the subcommittee dealing with defining academic expectations), some findings were deemed urgent enough to require dissemination prior to the beginning of the Fall semester. Thus, a shorter version of their findings was compiled collectively by the group and presented as part of a memo from the Co-chairs to the Provost and Senate chair (Appendix 8), accompanied by relevant guidance from the Academic Senate's Coordinating Committee on Graduate Affairs (CCGA) (Appendix 7).The Co-chairs assembled and edited the report sections from the three sub-committees, sharing drafts with representatives from UCOP as well as with the full Workgroup for feedback. They then finalized the draft for distribution to the larger APC.

Appendix 4: Academic Planning Council Report on Doctoral Education

Retrieved from https://www.ucop.edu/graduate-studies/_files/apc-grad-ed-wrkgrp-report.pdf in October 2023.

UNIVERSITY
OF
CALIFORNIA

ACADEMIC PLANNING COUNCIL
Graduate Education Workgroup

Recommendations for Greater Support of Doctoral Education
June 2019

I. **DOCTORAL EDUCATION AT UC**

II. **DOCTORAL EDUCATION IN THE 21st CENTURY**

III. **RECOMMENDATIONS**
   A. **Financial support**
   B. **Modern educational practices**
   C. **Mental health and well-being support**
   D. **Diversity**
   E. **Professional development**

IV. **CONCLUSION**

V. **WORKGROUP CHARGE AND MEMBERSHIP**

I. **DOCTORAL EDUCATION AT UC**

Academic graduate education is the foundation of the University of California's status as a world-class research university. As the nation's leading public academic research institution and as the research arm of the State of California, UC's role in training the next generation of researchers is a centerpiece of its mission. The achievements, prestige, and renown of the University of California and its faculty are not possible without its doctoral student body. Academic graduate education produces the next generation of professors, without whom there can be no undergraduate education to both support State needs and ensure equality of opportunity for all students. UC's academic graduate training also produces the highly-skilled and analytic professionals who drive the modern economy. Finally, doctoral students are central and indispensable participants in the research that defines UC as a premier research university.

The quality of UC's academic graduate education has several important implications for the University's mission:

- Training the next generation of faculty and researchers – One of UC's unique contributions to public education in California is the peerless training it provides to academic doctoral students who will become the next generation of faculty and researchers.
- Faculty recruitment and retention – The ability to attract the best doctoral candidates from a world-wide pool is one of the most important factors in appealing to and retaining top faculty.
- International reputation – The internationally recognized productivity and quality of UC's research is impossible without the collaborative contributions of academic graduate student researchers, a key factor in UC's high international rankings.
- Creating and applying new knowledge and skills – As the economy increasingly transitions to new forms of knowledge and new analytical skills, the value of training students to carry out critical and independent research will become even more important to California's economy and quality of life.
- Contributions to civil society – The ability to constantly and reliably replenish new generations of well-educated professionals in ever larger numbers is an invaluable public service and a necessary element for the maintenance and growth of a civil society.

UC's competitiveness for attracting top doctoral students depends primarily on three factors:

- The world-wide reputation of its programs;
- Sufficient financial support for Ph.D. students to allow them to study with minimal financial burden; and
- A merit-based admission process that draws from the largest talent pool, and considers both domestic and international students equally.

Understanding the value to UC of academic doctoral education is key to grasping the impact of chronic underinvestment in doctoral education. Doctoral education at UC is inadequately funded and students are inadequately supported. Among those familiar with post-baccalaureate degrees at UC, there is substantial awareness of these inadequacies, despite repeated efforts to address them. In fact, since 2000 alone, five task forces before this one have issued recommendations on graduate education at UC: 2001 – Innovation and Prosperity at

Risk - Investing in Graduate Education to Sustain California's Future; 2003 – Commission on Growth and Support of Graduate Education; 2007 – Work Team on Graduate and Professional School Diversity; 2012 – Joint Administrative/Senate Workgroup on Academic Graduate Student Issues; and 2012 – Task Force on Competitiveness in Academic Graduate Student Support. Each committee produced a report with recommendations that echoed and amplified the previous group's efforts.

Despite all of this thoughtful attention, these perennially concerning issues persist. Put most simply, both UC leadership and the State of California need to recognize the value of academic doctoral education as distinct from undergraduate education: it is a crucial component of the continuity of the University system, and essential to the State's economy and vitality. The importance of doctoral education is recognized by emerging economies such as India, where academic research institutions are being established at remarkable rates.[1] Indeed, given the size of California's economy, and UC's scale and contributions to the state, nation, and world, UC should be comparing its conception of, and commitments to, doctoral education with growing nations rather than other states.

The report you are now reading is the product of yet another task force, the APC Workgroup on Graduate Education, a subcommittee of the Academic Planning Council. It necessarily reflects, however, new issues that have become more urgent because of radical changes in research, technology, and society, and the cumulative effect of neglecting these issues or inadequately addressing them. Ultimately the core message is straightforward and familiar: **UC must adequately fund and support doctoral education.** Without adequate support UC cannot maintain the quality of its research and instruction. If UC is serious about protecting and building on its excellence, and continuing its role as a key contributor to California's economy, it must demonstrate its commitment to academic doctoral education. It cannot simply talk proudly about the system that previous generations created.

II. **DOCTORAL EDUCATION IN THE 21st CENTURY**
The Workgroup's recommendations respond in part to the substantial changes taking place in the world of graduate education. These include the explosion in information technology and accessibility; new technologies and research methodologies; the growth of interdisciplinary scholarship; career opportunities beyond the Academy; greater weight given to work-life balance; and changes in the makeup of the doctoral student body. These are just a few of the developments that doctoral education grapples with today. With a new century comes the need for new best practices, and the realization that old best practices have become outdated.

The National Academy of Sciences, Engineering, and Medicine (NASEM), in a recently-issued report on graduate STEM education, calls for "a shift from the current system that focuses primarily on the needs of institutions of higher education and of the research enterprise itself to one that is student centered, placing greater emphasis and focus on graduate students as individuals with diverse needs and challenges."[2] Among the NASEM recommendations are: reward effective teaching and faculty mentoring; prioritize diversity and inclusivity; address

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[1] India has established fifty-six Institutes of National Importance since 2010, out of a total of 134 established since 1823.
[2] National Academy of Sciences, Graduate STEM Education in the 21st Century, May 2018, pg.3.

student mental health and well-being; and expand professional development to include nonacademic careers. The Workgroup's recommendations below echo the NASEM report.

III. **RECOMMENDATIONS**

The Workgroup focused on five key areas:

- **A. Financial support;**
- **B. Modern academic practices;**
- **C. Mental health and well-being;**
- **D. Diversity; and**
- E. **Professional development.**

Below are: 1) recommendations; 2) suggestions for campuses to consider; and 3) promising practices currently under way at UC campuses in the above five key areas.

A. **FINANCIAL SUPPORT**

UC must do better at financially supporting its doctoral students, particularly as it seeks to diversify the graduate student body. The University cannot compete with its peers for talented candidates if it does not offer competitive support. In 2017 the gap in average net stipend between UC and its peers was nominally $680.[3] In actuality the gap is much greater due to California's high cost of living - with COL factored in, the average gap in doctoral support is closer to $3,400.[4] This is a huge difference but not insurmountable. The Workgroup urges UC leadership to make every effort to close the gap so that the quality of UC's doctoral programs is maintained and enhanced.

UC campuses, with planning and prioritization, *could* guarantee five-year multi-year funding to doctoral students upon admission. According to current data, about 77 percent of doctoral students across UC receive stable or increasing net stipends for five consecutive years.[5] (Appendix 1.) With some exceptions, this multi-year funding is relatively consistent across campuses and disciplines. However, this funding is typically not presented as a full five-year multi-year guaranteed package upon admission. Offering five-year funding upon admission would enhance recruitment of high-potential students, offer financial security, and address one of the chief stressors for doctoral students - worry over continued funding while in the program.

In addition to offering guaranteed five-year funding, the University must address the issue of graduate student housing. Graduate students, many of whom have family responsibilities, face enormous challenges in finding affordable housing. Without a targeted effort to address graduate student housing, UC's capacity to attract and retain qualified candidates is at serious risk.

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[3] UC Graduate Student Support Survey: Trends in the Comparability of Graduate Support Stipends, Nov. 2017, pg.4

[4] Ibid.

[5] UC campuses do not collect or track doctoral funding in a systematic fashion. The data relied on here is derived from systemwide data and includes assumptions about doctoral support packages.

Doctoral funding must also address the cost-of-living differential faced by California students who choose to attend UC rather than an out-of-state institution. As noted above, the California cost-of-living premium is significant, and must be factored into doctoral student support.[6] Finally, doctoral education funding should be considered in all budget discussions, in particular with the Regents and the State.

Recommendations on financial support:
1. **Institute five-year (or normative time-to-degree) funding upon admission** – By Fall 2022, all UC campuses should offer incoming doctoral students five-year funding packages upon admission that address local living costs including housing. Alternatively, campuses should offer multi-year support upon admission through normative time to degree for the student's academic program. Campuses should establish bridge funding programs in the event faculty grant funding is discontinued.
2. **Address housing issues** – Lack of affordable housing is a significant issue in recruitment and retention of doctoral students. According to the 2017 UC Graduate Student Well-Being Survey,[7] housing is one of the top five areas that graduate students want UC to prioritize with attention and resources. Graduate student housing should therefore have a much higher priority in all planning processes and be afforded the same attention and resources that undergraduate housing receives. On-campus housing should take the standard Ph.D. stipend into consideration when setting rent. Partnerships with private developers should be explored for off-campus housing.
3. **State action** – UCOP should better articulate to the Legislature the value of graduate education to the State. Legislators should be educated on the rewards for the state of funding doctoral education and the very real costs of continued underinvestment. The California lottery, which provides resources to educational institutions, should be explored as a fund source for doctoral education.

The Workgroup considered **tuition reduction**, a recommendation made by several previous task forces. A tuition reduction plan would reduce tuition by 50 percent once the doctoral student advances to candidacy. An assessment of the financial impact reveals that this tuition reduction would result in a cut to core UC funding by decreasing external grant and fellowship funding as well as campus block fellowship funds, which receive a large component of graduate student return-to-aid derived from tuition revenue. Furthermore, once five-year funding is established, only a small number of doctoral students would benefit from this tuition decrease. (Appendix 2.) The Workgroup therefore does not recommend tuition reduction upon doctoral advancement to candidacy.

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[6] Separate from this Workgroup's efforts, UCOP staff are drafting a report in response to a request from President Napolitano to examine the landscape for funding UC academic doctoral students in relation to her concern for maintaining UC's competitiveness in recruiting and supporting doctoral students. That report will include an example of how campuses can effectively transition from current year-by-year support to five-year guaranteed funding upon admission.

[7] UC Graduate Student Well-Being Survey, 2017, pg. 8.

In the course of Workgroup discussions, the following measures to address doctoral student funding were also discussed:

- **Degree completion within normative time** – Doctoral students should be expected to complete their degree within the program's normative time-to-degree. Annual assessments should be undertaken to ensure adequate progress towards degree.
- **Dissertation fellowships** – Campuses should consider awarding dissertation fellowships for timely degree completion. If the candidate fails to complete their dissertation in a timely fashion, penalties may be applied to the program.
- **Philanthropic support** – Campus development staff should be consulted about prioritizing doctoral education for philanthropic support. Campuses might also consider using return-to-aid funds as matches for current-use or term-endowment philanthropic awards, or dedicating large unrestricted gifts as matches to create larger endowments that fund fellowships.
- **Research overhead** – Where permitted, research overhead for facilities and administration costs arising from academic graduate programs should be considered for redirection back to the programs.
- **Partnerships with industry** – Some industries are open to partnerships with campuses, such as scholarship or fellowship programs, particularly when there is potential for career opportunities for graduates. Industry partnerships are underutilized however, and issues surrounding intellectual property are involved, but the payoff may justify the effort of exploring professional development tracks across a variety of industry fellowships.
- **Applications for external funding** – The campuses should expect, facilitate, and incentivize doctoral students to apply for external funding even if the student has been awarded a multi-year package. Successful applications free up funds for other students, and the application process is an essential skill for Ph.Ds. In support of this, campuses should regularly offer grant application training.

Current programs and initiatives at UC campuses for financial support of doctoral education - Listed below are UC campus programs and initiatives for financial support of doctoral education. The list is not exhaustive - far from it - and is offered to generate discussion and ideas for funding doctoral education.

- **Berkeley** – Berkeley Connect - graduate student philanthropic support while mentoring undergraduates; Graduate Division support for costs not covered by foundation and agency funding fellowships; dissertation completion fellowships for arts, humanities, and social sciences; travel grants for professional development; parent grants; strategic partnerships with development staff in academic units with engaged alumni support.
- **Davis** – Mandatory Student Progress Assessment report (on-line tool) to support degree completion within normative time (among other objectives); matching commitments to cover the balance of fees and tuition not paid by the external agency; degree completion metrics included in block fellowship allocations; Graduate Division matches extramural training grants.
- **Irvine** – Minimum five-year funding guarantee for all doctoral programs except Engineering; multi-year housing guarantee; degree completion metrics included in block fellowship allocations; non-resident supplemental tuition for all international doctoral students from year 2 through advancement to candidacy; extramural fellowship applications incentivized by matching funds to cover the cost of education not covered

by the fellowship; bridge funding for multi-year support if faculty loses grant funding; Graduate Division matches extramural training grants.

- **UCLA** – Graduate Division matches extramural training grants; $1000 grant per student for research, conference, or professional development; extramural fellowship applications incentivized by offering matching funds to cover the cost of education not covered by the fellowship; donor support for Grad Slam.
- **Merced** – Fellowship and grant applications incentivized with monetary awards; matching funds to cover the cost of education not covered by fellowships; dollar match for extramural training grants; one-semester dissertation fellowships with future funding dependent upon semester completion; donor support for Grad Slam.
- **San Diego** – Graduate Fellowship Initiative - supplementary tuition/fee support to student applications for fellowships/grants; multi-year housing guarantee; degree completion metrics included in block fellowship allocations; extramural fellowship applications incentivized by matching funds; Graduate Division matches extramural training grants; graduate housing at 20 percent below market value.
- **San Francisco** – Discovery Fellows program - philanthropic support for all basic science students.
- **Santa Barbara** – Extramural fellowship applications incentivized by offering matching funds to cover the cost of education not covered by the fellowship; non-resident supplemental tuition for all international doctoral students from year 2 through advancement to candidacy; Graduate Division matches extramural training grants; Chancellor-mandated reduction in graduate student housing costs; donor support for Grad Slam.
- **Santa Cruz** – Graduate Division support for costs not covered by foundation and agency funding fellowships; extramural grant applications incentivized by matching funds to cover the cost of education not covered by the grant; dissertation year fellowships for NSF GRFP students; cost sharing with the Division of Student Success (DSS) to provide fee remission and GSHIP benefits to graduate students working as on-campus interns in DSS offices.

B. **MODERN EDUCATIONAL PRACTICES**

As noted in the NASEM report, "Our nation's future depends on a graduate education system that continues to evolve and meet its charge to create highly trained researchers, to develop future faculty and teachers responsible for the educational enterprise, and to support national economic, social, and cultural development."[8] The report noted that there was a mismatch between the incentives that underlie the priorities of faculty members and those of their graduate students, and called for graduate education to be more student-centered, transparent, and accountable. Whereas this requires changes to be made at all levels of the educational enterprise, the report particularly emphasizes the need for changes in faculty behavior. The NASEM report, although focused on STEM graduate students, provides a blueprint for modernizing doctoral education in all disciplines. Indeed, the need for greater interdisciplinary interaction is highlighted in the report. Improved faculty mentoring of graduate students and greater data transparency are needed. Enhanced mentoring, in particular, is both an individual and a collective responsibility.

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[8] National Academies, Graduate STEM Education in the 21st Century, pg. 17.

Recommendations on modern educational practices

1. **Improve faculty mentoring** - The following measures should be taken to improve faculty mentoring:
   a. Revise Section 210 of the Academic Personnel Manual concerning appointment and promotion to include mentoring as an element of faculty review;
   b. Require faculty to undergo in-person mentoring training, including issues of diversity, equity, and inclusivity.
   c. Ensure that there is a balance of mentoring responsibilities across all faculty. Mechanisms should be developed to accurately determine individual mentoring loads, including those aspects that may not be easily observed or quantified, since these often have a greater impact on faculty of color and female faculty in disciplines in which they are underrepresented.
   d. Promote use of the Individual Development Plan (IDP), in which a student works with a faculty mentor to craft a plan for course work, research, presentations, publications, annual goals, timeline for completion, and professional development. The IDP is increasingly important in multi-disciplinary programs.
   e. Train doctoral students on mentoring so they can be better prepared in their role as mentees and as mentors for undergraduates and peers, and as faculty mentors if and or when they reach the professoriate.
   f. Institute and broadly communicate a process for handling mentoring issues that may arise during the student's tenure at the institution.

2. **Increase data transparency** – Steps for increasing data transparency:
   a. Campuses should clearly post on program websites data on admissions, degree completion, and financial support.
   b. Where possible demographic breakdowns of such data should be provided at the disciplinary level.
   c. Career outcomes data for every graduate should be shown for a 15-year period.
   d. Where possible, alumni satisfaction data should be shown.

The Workgroup also discussed **co-mentoring**, another modern educational practice, in which two or more mentors are assigned to a student. Co-mentoring can reduce power differentials between mentor and mentee, and alleviate conflicts of interest that may arise from having a single primary advisor. Also with the increase in multi-disciplinary doctoral training programs, co-mentoring by faculty in all applicable disciplines is increasingly important and will improve the quality of academic outcomes.

Current programs and initiatives at UC campuses for modern educational practices:
- **Berkeley** - Mentoring programs; mentoring awards; mandatory IDP for many doctoral students.
- **Davis** - Mentoring programs; mentoring awards.
- **Irvine** - Mentoring programs; mentoring awards; mandatory IDP for doctoral students; degree program data.
- **UCLA** – Degree program data.
- **Merced** - Mentoring programs.
- **San Diego** - Training and certificate programs in teamwork and leadership for graduate students.
- **San Francisco** - Mentoring programs; mentoring awards.
- **UCOP** – Doctoral program dashboard; doctoral experience and employment dashboard.

C. MENTAL HEALTH AND WELL-BEING

There is a growing awareness among universities that the pressures of academic graduate education are leading to significant mental health issues among students.[9] Research reveals that there is a strikingly high prevalence of anxiety and depression among academic graduate students, and that students are more than six times as likely to experience depression and anxiety as compared to the general population.[10] UC's 2017 Graduate Student Well-Being Survey revealed that over one-third of respondents reported symptoms indicative of clinical depression, and mental health is one of the five priority areas that UC graduate students say need greater attention and resources.[11] The reasons for this growing scourge are several, including financial worries, inadequate mentoring, isolation, and concerns about job prospects. UC clearly must address these issues, and not only because symptoms of depression interfere with quality of work, advancement to candidacy, and degree completion.[12] Measures to make the doctoral experience a positive one produce short- and long-term benefits for both the student and the institution.

The Workgroup recommends that UC undertake a campaign to address doctoral student mental health and well-being. It is in the best interest of the entire UC community for leadership to implement measures to address the issues and deficits surrounding the mental health and well-being of its doctoral students. Central to increasing well-being within the graduate student community is improving financial support, improving faculty mentoring, cultural sensitivity, and inclusion, and improving career preparation, issues that are addressed elsewhere in this report. The Workgroup recommends that measures to improve graduate student mental health and wellness focus on prevention and targeted intervention, as recommended by the 2006 University of California Student Mental Health Committee.[13]

Recommendations on mental health and well-being:
1. **Promote a culture of wellness** – UC should undertake a campaign to create a culture of wellness across the UC system by embedding good health practices and greater well-being awareness in all policies and all aspects of campus culture. The Workgroup directs readers to the **Okanagan Charter**,[14] issued by the 2015 International Conference on Health Promoting Universities and Colleges, which offers a general framework for integrating wellness into campus culture and creating a community of care.
2. **Create campus websites** – Establish and publicize health and wellness resources online.
3. **Involve faculty** – Encourage faculty to promote healthy behaviors.
4. **Graduate wellness coordinator** – Create a staff position to coordinate wellness services for graduate students.

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[9] Evidence for a mental health crisis in graduate education, Proceedings of the National Academy of Sciences, submitted March 2018.

[10] Ibid.

[11] UC Graduate Student Well-Being Survey, May 2017, pg. 8

[12] Ibid, pg. 38.

[13] Student Mental Health Committee Final Report, September 2006.

[14] Okanagan Charter, An International Charter for Health Promoting Universities & Colleges, 2015.

5. **Employ preventive and targeted interventions** - Currently mental health services at UC campuses focus primarily on crisis management. The Workgroup recommends that campuses implement the stepped care approach recommended by the 2006 UC Student Mental Health Committee, which involves targeted interventions through education, support, and prevention. This approach is becoming more commonly used at higher education institutions.[15]
6. **Institute accountability measures** – Institute accountability measures for wellness, e.g., data collection; student satisfaction surveys, exit surveys.
7. **Clarify degree completion requirements** – Make degree completion requirements clear, memorialize them in writing, and include norms and expectations.

The Workgroup discussed the following additional measures for mental health and well-being:
● **Graduate student center** – To combat social isolation, create a physical space for graduate students, separate from undergraduates, to meet and socialize.
● **Cross-disciplinary activities** - Offer opportunities for cross-disciplinary interaction, e.g., brown bag gatherings, social events, topic discussions, research presentations, etc.
● **Extracurricular activities** – Encourage students to engage in extra-curricular activities and self-care. Advise faculty to refrain from discouraging students from engaging in extracurricular activities, and from giving negative evaluations to students who do.

Current programs and initiatives at UC campuses for supporting mental health and well-being:
▪ **Berkeley** - Be Well at Cal and Recalibrate.
▪ **Davis** - Graduate wellness counselor.
▪ **Irvine** - Graduate resource center; graduate wellness counselor.
▪ **UCLA** - Graduate resource center; graduate wellness counselor.
▪ **Merced** - Graduate wellness counselor; peer mentoring program for new doctoral students - Grad EXCEL.
▪ **Riverside** – Diversity and Inclusion Academic Liaison (DIAL) coordinator who supports and educates graduate students on issues related to sexual violence and sexual harassment, as well as discrimination against protected groups.
▪ **San Diego** - Social innovation projects; GradLife; graduate wellness counselor.
▪ **San Francisco** - Annual workshops for faculty on how to assist students in distress including information on Student Health and Counseling Services.
▪ **Santa Barbara** - Graduate wellness counselor.
▪ **Santa Cruz** - Collaboration with Division of Student Success to bring CAPS counseling services into graduate-student-specific spaces.

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[15] Colleges Say They Don't Have Money for Mental Health. Here's What They Should Do. Vice. May 8, 2019.

D. **DIVERSITY**

Campus leadership including faculty leaders must articulate the importance of improving the inclusion of groups historically underrepresented at UC, especially within the ranks of faculty and doctoral students. Improving and increasing diversity means not only enrolling greater numbers of diverse students, but also incorporating inclusion when shaping curriculum, policies, and processes, including resource decisions. **Policies, processes, and resources should be aligned to support this priority.** Strategic plans, budgets, resource allocations, and incentives should all demonstrate that inclusive excellence is both a campus and a systemwide priority. Departments and programs that make notable advancements in this area should be rewarded; those that consistently fail to advance inclusive excellence should bear a consequence, as they would for other undesirable outcomes. UC should support pipeline and pathway programs that expose, equip, and support members of historically underrepresented groups to pursue their chosen careers. Particular attention should be paid to expanding pathways to the professoriate for underrepresented scholars. The University must allocate sufficient resources for summer bridge programs so students can get adequate preparation before their entry to doctoral programs. The University must also diversify pathways to faculty positions.

Recommendations on diversity

1. **Leadership** – Campus leadership, including faculty leaders, must articulate the importance of significantly improving the inclusion of groups historically underrepresented at UC, especially within the ranks of faculty and doctoral students. Leadership must be specific in communicating the priority of efforts aligned with this goal and accountability measures to incentivize notable progress and to discourage failure to improve. All annual budgets and strategic plans should be evidence of this top priority. Chancellors, EVCs, Deans, Chairs, and Academic Senate leadership, at all levels, must commit to accountability for the areas under their purview. They should also articulate clear and workable proposals for how to achieve this, since too often there is a mandate to achieve particular goals but little articulation of how the goals may should be accomplished.

2. **Pipeline** – Create and improve pipelines from minority-serving colleges and institutions to UC graduate programs, e.g., intersegmental programs, retention programs, summer bridge programs, UC-HBCU Initiative.

3. **Holistic review** – Conduct holistic review of student applications rather than rejecting any application that does not come from a top-20 college or that does not meet a GRE cut score. Conduct faculty discussions, and offer training, on holistic review.

4. **Fellowship support** – UCOP should expand fellowship programs that focus on diversity in doctoral education, such as the Eugene Cota-Robles Fellowship.

5. **Retention programs** – Attention should be paid to retention and degree completion for all members of a diverse graduate student body.

6. **President's Postdoctoral Fellowship Program (PPFP)** – Direct students from historically under-represented groups to the PPFP, UC's successful pathway to a diverse professoriate.

Current programs and initiatives at UC campuses for increasing diversity in doctoral education:

- **Davis** - Alliance for Multicampus Graduate Admissions to advance holistic admissions practices.
- **Irvine** - Diverse Educational Community and Doctoral Experience Decade; Diversity Recruitment Fellowship supplements financial support packages of admitted doctoral and M.F.A. diversity students; Cota-Robles Fellowships and Competitive Edge summer bridge program.
- **UCLA** - Alliance for Multicampus Graduate Admissions to advance holistic admissions practices; Cota-Robles Fellowships and Competitive Edge summer bridge program.
- **Merced** - California HSI Alliance for Graduate Education and the Professoriate (NSF AGEP) program; National Research Training in Interdisciplinary Computational Graduate Education (supported by NSF NRT-Innovations in Graduate Education).
- **San Diego** - San Diego, Cota-Robles, SEED, and other Fellowships.
- **San Francisco** – Initiative for Maximizing Student Development (IMSD) fellowship at UCSF (supported by NIGMS and Graduate Division).
- **Santa Barbara** - Graduate Scholars Program; California HSI Alliance for Graduate Education and the Professoriate (NSF AGEP).
- **Santa Cruz** - Expanded funding for Cota-Robles fellowship (more and larger awards offered).

E. **PROFESSIONAL DEVELOPMENT**

While there is a diminishing job market for faculty positions, which are the traditional career outcomes for doctoral students, a broad array of careers for doctoral graduates outside the Academy are emerging. The expansion of career prospects has a direct positive impact on student mental health and well-being as data show that confidence about future careers is a major protective factor from the risk of clinical depression.[16] Professional development for academic doctoral students should be addressed on two fronts: 1) devote additional resources and multipronged efforts to effect a cultural shift that expands professional development at UC campuses to include non-academic careers; and 2) actively support students exploring both academic and non-academic careers.

Recommendations for professional development
1. **Expand professional development resources** – Offer workshops, seminars, and information on the broad range of careers an academic graduate degree can lead to. Encourage faculty to support student interest in non-academic careers.
2. **Funding for conference attendance** – Establish a fund source for the cost of student attendance at professional conferences.
3. **Increase faculty involvement** – Advise faculty not to discourage students from pursuing non-academic careers, and ask them to partner with other career-service providers. Ensure faculty are aware of campus career and professional development resources.
4. **Campus career resources** – Make sure that campus career resources include services tailored to the needs of graduate students.

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[16] UC Graduate Student Well-Being Survey, May 2017

5. **Alumni engagement** – Encourage alumni engagement in graduate student professional development.
6. **Showcase all graduate alumni on campus websites** – All alumni, not just those in academe, should be showcased on graduate program websites.

Current programs and initiatives at UC campuses for professional development:
- **Berkeley** - NSF AGEP California Alliance; Graduate Professional Development program (GradPro); Preparing Future Faculty program; student-run Beyond Academia conference
- **Davis** - GradPathways
- **Irvine** - Graduate Professional Success
- **UCLA** - PhD and Master's Career Services; Edward A. Bouchet Graduate Honor Society; NSF AGEP California Alliance
- **Merced** - NSF AGEP California Alliance; Graduate Enrichment and Advancement Resources and Services (GEARS); Dissertation Bootcamp
- **Riverside** -'Grad Success' umbrella that provides a range of workshops/professional development trainings and mentorship to students
- **San Diego** - grAdvantage
- **San Francisco** - UCSF MIND: Motivating Informed Decisions career exploration program; Training Researchers and INterns for Upcoming Professors (TRAIN-UP)
- **Santa Barbara** - Annual student-run Beyond Academia conference
- **Santa Cruz** - Grad Division sponsors and administers fall quarter Graduate Student Communication Certificate program and winter quarter Graduate Student Leadership Certificate program; GradHorizons

IV. **CONCLUSION**

The graduate education system at UC is a signature example of research excellence - it trains new generations of contributors to civil society in myriad fields and it is an economic engine for California, the nation, and the world. The time for UC to decide whether it wants this stellar system to continue is now. The factors that currently threaten academic graduate education at UC are serious, and must be met with boldness and commitment. The Graduate Education Workgroup therefore urges campus and UCOP leaders to take the Workgroup's recommendations seriously and to take action promptly. As already stated, academic graduate education is at the core of the mission of the University of California and the chief reason for its stature as the premier public research university in the world. It is incumbent upon all of us to follow through on improving the support and conditions of academic graduate education, and to make sure that UC's position as an academic leader for the world and an economic engine for the state of California continues.

It is the Workgroup's expectation that these recommendations will be given to the Regents and to campus Chancellors, Executive Vice Chancellors, Vice Chancellors for Research, Graduate Deans, Graduate Student Associations, and Senate Divisions for review. It is also the Workgroup's expectation that the recommendations will be acted upon. In order to ensure that such action takes place, however, and to prevent the same fate as prior task force reports, the Workgroup recommends that APC establish a committee in two years to examine the extent to which the recommendations have been achieved. The plan for a follow-up committee should include metrics for measuring implementation and success in strengthening academic graduate education at UC.

V. **WORKGROUP CHARGE and MEMBERSHIP**

Charge – The Graduate Education Workgroup is a subcommittee of the [Academic Planning Council](), a systemwide committee of campus and UCOP administration and Senate leaders. The Workgroup was charged with drafting recommendations for grappling with issues facing academic doctoral education at UC today.

Membership

Frances Leslie, Workgroup Chair, Vice Provost for Graduate Education and Dean of the Graduate Division at UC Irvine

Michael Brown, UC Provost and Executive Vice President

Fiona Doyle, Vice Provost for Graduate Studies and Dean of the Graduate Division at UC Berkeley

Onyebuchi Arah, Chair of CCGA, Professor of Public Health and Epidemiology at UCLA

Scott Brandt, Vice Chancellor for Research at UC Santa Cruz

Sandra Brown, Vice Chancellor for Research at UC San Diego

Farrell Ackerman, Professor of Linguistics at UC San Diego

Josh Schimel, Professor of Ecology, Evolution, and Marine Biology at UC Santa Barbara

Devon Graves, Student Regent and UCLA doctoral candidate

Becky Hofstein Grady, UC Irvine doctoral candidate

Pamela D. Jennings, Executive Director of Graduate Studies at UCOP

Appendix 5: Two reports of the Academic Planning Group on Reimagining Graduate Education (Part I: 2021, and Part II: AY 2021-2022), UC Irvine

5A: Report on APG Workgroup on Reimagining Graduate Education June 2021

5B: Report of the APG Workgroup on Reimagining Graduate Education: Part II, AY 2021-22

Report on APG Workgroup on Reimagining Graduate Education

June 2021

Committee Members
Jeffrey A. Barrett, Chancellor's Professor; Chair, Academic Senate
Ryan Cherland, Associate Vice Provost for Institutional Research and Decision Support
Bridget R. Cooks, Associate Professor, Department of African American Studies, Department of Art History, Associate Director of the UCI Institute and Museum of California Art
John Crawford, Professor, Dance Department, School of the Arts
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Michael Leon, Professor Emeritus, Recalled, Department of Neurobiology and Behavior, School of Biological Sciences
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Last Updated:
6/17/21

Executive Summary

The APG Workgroup on Reimagining Graduate Education was charged to develop data-driven criteria by which the Academic Senate and the campus administration might assess whether PhD and MFA programs are appropriately sized and have appropriate levels of support. The workgroup conducted its work during winter and spring quarters of 2021, meeting every two weeks for two hours, with offline work in between.

The criteria for evaluating graduate programs fell into these major categories:

1. Competitiveness, recognition, and reputation
2. Diversity, equity, and inclusion
3. Contributions of program to campus teaching, research, and service missions
4. Career pathways and opportunities
5. Financial support levels for program

The workgroup developed a set of questions related to each of these categories, and identified data sources, both **central** and **local**, to help answer these questions. For local questions, that is, those that must be answered by the programs and departments themselves, we developed a questionnaire.

Recommended next steps include:

Inform school deans about findings of this group and overall plans and timelines.
1. Collect central data by OIR, Graduate Division, and other campus offices over the summer.
2. Distribute the questionnaire to graduate program directors and/or department chairs for completion by early fall to collect the first-pass local data.
3. Share the summary of the first-pass local data with deans, associate deans for graduate affairs, and assistant deans for return comment in fall.
4. Handover of all data to a follow-up APG workgroup on this topic for analysis and action planning.

Introduction

The first APG Workgroup on Reimagining Graduate Education was charged to develop data-driven criteria by which the Academic Senate and the campus administration might assess whether PhD and MFA programs are appropriately sized and have appropriate levels of support. The idea was that these criteria would be used by a second APG Workgroup on Reimagining Graduate Education that would be convened in fall of 2021. The work of this second workgroup would be to apply the criteria from the first workgroup to all PhD and MFA programs, assess the results, and make recommendations regarding appropriate size and funding support models that allow for the possibility of programs growing, contracting, or maintaining steady state and attach appropriate resources to ensure program quality.

The charge listed some of the key categories to consider in developing criteria. These included: measures of program quality (national rankings, recognition, competitiveness for students); measures of student success in the program and thereafter (i.e., employment placements and prospects); contributions to diversity, equity, and inclusion; availability, nature and trajectory of financial support; and national trends for comparable programs. The first workgroup was to deliver its report at the end of the 2020-21 academic year.

The first workgroup aimed to establish a list of criteria appropriate to evaluating all PhD and MFA programs. The emphasis was on understanding which programs and students are thriving given both local and campus goals. In those cases where a program is not thriving or could be doing better, we wanted criteria that would help us understand why not and provide sufficient information to give a sense of what remediation and support might be appropriate.

The criteria for evaluating graduate programs fell into these major categories:

1. Competitiveness, recognition, and reputation
2. Diversity, equity, and inclusion
3. Contributions of program to campus teaching, research, and service missions
4. Career pathways and opportunities
5. Financial support levels for program

The first workgroup developed a set of central and local questions related to each of these categories. The central questions can be answered with data from OIR, Graduate Division, and other campus offices. Most of this data is already at hand. The proposal is to get started with putting that data together over the summer. The local questions can only be answered by the programs and departments themselves. These questions reflect how the people involved in running a program think of it and the goals they have for the program in their local context.

Throughout the process, we have aimed to reduce the burden in data collection as much as possible. To this end, the questionnaire was edited to make it as easy to complete as possible.

It also uses explicit word limits to encourage our colleagues not to devote unnecessary resources to the task. How the first-pass questions are answered may result in the need to collect additional data or to compile data from existing sources at the local level (program, department, and/or school) or centrally (e.g., Registrar, Institutional Research, Graduate Division). The second workgroup will then use all of the data to conduct the actual evaluations of the programs and to determine possible next steps and recommendations. We expect that this APG workgroup will need the full 2021-22 academic year to accomplish these tasks.

The table of questions and metrics that were developed by the first workgroup are included below. The table of metrics also includes the sources of data to answer each question. Following that table is the questionnaire we developed to solicit the local data from programs and departments. That local data will then be given to schools for comment. Further, we may conduct meetings or interviews with key stakeholders. The full data set will then be given to the second workgroup to inform their deliberations. We include here a draft charge for the second workgroup.

Draft Charge for the Second APG Workgroup on Reimagining Graduate Education

The charge of this APG work group is to use the data-driven criteria determined by the first APG Workgroup on Reimagining Graduate Education to assess whether PhD and MFA programs are appropriately sized and have appropriate levels of support. Graduate Division and the Senate office will collect the central data, the local data, and the school comments on the local data. The second workgroup will then apply the criteria to all PhD and MFA programs and assess the results. Using this analysis, the second workgroup will make recommendations regarding appropriate size and funding-support models. These recommendations should allow for the possibility of programs growing, contracting, or maintaining steady state as well as considerations for support—both human and financial resources—that different programs with different disciplinary norms may require. The recommendations should be made with an eye to furthering the strategic goals of the campus, including but not limited to the academic recognition of PhD and MFA programs at UC Irvine.

Table of Recommended Metrics

Topic	Question	Data location(s)
Competitiveness and Recognition	If ranked, what is the current ranking of the program in its field? Opportunities for upward moves?	OIR
	Goals for the graduate program	Local
	How does the graduate program support campus strategic priorities?	Local
	Yield: How successful is the program in recruiting students? *5 year range*	UCI program yield - GD Competitor list – local Competitor yield - OIR
DEI	How diverse is the graduate student body? How diverse is the faculty?	OIR [gender, LGBTQIA, disability status, racial/ethnic minority]
	How does the graduate student population in the program compare to the undergraduate population? To the discipline?	OIR
	Are underrepresented students thriving? • Funding • Mentoring • Career outcomes • Retention • TTA/TTD • Climate	GD [Exit surveys, TTA, TTD, Competitive Edge Surveys] OIR DSC Possible: OEOD/TitleIX data
	International students – what is reliance on this population? How comfortable do the international students feel in the program?	GD Local
	Current perceived barriers to diversification of graduate program	Local

What work are the students doing? (Opportunities and expectations) (for money, tuition, and job- related experience)	On average, how many quarters are students on fellowship, how many do they work as TAs, how many as GSRs?	GD
	What is the type of labor provided?	Local
	How many of the program's students work in other departments? Where do the students go?	GD
	How do graduate students contribute to the scholarly mission of the department?	Local
	How well do the GSR expenditures track against research expenditures?	GD
	How does the mix of TA/GSR/fellowship support for UCI students compare to those at peer institutions?	OIR - CGS Survey for NSF
	Do students feel they have adequate/appropriate opportunities to do jobs that will prepare them for future careers (e.g., lead instructor positions, research work, internships, pedagogical fellowships)	GD [AGS, UCOP, and Exit Surveys]
Student Employment Pathways	What is the job market like in the discipline? What type of job are students expecting? What type do they end up with when they go on the market? Salary expectations and results Do these differ by area within discipline?	Local OIR [Academic Analytics] GD [Exit surveys]
	What are the viable options for jobs that use their PhD/MFA beyond tenure-track positions at a research university? How much of a requirement is a PhD vs. MFA vs. other graduate degree for these options?	Local OIR/GD
Financial Support	Average current time to degree compared to average current quarters of financial support	GD
	Proportion of current and recently graduated (last ten years) students who have financial support for their entire graduate career	GD

	Current average support level for students (and comparisons to other similarly situated programs (e.g., AAU public universities, other UCs).	GD/OIR
	(How) are students funded in the summer? Throughout the year?	Local GD
	Level of **new** debt incurred while at UCI as part of the graduate programs	Financial Aid
	Sources of funding, including research grants, training grants, etc.	Local GD OR
	What would the program invest in if they had more resources	Local
Human Support	Quantity, quality, and engagement of faculty mentors. Staff support.	Local GD [Exit surveys, AGS survey]
	Does evidence suggest students are receiving adequate mentoring from faculty? How successful are students in meeting their goals, matching with advisors, completing their degrees?	GD [AGS, Exit, and UCOP surveys; TTA/TTD]
	Wellness indicators of students in program (mental health, students reporting problematic culture), segmented by URM status or other high-risk groups	GD [AGS, UCOP surveys]
Education/Academic Offerings	How much do the grad programs courses serve other parts of campus/the interdisciplinary mission?	OIR
	Are there reasons a program needs to be in heavy growth mode, such as new school/department, substantial investment by outside donor or research effort, evidence that the program is part of national growth trend, etc.?	Local

Program Questionnaire, with suggested word count limits

Current Goals for the Graduate Program

1. Please describe any particular reasons that your program would prefer to grow, contract, or remain constant at this time. [100 words]

   Given your currently expected budget resources, what would be the TOTAL number of PhD/MFA students in your program five years from now? [50 words]

   What would be the ideal TOTAL steady-state number of PhD/MFA students in your program? Describe the resources you would need [50 words]

2. Please list the top universities and programs you view as most competitive with your program in drawing prospective students. [50 words] What are your aspirations for your program in relation to this group? [100 words] How do you aim to accomplish this? [100 words]

Employment and Financial Support

1. Please describe the most common employment scenarios for your graduate students. [100 words] (e.g., leading discussion sections, grading and support for teaching, conducting research related to their dissertation, conducting research unrelated to their dissertation, etc.)
2. Please describe other ways in which the program's graduate students contribute to the research and/or creative missions of the department. [250 words]
3. How do PhD & MFA students currently support themselves in the summer? (what is your best estimate regarding the proportion of students involved in each activity)
   a. Savings
   b. Jobs unrelated to discipline
   c. Return to home country to work
   d. Internships and jobs related to discipline
   e. GSRs
   f. ASEs
   g. Other [20 words]
4. What would be your top three priorities to invest in student support if provided with new strategic funds? [250 words]

Mentoring, Preparation, and Future Prospects

1. How does mentoring of graduate students work in the program (e.g., goal setting, use of IDPs and annual reviews, assignment/matching of advisors, advisor only or multiple mentors)? What do faculty expect of their advisees and vice-versa? [250 words]
2. Is there a sufficient number of faculty to mentor your current students? [20 words]
3. Is there a sufficient number of students for current faculty? [20 words]
4. What is the job market like in the discipline? What type of job are students expecting? What type do they end up with when they go on the market? What are the viable options for jobs that use their PhD/MFA beyond tenure-track positions at a research university (e.g., non TT positions, TT at colleges and universities that are not research focused, corporate or non-profit positions)? How much of a requirement is a PhD vs. MFA vs. other graduate degree for these options? [250 words]
5. What are the most essential challenges and opportunities for your program in these areas [200 words each]:

a. student success and wellness
b. engaging with the outside community, including non-profit, for-profit, and governmental agencies
c. driving improvements in your graduate program's retention and thriving in diversity, equity, and inclusion
d. career placement and professional development

Report of the **APG Workgroup on Reimagining Graduate Education: Part II, AY 2021-22**

Executive Summary:

The second APG workgroup to examine PhD and MFA programs at UCI met biweekly throughout the 21-22 academic year. The group assessed a variety of institutionally held data, including those held centrally by Institutional Research, the Graduate Division, as well as reports from each program directly. This report describes a series of general recommendations that apply to PhD and MFA programs broadly, the campus's approach to student support, and best practices moving forward, as well as detailed recommendations from each of five areas identified by the 20-21 workgroup: competitiveness, recognition, and reputation; financial support levels for programs; diversity, equity, and inclusion; and contributions to the campus mission. The committee also analyzed each PhD and MFA program on campus individually. Each group member analyzed all of the programs in two to three schools, depending on the size of the school. Group members did not analyze their own schools but were present for discussions of them. Appendixes to this report include: the workgroup roster (appendix 1); the charge and description of methods (appendix 2); a table of key metrics recommended to be examined annually (appendix 3); and a program-by-program assessment of individual programs on the basis of these criteria (appendix 4).

Recommendations

We considered at length factors viewed as intrinsic to the quality of graduate programs:

- Insufficiently competitive funding packages
- Poor placement records
- Insufficient mentoring and advising
- Program climate, as well as program cultural and structural issues
- Extended time-to-degree and retention issues
- Inadequate teacher training

Despite the close alignment of faculty and graduate programs, the task group neither considered nor assessed the quality of faculty except in so far as such is reflected in external rankings. We did consider the quality of mentoring and advising as reflected in student exit surveys and graduate division records.

All reviewed programs faced at least some of the challenges mentioned above, and low student morale in particular, while concentrated in some schools more than others, appears to be a fairly widespread phenomenon and one that UCI needs to address. Further, these challenges interact in many ways. Poor placement, for example, may be a function of the job market in a given field, insufficient mentoring, and/or a problematic campus, departmental, or program climate[1]. Likewise, climate data suggest that the impact of various constraints may be

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[1] On the definition of "climate" in the university and more specifically UC context, see https://campusclimate.ucop.edu/what-is-campus-climate/.

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distributed unevenly within programs, with URM students sometimes reporting greater concerns about program climate than non-URM students. Addressing each of these constraints sufficiently is necessary given our goals as a campus in terms of diversity, equity, and inclusion as well as quality and excellence.

The flipside of what have identified as challenges are various strategic goals aimed at enhancing program quality:

- Providing more competitive and consistent funding
- Paying better attention to placement
- Increasing the diversity of the student body and pathways to the professoriate
- Identifying and implementing best practices for mentoring and career advising, including both academic and non-academic careers

Below we have broken out our recommendations for addressing these challenges and achieving our goals with overarching recommendations according to the five primary categories of assessment that we were given. This report is advisory to the Provost, but many recommendations would need to be implemented via the Graduate Division and/or within the schools. Such local change requires oversight, encouragement, and resources of school deans and associate deans. The Provost nonetheless can play a fundamental role in implementing recommendations that he deems worthwhile by communicating priorities, rewarding progress, and requiring accountability.

<u>General Recommendations</u>:

1. Provide data to inform allocational and programmatic decisions, help pinpoint problem areas, and increase transparency.
    - All data dashboards developed in conjunction with and provided to the APG workgroup should be provided to leadership in schools and departments (chairs, deans, associate deans), to key senate committees, and to other interested parties on campus as appropriate. Doing so will provide transparency as well as data and instruments for decision makers.
        - Data on program quality and diversity should be available to all UCI faculty and staff.
        - Financial data should be restricted to appropriate administrators.
        - A subset of data (e.g., information on time-to-degree and placement) should be easily available to all prospective applicants and students.
    - Data dashboards should be maintained and updated annually.
    - Data sharing should be accompanied by messaging noting that the information provided, while illuminating and helpful, does not provide a complete picture and that consequently the use of this information for decision-making should be approached with circumspection.
    - All data sharing must respect personal privacy and confidentiality.

2. Treat infrastructure as integral to graduate training and the graduate-student experience.

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- Annually, all programs should analyze the infrastructure needs of their graduate programs and consider infrastructure enhancements to improve the graduate-student experience. Infrastructure in this context is not exclusively or mainly laboratory space and equipment but includes, non-exhaustively: physical space for graduate student research and social interaction, staffing resources in programs (including both student-facing and general administrative support), support for research (including travel), materials for scholarly production, and digital infrastructure (e.g., software, hardware, storage).
- Program leaders (chairs et al.) should continue to work with their local development officers to identify opportunities for fundraising, should work to identify strategic grant opportunities, and should pursue other funding that targets infrastructure enhancements for graduate programs.
- Research and scholarship infrastructure on some parts of campus is limited and unevenly distributed. Shared investments might help mitigate these problems, as well as providing efficiencies and cost savings. The workgroup considered these infrastructure issues outside of its charge, but thought that the identification of areas of developments, possibilities for shared investments, etc., should be studied.

3. Continue efforts to expand summer support.
- When asked what they would do with additional resources, nearly every program reported they would prioritize summer support. Outliers were programs that already provided substantial support during the summer.
- The Graduate Division in conjunction with the office of the Provost has already begun to implement a long-range plan for summer support. Anything that might accelerate this plan and/or include currently enrolled students would be an effective use of resources.

Recommendations by Category of Assessment:

1. Competitiveness, recognition, and reputation
The workgroup generally held that our main aim should be to address program quality, placement, diversity, and other campus goals and that reputation and recognition—national and international—should follow improvements in these areas. That is, as an institution, we should generally pursue our aims and not chase rankings. However, should enhancing rankings be determined by the campus to be a priority, school deans and associate deans should be informed of this campuswide strategy and allowances made for program titles that are not ranked (e.g., interdisciplinary and niche programs, where UCI wants to and often does excel are rarely covered adequately, if at all, by the usual ranking outlets). Notwithstanding, we recommend the following two strategies to enhance rankings:
- School deans, department chairs, and other leaders would need to support programs selectively. Moving in the rankings once in the top ten is particularly challenging and very low ranked programs may not provide substantial return on investment. However, we suggest that programs in the 15-30 range (US News & World Report; see appendix 5) may make ideal targets for moving into higher tiers that come with substantial return on reputation and other metrics.

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- The Office of Strategic Communications and the Graduate Division should work together to ensure a comprehensive strategy around messaging about the positive changes we are making on campus, the excellence of our research, and in particular the excellence of our graduate programs. Such messaging should be further pursued at the school level.

2. Financial support levels for programs
   - If the Provost has financial resources to commit to graduate programs, then the top priority would be to help provide competitive funding packages for incoming students, where UCI all too often significantly lags vis-à-vis aspirational, comparable, and even less highly regarded programs.
     - Additional funding might logically be drawn from self-supporting programs. Thorny issues such as taxing and redistributing a portion of SSGPDP revenues are, however, beyond the expertise and remit of the group.
     - Schools are currently mixed in their approach to distribution of graduate funding, with some choosing egalitarian funding models rather than differential funding models. Those with more even distributions may be limiting their ability to provide their top programs with the resources to recruit their most promising applicants and in so doing raise the profile of these programs. As above, the group did not consider itself empowered to provide pointed financial guidance in this regard but did wish to point out the consequences of the strategy.
     - Additional resources should be provided and allocated centrally to support strategic priorities of the campus (e.g., recruiting competitively, diversification of the professoriate, decreasing time to degree, improving job prospects). In particular, the committee identified summer and dissertation writing fellowships as essential to these priorities and would provide good return on investment.
   - Increase extramural funding and other external resources for PhD and MFA students, in particular fellowships–federal, state, donor, corporate, and foundation–and training grants.
   - Encourage and enable programs that have over-enrolled to reduce cohort sizes and increase support per student. Several programs recruit cohorts that the job market (both academic and otherwise) and current funding resources cannot adequately support. The reasons that programs have grown beyond their capacity to support and place students include:
     - Historically, programs were encouraged to grow to achieve certain undergraduate-graduate student ratios deemed appropriate for an AAU R1 institution.
     - Faculty wish to regularly teach graduate seminars and train graduate students.
     - Programs with large undergraduate populations have large instructional needs.

     These reasons are insufficient justifications for recruiting graduate cohorts wherein a large proportion is not placeable. Programs that fall under this category should work with the Graduate Division to achieve an appropriate balance of size and support. The Provost, Graduate Division, and the Academic Senate should work together to develop incentive structures and consequences for programs to meet an appropriate sustainable size.

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Note: because larger cohorts do provide benefits in terms of climate and program cohesion, some programs may wish to explore every-other-year admissions cycles.

- Substantial financial support is delivered to PhD and MFA students in the form of Academic Student Employee (ASE) appointments. These appointments include Teaching Assistant, Reader, and Teaching Associate titles.
    - Programs remain confused about these allocations and nearly all believe they are not provided enough support in the form of ASE positions. A task force to examine this issue in particular may be warranted.
    - Fee Remission, including tuition and other mandated fees, a student support mechanism, is allocated alongside ASE positions, a portion of the instructional budget. Conversion of these funds to fellowships is a major part of some schools' strategy for dealing with graduate funding but technically out of policy. It may be useful to examine these policies and ensure they are working as intended.
- Financial support for PhD and MFA students must include infrastructure for their scholarly work (e.g., travel funding, data and IT support, research materials, artistic production materials, staff support).

3. Diversity, equity, and inclusion
    - We recommend a comprehensive assessment strategy be launched across OIE, Academic Planning, and the Graduate Division to determine return on investment of the many diversity-related programs, events, recruiting tactics, fellowships, and so forth.
    - Forms of diversity other than those on which data is already collected and readily available (race/ethnicity and gender) should be folded into our understanding of inclusion at the graduate level and attempts made to recruit and to enhance the climate for, e.g., disabled students, LGBTQIA+ students, first-generation students, and other groups as appropriate.
    - Graduate programs generally aim to recruit the best possible applicants from across the globe. Within the UC system we also understand that many of our international students will go on to contribute directly to the California economy. International students contribute to the diversity of our campus, albeit in ways that are not registered as such by official categories. The campus needs to assess and formalize how international students fit into our understanding of diversity.
    - Chairs, directors, and faculty more generally need to be more aware of climate problems, as well as program cultural and structural issues, and be more analytical and proactive in addressing these problems. Further, these problems are sometimes worse with respect to diversity categories (gender and/or URM status). Low student morale is frequently a symptom of poor climate, although morale is also impacted by other factors such as placement. Attention to program quality and related factors should mitigate these problems but should not be taken as a panacea.
    - This group did not review the most recent surveys of graduate students taken as part of the WSCUC reaffirmation process and recommend review of such data to augment these findings.

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4. Career pathways and opportunities
   The workgroup identified placement as the most important metric for assessing the quality of graduate programs, and yet we came to realize that the data on placement that we have are unreliable and incomplete.
   - Exit surveys, through which students self-report on their job status at the time of graduation, are limited by the time point (just before degree conferral) of the data collection.
   - Programs may or may not consistently track their students in the years following graduation when data are likely to be more indicative of program success (or failure).
   - Academic Analytics provides the campus with some information on placement, but these are not easily analyzed for key outcomes of interest (e.g., jobs in the "education sector" is not a sufficiently fine-grained category and includes K-12, adjunct faculty, as well as tenure track faculty).

   Placement should be an explicit and supported goal of graduate education. Career mentoring and advising should be improved for both academic and non-academic positions. While all programs should provide additional support to increase the likelihood that students can get top-tier academic positions as well as positions in non-R1 institutions, in industry, and otherwise outside of academia (so-called alt ac positions), the Graduate Division in conjunction with the Provost might consider funding to be awarded competitively for programs to develop better placement support and strategies. Programs awarded funding should present on their successes, failures, and otherwise share the results of their development schemes.
   - Campus and/or programs must improve alumni tracking and analysis of placement data. These data should be published to ensure transparency to applicants and to improve attention to placement issues by program and campus leaders.
     ○ Improved centralized and local tracking of alumni who complete their PhD and MFA programs.
     ○ Improved tracking of those who change to an MA/MS from a PhD program and/or leave without any degree.
   - A follow-up APG workgroup dedicated to graduate placement and alumni career success is warranted.
     ○ Such a workgroup could gather best practices on placement and career development, consider how to better coordinate career advising within programs and centrally, make recommendations on how to better differentiate categories of placement, etc.
     ○ This group should also consider questions about what constitutes a "quality" placement and career (e.g., requirement of a PhD or MFA for the job, full-time versus part-time or adjunct, tenure-track or not, salary levels and total compensation) and be mindful of the variations in what successful placement looks like across the disciplines.
     ○ A follow-up group should also seek to understand what else alumni may value from their degrees beyond career placement (e.g. critical thinking and communications skills, a broader and/or deeper view of their discipline, and so on). Partnering with efforts to assess similar outcomes in the undergraduate population may be useful.

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- The Graduate Division, School Deans and Associate Deans, and Graduate Program Directors should develop plans to actively set appropriate expectations for graduate students around career pathways. Such efforts might include but not be limited to transparency around career outcomes for applicants as well as direct querying of applicant plans for careers outside of tenure-track academic jobs, particularly in disciplines in which obtaining a tenure-track position is unlikely.

5. Contributions of program to campus teaching, research, and service missions
   - In many programs, better school-level and departmental pedagogical training is needed to augment the DTEI training that already exists. Such training would not only enhance the undergraduate learning experience but in many instances better position graduate students on the academic job market in particular. Training, as appropriate, should include training in English communication for those whose first language is other than English.
   - Given how differently various programs contribute to the research, teaching, and service missions of the campus, the group decided that general statements on these items was not possible. However, before any substantial changes are made to size and scope of programs, their contributions to core campus missions (research, educating undergraduates, training for careers in areas of economic demand and social need) should be considered. Should programs radically change their sizes, for example, the impact to the ability of campus to hold courses, produce arts programs, conduct research, and so on should be considered and alternative staffing models must be developed.

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Appendix 6: UC Santa Cruz Final Report of the Implementation Task Force for Inclusive Excellence in Graduate Education (2023)

6A: Joint Senate-Administration Working Group on Graduate Education
Final Report: March 2021

Retrieved from https://senate.ucsc.edu/senate-meetings/agendas-minutes/2020-2021/2021-may19-senate-meeting/scp--1999-jwg.graded.finalreport.march2021rev.pdf

6B: Implementation Task Force for Inclusive Excellence in Graduate Education Final Report - Completed March 10, 2023

Retrieved from https://graddiv.ucsc.edu/about/reports/itf-final-report.pdf in October 2023

**Joint Senate-Administration Working Group on
Graduate Education
Final Report: March 2021**

Executive Summary
Strengthening the graduate enterprise, cultivating research excellence and professional development, advancing diversity, and providing an environment for student success and welfare are key drivers to maintaining and enhancing UCSC's status as an outstanding public research university. The Joint-Senate Administration Working Group on Graduate Education (JWG) was created following consultation between Graduate Council and the Chancellor and CP/EVC, and launched in spring 2020. The work of the JWG focused on: 1) developing a comprehensive revenue analysis of the graduate enterprise[1] at UCSC, including the recently enacted 5 year funding guarantee for doctoral students (2 years for MFA); 2) exploration of alternative graduate student funding models, including close examination of the "cohort model" implemented at UC Riverside; 3) the development and analysis of the Faculty Graduate Education Survey (FGES), intended to elicit the perspectives of faculty on graduate education and funding at UCSC, and particularly views on the carrying capacity of different programs; and 4) analysis of Graduate Division staffing levels at UC campuses.

The JWG's revenue analysis brought clarity, even to working group members, regarding the budget allocation "rebenching" process and its on-going fiscal benefits to UCSC and the graduate enterprise. The budget allocation rebenching process modified how state enrollment-based revenues flowed to UC campuses. It resulted in the allocation of $24.3M in one-time funding to UCSC distributed over the 5 year transition period beginning in 2012-13, and ongoing doctoral student enrollment-based funding for 1,778 doctoral enrollments, which was equivalent to a 12% doctoral:undergraduate student enrollment ratio established at the start of the rebenching process. Notably, because of extensions of the rebenching process, UCSC continues to receive state enrollment-based funding for 1,778 doctoral students, even though actual doctoral enrollments have not reached this goal (doctoral enrollments were 1,420 as of end fall quarter 2020). The difference between the dollars UCSC receives for the 1,778 doctoral enrollments versus the dollars it would receive for actual doctoral enrollments constitute upfront "aspirational" dollars to support doctoral enrollment growth. In 2018-19 (a focus year for the JWG's revenue analysis), the amount of state enrollment-based funding UCSC received for these 441 "aspirational" doctoral enrollments (i.e., 1,778 - 1,337 actual) was $8.4M. One implication of continuing to receive state funding for more doctoral students than UCSC actually has is that increases in doctoral enrollments will not lead to additional state enrollment-based revenue until UCSC surpasses 1,778 doctoral enrollments. It is also possible that UCSC may lose those aspirational growth dollars if doctoral enrollments do not grow. Given this, the campus should develop concrete strategic plans with UCOP for the stabilization of these aspirational doctoral enrollment dollars, and articulate specific plans and resources to support doctoral enrollment growth that are sensitive to disciplinary desires for growth. Indeed, the Faculty Graduate Education Survey (FGES) revealed important differences across disciplines in the desire and ability to sustainably grow doctoral enrollments.

The JWG's revenue analysis also revealed that Academic Student Employee appointments (ASEs, which includes Teaching Assistants [TAs] and Graduate Student Instructors [GSIs]) play an outsized role as a means of support for graduate students at UCSC. A relatively large proportion (65%) of core state enrollment + tuition-based revenues spent supporting graduate students in 2018-19 were spent on graduate student ASEs (TAs, GSIs), the majority of which were TAships. The question of whether this is appropriate

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[1] Here, the term "graduate enterprise" is used to encompass the totality of revenues generated by graduate student enrollments, how those funds are spent supporting graduate students, the instructional roles played by graduate students, and the faculty advising and co-curricular aspects of graduate education.

depends on whether we as a campus view the primary role of ASE appointments as supporting undergraduate or graduate education, or a mix of both. The former (i.e., ASEs primarily supporting undergraduate education) implies that only 28% of the core state + tuition revenue generated by the graduate student enrollments was spent supporting graduate students (with the majority of this funding supporting the undergraduate enterprise). However, if ASE appointments are considered as the primary mechanism to support graduate students, then 78% was spent supporting graduate students (i.e., $48.5M of the $62M core revenues generated by graduate student enrollments + tuition). Regardless, this analysis shows that UCSC relies very heavily on ASE appointments (especially TAships) to support doctoral/MFA students, especially in the Arts, Humanities, and Social Sciences Divisions, where there are fewer opportunities for other forms of student support (fellowships, extramurally-funded GSRs, etc.). This not only makes graduate students highly dependent upon TAships over the course of their graduate careers, with implications of prolonged time to degree, but it also makes programs and academic divisions (some much more than others) highly reliant on TA/GSI allocations that are not currently predictable over the 5 year guaranteed graduate student support window, creating unnecessary funding uncertainties for both students and programs. This sentiment is underscored by a majority of faculty respondents to the FGES across all divisions, who stated that students are serving as ASEs too often at the cost of prolonging their time to degree.

It is noteworthy, however, that many faculty respondents also indicated that they do not receive sufficient TA support for their courses. This conundrum between faculty thinking that graduate students TA too much over their careers versus many faculty thinking they do not receive sufficient TA support for their courses suggests a possible opportunity to strengthen both graduate and undergraduate education by creating a mix of alternative modes of instructional assistance that does not rely so heavily on graduate student ASEs. The JWG recommends that programs and the broader campus explore creative modes of instructional assistance to complement graduate student ASE appointments, with the goal of reducing the number of ASE quarters a graduate student would serve over their career in favor of additional fellowship quarters, while at the same time maintaining or increasing the level of instructional assistance to qualifying undergraduate courses.

The JWG revenue analyses also revealed that a relatively modest amount of extramural funding is directed to supporting graduate students ($20.4M in 2018-19), which is 29% of the total amount spent supporting graduate students in 2018-19, and 12% of total extramural funds brought to campus that year. Similarly, a relatively low proportion of gifts and endowment-based extramural funding (15% of total extramural) was spent to support graduate students in 2018-19. Together, these findings suggest that there is capacity to grow support for funding graduate students through growth in extramural funding and associated Indirect Cost Recovery (ICR), and by growing gifts and endowments overall by increasing fund-raising efforts for graduate student support at all levels of the institution, including University Relations, Graduate Division, and the academic divisions. Supporting this suggestion, respondents to the FGES stated that more graduate student support could be worked into extramural funding proposals, but also noted that there are barriers to doing so, chief among them being the high cost of supporting graduate students, which is nearly on par with the cost of supporting postdocs. This issue should raise significant concerns for the campus, i.e., there is the potential that increasing costs of graduate student support could lead to proportional reductions in the number of graduate students included in extramural proposals. In light of this, the JWG believes it is imperative that faculty-identified challenges/barriers for increasing both the number of extramural proposals submitted, and the proportion of proposals with significant graduate student support, including levels of institutional support, workload recognition and accommodation, etc., be addressed. In addition, we recommend that the campus develop a cost-sharing program for faculty supporting graduate students as GSRs on extramural funding in order to reduce the costs of supporting graduate students on extramural funds, and to incentivize including more graduate student support in extramural proposals.

The Faculty Graduate Education Survey (FGES) was conducted during Phase III of the JWG, with 293 responses (a 47% response rate) from all academic divisions (Arts n = 40, BSOE 44, Humanities 55,

PBSci 75, Social Sciences 79). The findings of the survey are incorporated throughout the report, and in this summary, we call out a few key findings and resulting recommendations.

- Access to doctoral/MFA students is important to faculty. However, the degree to which having access to doctoral/MFA students advances, versus takes time away from faculty's research, and hence the extent that advising/mentoring doctoral/MFA students may directly contribute to faculty advancement, varies by academic division and faculty race/ethnicity and gender. In general, faculty in BSOE, PBSci and, to a lesser extent, SocSci, are much more likely to view advising doctoral/MFA students as an important factor in advancing their research. Faculty in the Arts & Humanities are, conversely, much more likely to state that while advising doctoral/MFA students is important to them, mentoring/advising doctoral/MFA students does not advance their research, and even takes time away from it. These trends are even more pronounced with underrepresented minority (URM) faculty, and especially URM women.
- Many faculty do not feel that their efforts mentoring/advising doctoral/MFA students are adequately valued or recognized in the personnel merit review process, especially faculty in Arts, Humanities, and SocSci divisions. There were also notable race/ethnicity and gender based differences, with women being ~20% less likely than men to state their work advising doctoral/MFA students has been adequately recognized and valued in their personnel reviews by their home department. Further, URM faculty are more likely to disagree/strongly disagree that their work advising/mentoring graduate students is adequately recognized and valued as part of their department/program teaching workload.
- Less than a quarter of all respondents stated their doctoral students can finish within 5 years. However, when faculty survey respondents were asked to consider whether their doctoral students could finish within 5 years under "ideal" conditions (with guaranteed and increased financial student support), a substantially increased majority of ~60% stated their doctoral students could finish within 5 years, with notable increases across all academic divisions.
- The vast majority of faculty stated that the campus should provide higher levels of financial support to doctoral/MFA students, as the current amount of funding is not sufficient to meet costs in the Santa Cruz market. Importantly, the gap between salary/stipends and cost of attendance disproportionately and negatively impacts underrepresented graduate students and therefore impedes the campus' efforts to increase graduate student diversity. Most faculty respondents state UCSC should provide most of a doctoral/MFA student's cost-of-attendance, and at least some support for MA/MS students, though many also stated that graduate students, including doctoral/MFA students, should be partly obligated to meet some of their cost-of-attendance needs as an opportunity cost to the student for the training they receive in earning a higher degree.

Based on these key findings, the JWG recommends that all departments/programs and academic divisions update and/or develop clear and comprehensive faculty workload policies that appropriately quantify, recognize and value the workload associated with graduate student mentoring and advising, and graduate education more broadly, on par with undergraduate education, formal classroom teaching, etc., that is appropriate for the discipline[2]. The disciplinary, gender, and race/ethnicity differences in whether advising/mentoring doctoral/MFA students actually advances the faculty mentor/advisor's research, and whether the workload associated with advising/mentoring graduate students is adequately recognized in personnel actions, should be carefully considered in establishing mentoring/advising expectations and workload. Second, given that time-to-degree varies by discipline and that even under ideal circumstances, a substantial number of doctoral students will take more than 5 years to earn their degree, the JWG

[2] The Joint Senate Administrative Task Force on Graduate Growth's 2015 report also recommended that divisions and programs produce and implement comprehensive faculty workload policies, which was taken up by the VPAA. The FGES findings indicate that those efforts remain incomplete, and that workload policies should be further examined for recognition of differences across discipline, race/ethnicity, and gender.

concludes that the 5 year guarantee should not foreclose flexibility for departments to pursue additional funding (i.e., from ASE and/or extramural fellowship opportunities) for students beyond their 5 year guarantee.

The 5/2 year funding guarantee for doctoral/MFA students was announced in winter 2020, and became effective fall 2020[3]. JWG's revenue analysis of the 5/2 year funding guarantee shows that it is readily feasible at current funding levels, so long as supporting doctoral/MFA students is prioritized over master's students. However, current practices for funding graduate students, which operate on annual or semi-annual timeframes at the divisional and program level, do not provide sufficient stability and predictability for planning graduate student support over the 5/2 year guarantee window, nor do they factor in possible graduate enrollment growth.

One important aspect of the 5/2 year support guarantee is that it suggests, in concept, a potential framework to plan for and parameterize the cost of supporting doctoral/MFA students through the majority of their careers, and may provide the foundation for developing alternative graduate student funding models to achieve greater funding stability and predictability. To optimize divisional and programmatic planning in conjunction with the 5 year guarantee, we recommend that the central funding (ASEs and Block) for doctoral/MFA students be stabilized and rendered more predictable over the 5 year period over which groups of students are covered by the guarantee. To this end, the JWG recommends that the Graduate Division, in conjunction with Planning and Budget, develop a plan to implement a cohort funding model at UCSC. The cohort model (as practiced at UCR) guarantees the amount of central funding over a 5 year span for an entering graduate class, ensuring a 5-year fiscal planning window for programs. Optimally, such cohort funding would define both central fellowship funding and a minimum level of ASE funding for a cadre of entering doctoral/MFA students. The principal challenges for implementing a cohort funding model are: (1) developing 5 year central funding commitments, and (2) establishing baseline long-term ASE/fellowship commitments to programs that allow planning for a 5 year guaranteed period of support for entering cohorts of doctoral students (2 years for MFAs). This plan would allot a designated amount of fellowship support over a 5/2 year duration of a doctoral/MFA student cohort, and guarantee a base level of ASE support per doctoral/MFA student each year. In this plan, support of doctoral/MFA students would be a primary driver of baseline ASE funding allocations to divisions and programs, with undergraduate and large master's course enrollments being secondary drivers.

Lastly, our findings indicate that the Graduate Division is significantly under-resourced, with likely significant negative impacts on the graduate enterprise. The level of staffing within the Graduate Division, which may be an indicator of graduate student programming and support capabilities, is the lowest in the UC system and well below what is expected based on graduate student enrollment numbers. Comparison with our sister campuses suggests that the number of graduate enrollments at UCSC (1,908 doctoral + MFA + master's in 2018-19) could justify ~23 graduate division staff and administrators, ~35% more than the current number of staff and administrators (14.5 as of 2 years ago; fewer now). The JWG recommends increased investment in the Graduate Division to provide much needed support for students and the graduate enterprise more broadly, including staffing and programming to support significantly increased efforts to recruit, retain, and graduate demographically diverse students, enhanced professional development

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[3] On January 27th, 2020, UCSC Chancellor Larive announced two programs to enhance support for doctoral and MFA students: the 5/2 year support guarantee program for doctoral/MFA students, which provides a minimum level of support equivalent to that of a 50% teaching assistantship; and an annual $2,500 housing supplement fellowship program.
https://news.ucsc.edu/2020/01/chancellor-new-graduate-student-programs.html#:~:text=First%2C%20beginning%20in%20fall%202020,a%2050%20percent%20teaching%20assistantship

opportunities for students across all disciplines, and improved student success. Supporting this need, a majority of FGES respondents believe their students are more likely to get professional (versus tenure track academic) jobs post-degree, underscoring the importance and likely impact of enhanced professional development programming across all institutional levels (departments, divisions, etc.). These findings reflect and align with national trends in graduate education.

Recommendations

Priority	Recommendation	Responsibility
Highest	Develop a 5/2 year doctoral/MFA student Cohort Funding Model for implementation at UCSC. The model should provide stability and predictability in graduate student support over a 5/2 year timeframe, and address specific plans and resources to support doctoral enrollments in conjunction with department/program goals and aspirations, given that there are important differences across disciplines in the desire and ability to sustainably grow doctoral enrollments.	CP/EVC, P&B in conjunction with Grad Div, academic divisions, CPB and GC
Highest	Build the graduate funding model into the proposed Academic Resource Model (if adopted), in which support of doctoral/MFA students is a driver of baseline ASE funding allocations to divisions and programs, with undergraduate and large master's program enrollments as secondary drivers.	CP/EVC, P&B, Grad Div, academic divisions, in consultation with CPB and GC
Highest	Utilize the JWG framework of Graduate Division data to conduct a cost-benefit analysis to determine whether increased fellowship support for doctoral/MFA students would reduce time to degree and offset the increased costs of support.	P&B, Grad Div, in consultation with CPB and GC
Highest	Continue analysis of graduate student support needs, and ways the campus can better meet these, including possibly through enhanced fellowship support. This should be reassessed regularly.	P&B, Grad Div, CPB, GC
Highest	Increase Graduate Division staffing resources to provide much needed support for students and the graduate enterprise more broadly, including programming to support significantly increased efforts to recruit, retain, and graduate demographically diverse students, enhance professional development opportunities for students across all disciplines, and improve student success.	CP/EVC

High	Institute clear and comprehensive faculty workload policies for all departments and divisions, appropriate for the discipline, that appropriately recognize and value efforts associated with mentoring and advising graduate students.	VPAA/APO, academic divisions, departments, and Senate committees
High	Establish a committee to investigate whether demographic and disciplinary inequities exist in faculty workload associated with graduate advising and its recognition in personnel actions.	VPAA/APO, in consultation with academic divisions, departments, and Senate committees
High	Provide incentives for including more graduate student support in extramural funding proposals, and from philanthropic sources. These may include enhanced institutional support for grant/proposal writing; development of a cost-sharing program for faculty supporting graduate students as GSRs on extramural funding, enhanced prioritization of graduate support by University Relations, etc.	Chancellor/ CPEVC/OR/UR/P&B
High	Evaluate the effectiveness of the Master's Incentive Program (MIP) in strengthening graduate education, including its role in supporting or growing doctoral and/or master's programs. More broadly, evaluate the role that master's programs should play in the graduate education ecosystem, including whether and how to grow master's programs and where interest and capacity exists.	CPB, GC, Grad Div, academic divisions, P&B
High	Institutionalize and regularize updating the data framework annually on: revenues generated by and spent in support of graduate students; graduate student level data on time to degree and funding support, so as to inform strategic and tactical decisions to strengthen graduate education.	P&B and Grad Div, in consultation with CPB and GC
Medium	Develop enhanced professionalization programming within the Graduate Division, academic divisions, and departments to better serve professional development needs of graduate students.	Grad Div, in conjunction with academic divisions, departments, and Career Center
Medium	Develop policies that better integrate and recognize LSOEs and Research Faculty as graduate student mentors/advisors and valued contributors to graduate education.	VPAA/APO in conjunction with divisions, departments and Senate committees

1. Introduction

Maintaining and enhancing UCSC's status as an outstanding public research university, and its ability to attract top faculty and provide the most stimulating undergraduate educational experience all depend upon strong and vibrant graduate programs. The Joint-Senate Administration Working Group on Graduate Education (JWG) was created following consultation between Graduate Council and the Chancellor and CP/EVC, and broadly charged with conducting a revenue analysis of graduate funding in order to assess the totality of revenues generated by and spent on graduate students and the ways in which these are currently used. These analyses were to inform JWG recommendations to stabilize and strengthen the graduate enterprise in the near and long term, centering on diversity, broadly defined (see the full charge at the end of the report, Appendix A). The JWG addressed the charge by conducting a comprehensive analysis of revenues generated by graduate student enrollments and funds spent supporting graduate students, conducting a faculty graduate education survey, performing analysis of the 5/2 year doctoral/MFA support guarantee, assessing alternative models for supporting graduate students, and comparing Graduate Division staffing across the UC campuses. Here, the term "graduate enterprise" is used to encompass the totality of revenues generated by graduate student enrollments, how those funds are spent supporting graduate students, the instructional roles played by graduate students, and the faculty advising and co-curricular aspects of graduate education.

The JWG conducted its work in three phases. In Phase I, the JWG developed principles, listed below, to guide the JWG's efforts, constructed a comprehensive dataset framework capturing the totality of revenues and expenditures related to graduate student support, broken down by academic division for 2018-2019, and identified key challenges that the campus and graduate enterprise will need to face moving forward in order to meet the 5 year funding guarantee. In Phase II, the revenue analysis was expanded to encompass 3 years (2016-17, 2017-18, 2018-19), and a Faculty Graduate Education Survey (FGES) was developed (see Appendix B) to assess faculty's perspectives on i) the importance of advising/mentoring graduate students in their profession and the workload associated with those efforts, ii) the roles of Academic Student Employee (ASE) appointments to support graduate students and their cost of attendance, and iii) the importance of demographic and disciplinary diversity in the graduate enterprise. The JWG's work concluded in Phase III in fall 2020 and early winter 2021 with further expansion of the revenue analysis of graduate student funding to the department/program level, the administration of the Faculty Graduate Education Survey, collection/analysis of Graduate Division data on graduate student support practices over the past decade, financial modeling of the 5/2 year doctoral/MFA student funding guarantee, analysis of graduate division staffing across the UC, and development of an alternative graduate student cohort funding model. Some aspects of the JWG's work remains incomplete, such as a comprehensive analysis of the Master's Incentive Fund Program (MIP) and the role of master's enrollments in the graduate education ecosystem, as well as a comprehensive analyses of Graduate Division student enrollment and support data, with a recommendation that those efforts continue through appropriate Senate and Administration collaboration.

It was apparent at the onset of JWG's work that there existed varying degrees of knowledge among group members about how the campus supports graduate education at UCSC, including: the recent history and context shaping the graduate growth initiative; how state and tuition revenues are generated; how the rebenching funding model affects graduate enrollment revenues; what UCSC is obliged to regarding rebenching and graduate growth enrollment numbers; and how revenues flow to UCSC and are used to support graduate students.

2. Guiding Principles and Approach

The JWG reviewed previous reports (Senate and Administrative) related to graduate education, including two systemwide statements and reports, which set out principles and goals related to the graduate

enterprise[4]. The JWG developed a set of principles to guide current efforts. These are to:

- **Strengthen the Graduate Enterprise**: UCSC's graduate enterprise is integral to our teaching, research, and service mission and a vital component of our R1 and AAU statuses. We are thus committed to strong graduate programs and the overall strengthening of graduate education at UCSC.
- **Cultivate Research Excellence and Professional Development**: We favor an enhanced educational environment that supports the development of outstanding scholars and practitioners by creating outstanding research environments coupled with strong career-relevant professional development opportunities.
- **Advance Disciplinary, Faculty and Student Diversity**: We are committed to disciplinary and student diversity, knowing that human and planetary well-being, now and in the future, requires critical and creative knowledge from diverse sources. To this end, we are committed to ensuring that our graduate programs attract, support, retain, and graduate a diverse body of students.
- **Provide an Environment for Student Success & Welfare**: A climate that engenders belonging and dignity is central to the mission of UC and is critical to student success and welfare. We are committed to a strong and healthy graduate education institution that provides students the time, financial support, and creative environment they need to execute their studies and research successfully.

3.   Revenue Analysis Process and Overview

A significant proportion of the JWG's effort was spent on conducting a comprehensive revenue analysis of how UCSC supports graduate students. One key finding is that prior to JWG's efforts there were reporting mechanisms for analyzing graduate student financial support expenses, but no means to readily assemble necessary data for a comprehensive revenue analysis of graduate support practices. This circumstance has likely affected, if not precluded, the comprehensive analysis of graduate support that should serve as a basis for major decision making. As each of these pools of data were obtained in disaggregated form (i.e., multiple spreadsheets, and multiple worksheets per spreadsheet), the JWG developed a data management and analyses framework that integrated the revenues generated by (via enrollment and tuition) and spent supporting graduate students (including ASE employment, fellowships, and extramural sources). This data framework allowed for analysis across datasets that previously had been difficult if not impossible to achieve. JWG worked with the Office of Planning and Budget (P&B) to develop a programmed workflow to automate the generation of integrated datasets for subsequent years moving forward so as to facilitate the reporting process of this information.

3.1 Revenue and expense analysis of graduate student support

Revenue analysis of graduate student support was performed for three fiscal years (2016-17, 2017-18, 2018-19) using data acquired through Planning and Budget to determine and summarize: 1) revenue generated by graduate student enrollments through core state enrollment and tuition; and 2) money spent supporting graduate students through ASEs, GSRs, and fellowships, etc. The major revenue sources that are spent to support graduate students are: 1) core state enrollment and tuition revenues, which includes tuition and state enrollment-based revenue; 2) extramural revenues, which includes contracts, grants, gifts and endowments; and 3) other funding sources, which include sales and service, indirect cost recovery, and student fees.

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[4] Documents reviewed included: Joint Senate Administrative Task Force Report on Academic Structures (2013); Senate Executive Committee Guiding Principles for Graduate Growth (October 2014); Joint Senate Administrative Task Force on Graduate Growth Report and Recommendations (June 2015); Graduate Council Statement and Report on Strengthening and Growing Graduate Programs at UCSC (May 2017); Graduate Council Report on Growing and Sustaining Graduate Student Research (May 2019); Academic Council Re: UCPB Letter on Graduate Student Funding (April 2020); Report of the Joint Advisory Committee on Graduate Student Support (Attiyeh Report) (January 1991).

Notably, the revenue data from P&B are based on graduate student FTE, and not individual students per se, and thus were not readily aligned with support of specific students. Therefore, the JWG also conducted analysis of data from the Graduate Division[5] on how students were actually supported over the course of their graduate career to determine: 1) what proportion of students have gone without any form of institutional support (i.e., self-funded or funded by external entities) during some portion of their graduate career; 2) what percentage of graduate students received full, partial, or no funding, by degree type (doctoral and master's), academic division and department; 3) actual time-to-degree by degree type, division and department; and 4) correlational analysis of the relationship between funding, funding-type and time-to-degree. This project revealed some important gaps in UCSC's data, such as funding external to UCSC that some graduate students are supported by, and grants such as Fulbright, SSRC, or support of international students from a student's country of origin, etc. Those analyses are ongoing and will be reported separately.

Core state enrollment-based revenue arises from state dollars that come to campus based on graduate student enrollments. State enrollment dollars are based on a per student amount ($7,623 in 2018-19), and a weighting factor based on student status (i.e., undergraduate, graduate, or professional). Undergraduates and master's students are weighted 1.0 (i.e., campus received $7,623 per enrollment in 2018-19), while doctoral students are weighted 2.5 ($19,058 per enrollment in 2018-19). These state-based revenues for student enrollments arose out of a budget allocation "rebenching" process implemented by the University of California Office of the President (UCOP) in 2012-13 that affected how state enrollment-based revenues flowed to UC campuses. The UCOP budget allocation rebenching process resulted in the allocation of $24.3M in one time funding to UCSC distributed over the 5 year transition period beginning in 2012-13, and ongoing doctoral student enrollment-based funding for 1,778 doctoral enrollments, which was equivalent to a 12% doctoral:undergraduate student enrollment ratio established at the start of the rebenching process. Notably, because of extensions of the rebenching process, UCSC continues to receive state enrollment-based funding for 1,778 doctoral students, even though actual doctoral enrollments have not reached this goal (doctoral enrollments were 1,420 as of end fall quarter 2020). The difference between the dollars UCSC receives for the 1,778 doctoral enrollments versus the dollars it would receive for actual doctoral enrollments constitute upfront "aspirational" dollars to support doctoral enrollment growth. In 2018-19, the amount of state enrollment-based funding UCSC received for the 441 "aspirational" doctoral enrollments (i.e., 1,778 - 1,337 actual) was $8.4M. One implication of continuing to receive state funding for more doctoral students than UCSC actually has is that increases in doctoral enrollments will not lead to additional state enrollment-based revenue until UCSC surpasses 1,778 doctoral enrollments. It is also possible that UCSC may lose future aspirational growth dollars if doctoral enrollments do not grow.

In 2018-19, **core state revenue** from doctoral enrollments (including aspirational) was $33.9M, based on 1,778 doctoral enrollments, a 2.5 weighting factor, and a per student FTE funding level of $7,623. State revenue from master's enrollment (397 student FTE) created $3M in revenue. Though state dollars from graduate enrollment has increased by 8% from 2014-15 ($31.3M) to 2018-19 ($36.9M), this increase did not occur because of doctoral enrollment growth, but rather because of increases in the state budget, which provided $7,038 per student FTE in 2014-15 and increased to $7,948 in 2019-20. By comparison, state revenue from undergraduate enrollment in 2018-19 (16,441 student FTE) resulted in $125M to UCSC. As a percentage of total state revenue from total student enrollments ($162M), state dollars generated from undergraduate enrollments was 77% of UCSC's total student enrollment-based revenue, doctoral

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[5] Data obtained from the Graduate Division included: a 10 year longitudinal dataset (from 2010-2019) with data per student including anonymized ID, division, department, and degree type (PhD, DMA, MFA, MA, MS), year and quarter enrolled, enrollment status (full time, part time, in absentia, on leave), support level (full, partial, none), and type of support (TA, GSI, GSR, fellowship). The JWG worked with P&B to restructure these data into a single analyzable dataset, and to create a programmed workflow to make analysis semi-automated for the Graduate Division moving forward.

enrollments (1,778) generated 20.9%, and master's enrollments generated 1.8% of total student enrollment-based revenue.

4. Key Accomplishments, Findings and Implications

4.1 Bird's eye view summary of revenue analysis

Revenue analysis was performed for three fiscal years (2016-17, 2017-18, 2018-19), which showed similar trends in revenues generated by graduate enrollments and spent on graduate students. In light of this similarity, and to simplify the presentation of findings, only data from the 2018-19 fiscal year are summarized here.

The primary total revenues generated through core state and tuition enrollments of UCSC graduate students in 2018-19 was $62M. For the same year the total amount spent supporting graduate students at UCSC was $71M. Of this $71M, $48.5M (68%) came from core state + tuition revenues, and $20.4M (29%) from extramural revenues, which included grants, contracts, endowments and gifts. The remaining $2.1M (3%) came from "other" funding sources such as sales & service, indirect cost recovery (ICR) and student fees. Notably, the costs associated with educating graduate students (e.g., costs of faculty, program and administrative staff, facilities, services, etc.) were not considered in this analysis.

Most of the graduate student support coming from **core state** funds was through ASE appointments (65% of core state/43% of total (core state + extramural + other) expenses), the majority of which were TAships (98% of ASE assignments). Other significant forms of core support came in the form of fellowships from the Graduate Division (19% of core state/13% of total) and core state-funded GSRs (13% of core/9% of total).

The majority of graduate student support from **extramural funds** (grants and gifts) came as GSRships (70% of extramural/20% of total), with the remainder through fellowships from academic divisions (16% of extramural/4.5% of total) or the Graduate Division (13% of extramural/3.7% of total).

The majority of graduate student support from **other** sources (indirect cost recovery, student fees, sales and service) came as GSRships (40% of "other"/ 1.2% of total), Graduate Division fellowships (26% of "other"/0.8% of total), and other fellowships (25% of "other/0.8% of total).

Implications. A bird's eye view of the revenue analysis shows that UCSC spends more supporting graduate students than is generated from their core state and tuition-based enrollment revenues, underscoring the importance of extramural revenues in supporting graduate students. It also highlights the need for continued advocacy for a state / higher education compact that values graduate education and the unique role of the UC in California's tripartite higher education system. Moreover, since graduate students appointed as ASEs generate no net tuition revenue (as the institution pays itself for their tuition), the difference between the cost of supporting/educating graduate students versus the revenue their enrollments generate is further exacerbated. Of course, one vitally important factor is that ASE appointments, which are a primary mechanism for supporting graduate students, are also critical for supporting the undergraduate teaching mission of the campus (see below), and hence play a major role in the campus' undergraduate revenue generation.

4.2 UCSC relies heavily on ASE appointments (especially TAships) to support doctoral/MFA students, especially in the Arts, Hum and SocSci divisions, where there are fewer opportunities for other forms of student support (fellowships, extramurally-funded GSRs, etc.).

A relatively large proportion (65%) of core state enrollment + tuition-based revenues spent supporting graduate students in 2018-19 were spent on graduate student ASEs (TAs, GSIs), the majority of which were TAships. The question of whether this is appropriate depends on whether we as a campus view the primary role of ASE appointments as supporting undergraduate or graduate education, or a mix of both. The former (i.e., ASEs primarily supporting undergraduate education) implies that only 28% of the core state + tuition revenue generated by the graduate student enrollments was spent supporting graduate students (with the majority of this funding supporting the undergraduate enterprise). However, if ASE appointments are considered as the primary mechanism to support graduate students, then 78% was spent supporting graduate students (i.e., 48.5M of the $62M core revenues generated by graduate student enrollments + tuition) (see Figure 1). This reliance on TAships as a critical in support of undergraduate education *and* as the primary mechanism for supporting graduate students has several important implications. First, in some divisions it makes graduate students overly dependent upon TAships over the course of their graduate studies, and quite likely extends their time-to-degree. And second, it makes departments and divisions (some much more than others) unduly reliant on TA/GSI allocations that are not currently predictable over the 5 year guaranteed doctoral student support window.
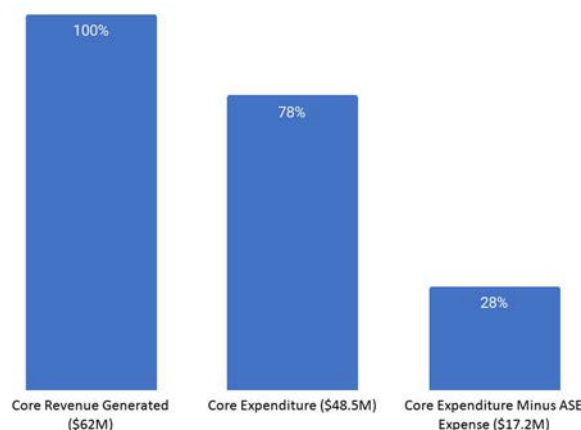

Figure 1. Percentage of total core state + tuition-based revenue generated by graduate student enrollments ($62M) that was spent supporting graduate students if ASE appointments are included ($48.5M, 78% of total core revenue), and if ASE appointments are excluded ($17.2M, 28%) for 2018-19.

Results from the Faculty Graduate Education Survey (FGES) suggest that if the two support cases represented above (78% vs 28%) represent philosophical extremes of the role of ASEs in university education, then UCSC has leaned too much towards treating ASEs as the primary mechanism to financially support graduate students. For example, while nearly two-thirds of all faculty respondents (63%) report that they typically advise students who serve as ASEs for two or three quarters/year, a majority (54%) of faculty stated that students should serve as an ASE for no more than one to two quarters/year, and a clear majority (73%) indicated that serving as an ASE for two or more quarters/year prolongs a student's time to degree.

The majority (67%) of all respondents stated that the typical time to degree for their doctoral students was 6 years or more, while only a quarter (23%) stated that the typical time to degree is 5 years or less[6]. BSOE was an exception to this, with a majority (55%) of BSOE respondents stating that the typical time to degree

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[6] Appendix D of the UCSC Academic Senate Manual lists normative (i.e., maximum) time to degree for doctoral students as 6 years for most doctoral programs, while four programs have an approved 7 year normative time to degree.

for their doctoral students was 5 years or less. This is corroborated by longitudinal analysis of data from that Graduate Division, which shows that from 2010-2019, only 37% of doctoral students finished in 5 years or less (see Table 1).

Table 1. Percent of doctoral students enrolled between 2010-2019 who earned their degree in less than 5 years, 5 years, or more than 5 years, by academic division.

Time to Degree (doctorates)	Arts (n=39)	BSOE (n=147)	Hum (n=56)	PBSci (n=292)	SocSci (n=151)	Grand Total (n=685)
< 5 years	15%	22%	11%	12%	9%	14%
5 years	18%	21%	21%	27%	17%	23%
> 5 years	67%	56%	68%	60%	75%	64%
Total	100%	100%	100%	100%	100%	100%
7 years or more	23%	14%	36%	7%	28%	16%

It is noteworthy that less than a quarter (23%) of all faculty respondents stated their doctoral students can finish within 5 years (ranging from 4% in Humanities to 55% in BSOE). But when asked to consider this same question under "ideal" conditions (i.e., fewer quarters spent as ASE, higher salary/stipends to meet cost of attendance needs), this increased substantially to a majority (59%) of all respondents stating that their doctoral students could finish within 5 years, with notable increases across all academic divisions (up to 40% in Arts and 84% in BSOE). Moreover, in a follow up open-ended question where respondents were asked to elaborate on the differences between their perceived ideal and current state conditions favoring 5 years or less time to degree, 79% of respondents providing relevant answers defined their ideal state as providing greater financial support for graduate students with commensurate reduced need to serve as an ASE as frequently. However, when respondents were asked about the overall level of TA support for courses that they teach, over half (58%) indicated that they receive insufficient TA support for courses they teach.

Implications. There are multiple factors that contribute to doctoral student time to degree, including program curricula and research needs, availability of research support (fellowships, GSRships, etc.), and the frequency that students serve as ASEs over their career - all of which vary across programs and disciplines. Since actual time to degree has significant implications for graduate student support that should be considered within the context of the 5 year doctoral student funding guarantee, the JWG recommends analyzing the cost of lowering barriers to degree completion relative to the benefit of graduating more doctoral students earlier and with an enhanced educational experience. This should be done in combination with expanded efforts to enhance extramural and fellowship funding to augment ASE sources of student support.

The FGES responses also raised somewhat of a conundrum between the heavy reliance on ASEs to support doctoral/MFA students, and the sentiment from a majority of faculty respondents across all divisions that students are serving as ASEs too often at the cost of prolonged time to degree, versus many faculty indicating that they do not receive sufficient TA support for their courses. This conundrum suggests a possible opportunity to strengthen both graduate and undergraduate education by creating a mix of alternative modes of instructional assistance that does not rely so heavily on doctoral/MFA student ASEs (e.g., doctoral student TAs, along with other forms of instructional support such as non-student tutors, readers, lecturers, as appropriate for the discipline), with the goal of reducing the number of ASE quarters a graduate student would serve over their career while at the same time increasing (or at least not

diminishing) the level of instructional assistance to qualifying undergraduate courses. Possible strategies for achieving this goal are presented in the Alternative Funding Models section below.

4.3 A relatively modest amount of extramural funding is directed to supporting graduate students, suggesting there is capacity to grow support for graduate students through growth in extramural funding and associated Indirect Cost Recovery (ICR).

The JWG revenue analyses revealed that a relatively modest amount of extramural funding is directed to supporting graduate students ($20.4M in 2018-19), which is 29% of the total amount spent supporting graduate students, and 12% of total extramural funds brought to campus that year. Similarly, a seemingly low proportion of gifts and endowment-based extramural funding (15% of total extramural) was raised to support graduate students in 2018-19. Overall, nearly three quarters (70%) of extramural funding supporting graduate students was through GSRships, with the remainder through other divisional fellowships (16%), Graduate Division fellowships (13%), etc. Finally, of the extramural funding-based revenue spent supporting graduate students, 86% came from contracts and grants, while 15% came from gifts and endowments.

The amount of extramural funds spent supporting graduate students varied greatly across divisions, with PBSci and BSOE spending $11.2M and $5.8M respectively, and SocSci ($1.7M), Hum ($334K), and Arts ($160K) generating and spending considerably less. Even within PBSci and BSOE departments, there are large differences in extramural support for graduate students. Six departments supported their graduate students with approximately half of total funding (core state + extramural + other) coming from extramural sources: Molecular, Cell, and Developmental Biology (58%); Ecological & Evolutionary Biology (52%); Earth and Planetary Sciences (51%); Astronomy and Astrophysics (51%); Biomolecular Engineering (47%); and Electrical and Computer Engineering (43%). Three departments supported graduate students with at least 30% of funding coming from extramural sources: Microbiology and Environmental Toxicology (40%); Ocean Sciences (38%); and Chemistry & Biochemistry (31%). Six departments supported graduate students with at least 20% of funding coming from extramural sources: Environmental Studies (27%); Education (22%); Applied Math (21%); Computer Science and Engineering (21%); Computational Media (20%); and Sociology (20%).

According to the FGES, a majority of faculty stated they have and/or are interested in pursuing extramural funding, but there are barriers that require division specific solutions. Nearly all respondents in BSOE and PBSci have pursued federal or state grants, while a lower but still majority of respondents (>55%) in Arts/Hum/SocSci disciplines have done so. Approximately three quarters or more of Arts/Hum/SocSci respondents have pursued grants from foundations/non-profits. In general, a relatively small proportion of respondents across all divisions (<15%) have pursued endowments or gifts (excepting BSOE respondents, where nearly 60% have pursued corporate gifts). In combination with responses to the open ended question about what could be done to support increased efforts to pursue extramural funding (e.g., course relief, increased institutional assistance and support), these data suggest that greater institutional investments should be made to support the pursuit of more gifts and endowments, and increased extramural funding in general. Moreover, a majority of respondents across all divisions said they would increase their efforts to secure extramural funding that directly supports graduate students if they received what they considered appropriate campus support, such as matching funds from the campus for extramural funding raised for graduate student support, or availability of seed funds for developing early-stage ideas and/or writing proposals. Respondents also made clear that the high cost of supporting doctoral/MFA students was the predominant barrier to adding more graduate student support into their extramural funding efforts.

Only one third of respondents (31%) stated that campus support/recognition was adequate for their extramural funding efforts, and that providing teaching relief and greater divisional support would be most helpful in their efforts to secure more extramural funding. That said, whether deploying ~12% of

extramural award dollars to support graduate students is reasonable as an institution-wide average represents a separate, difficult-to-address question. From the survey, faculty stated that more graduate support could be worked into proposals, but that there are barriers to doing this, chief among them being the high cost of graduate students. This suggests that future increases in the cost of graduate student support could lead to proportional reductions in the number of students included in extramural proposals.

Implications. Together, these data suggest that there is capacity to grow support for graduate students through growth in extramural funding and associated Indirect Cost Recoveries (ICR), and by focusing on growing gifts and endowments overall by increasing fundraising efforts for graduate student support at all levels of the institution, including University Relations, Graduate Division, and the academic divisions. This capacity can be assessed and analyzed at both the divisional and department levels, as there is much variation in extramural funds raised between and within divisions. Despite those differences, there are opportunities for growth across divisions by addressing barriers associated with overall support for grant/proposal writing, and for graduate support within grants/proposals more specifically. Similarly, the relatively low proportion of gifts and endowment-based extramural funding (15% of total extramural) that supports graduate students suggests that there is an opportunity to more strategically focus on growing gifts and endowments overall by increasing fundraising efforts for graduate student support across the institution.

Within BSOE, PBSci, and SocSci divisions, there are notable differences between departments in the extent to which they rely upon core state vs extramural funding sources to support graduate students. These differences suggest that follow up analyses at the division/department level should explore the underlying reasons for this as a means to normalize these sources of graduate support across departments to the extent possible - such as possibly targeting institutional and divisional resources and support to increase extramural funds for graduate students in the departments with the greatest potential to derive benefits. The relatively low use of extramural funding sources to support graduate students in the Arts and Humanities suggests that those departments might benefit from greater institutional support, enhanced fund-raising efforts, and recognition of faculty workload associated with mentoring/advising graduate students.

4.4 Graduate students are integral to the success of faculty, UCSC as a public R1 research institution, and to providing the next generation of California's innovators, leaders, and academicians, but faculty perspectives differ on the extent that advising/mentoring graduate students is adequately recognized in their workload expectations.
The vast majority of faculty across academic divisions felt that being able to work with doctoral/MFA students is important to them (in total, 89% agree/strongly agree). However, the extent that faculty's research is seen as advanced by having access to doctoral/MFA students notably varied across academic divisions. For example, in BSOE, PBSci, and SocSci 100%, 85%, 67% of faculty, respectively, agree/strongly agree that advising doctoral/MFA students is an important factor in advancing their research, whereas in Arts & Humanities only 40% agree/strongly agree. Conversely, faculty in the Arts and Humanities divisions were more likely to respond that advising/mentoring doctoral/MFA students takes time away from their research (e.g., for Humanities and Arts respondents, 53 - 63% agreed/strongly agreed, whereas 12, 19, and 38% agreed/strongly agreed in BSOE, PBSci and SocSci, respectively). Moreover, underrepresented minority (URM) faculty in Hum/SocSci/Arts are less likely to agree/strongly agree than Caucasian and "all other" demographics that having access to doctoral/MFA students is an important factor in advancing their research (i.e., 36% compared to 57% and 50%, respectively)[7]. Similarly, female URM

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[7] The FGES allowed respondents to self-identify race/ethnicity and gender via open-ended questions. There were a variety of responses that reflected the diversity of respondents' racial/ethnic self-understandings. In order to create categories that would allow analysis of patterns, if any existed, the JWG interpreted the responses and reported the following categories: Caucasian, URM, and "all others" (See Appendix E for details). For gender, the majority of responses were female, male and no answer.

faculty in the Hum/SocSci/Arts are least likely of all groups to agree/strongly agree (only 29%) that having access to doctoral/MFA students is an important factor in advancing their research. In general, these percentages are higher and the differences between demographic groups are smaller in BSOE/PBSci.

Conversely, faculty in the Arts, Humanities, and Social Sciences divisions were more likely to respond that advising/mentoring doctoral/MFA students takes time away from their research (e.g., for Humanities and Arts respondents, 53 - 63% agreed/strongly agreed, in Social Sciences 38% agreed/strongly agreed, whereas only 12 - 19% agreed/strongly agreed in BSOE and PBSci). When looking at the percent of faculty who strongly agree (as opposed to agree/strongly agree), important demographic differences emerge: URM in Hum/SocSci/Arts are more likely to strongly agree that advising/mentoring doctoral/MFA students takes time away from their research (32%, compared to a campus total of 17%). Female URM in Hum/SocSci/Arts are also most likely of all groups to strongly agree on this question (43%, compared to a campus average of 17%).
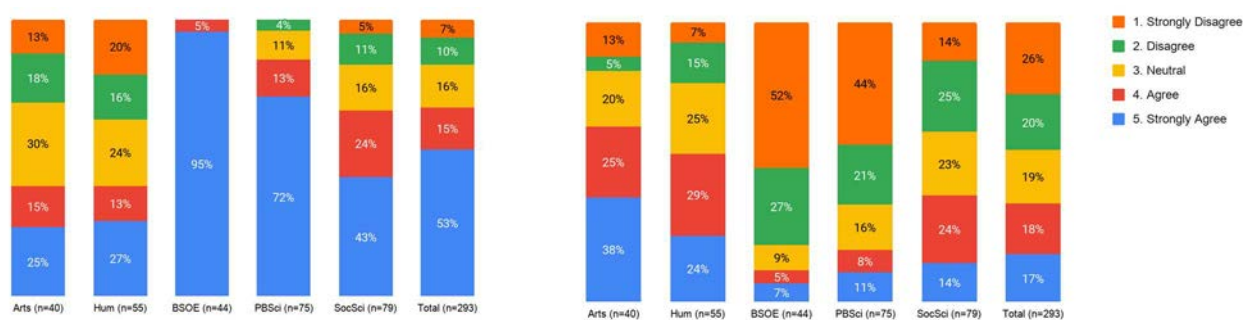

Figure 2. Left panel, proportion of faculty responses to the question "Having access to doctoral/MFA students is an important factor in my research". Right panel, responses to question "At present, advising/mentoring doctoral/MFA students takes time AWAY from my research".

Moreover, many faculty do not think that their efforts mentoring/advising graduate students are adequately valued or recognized in the personnel merit review process, especially for faculty in the Arts, Humanities, and SocSci divisions. While nearly 60% of respondents agreed/strongly agreed that their work advising graduate students is adequately recognized by their department/program in their personnel reviews, this dropped off sharply with the stages of review beyond the department (38% at the divisional review stage, 29% at the CAP review stage). There were also notable divisional/disciplinary and gender-based differences. For example, 53 - 68% of respondents in BSOE, Humanities, PBSci, and SocSci, but only 35% of respondents in Arts agreed/strongly agreed that their graduate student mentoring efforts were adequately recognized by their home department. Moreover, female faculty respondents are ~20% less likely than their male counterparts to state their work advising graduate students has been adequately recognized and valued in their personnel reviews by their home department (i.e., 49% of female versus 67% of male respondents), a disparity that was slightly greater in Arts, Humanities, and SocSci versus BSOE and PBSci. URM faculty are more likely to disagree/strongly disagree that their work advising/mentoring graduate students is adequately recognized and valued as part of their department/program teaching workload (48% URM compared to 37% total). Lastly, there are perceived disparities with unrecognized mentoring. For example, female and male URM faculty are more likely to state they do professional development mentoring (94% and 90% respectively, compared to a 75% campus total). Female faculty are more likely to state they do "other kinds" of mentoring (e.g., personal mentoring), with female URM faculty being the most likely of all groups (82% vs 72% campus total). These responses illustrate a continuing perception among faculty that the workload advising graduate students, the institutional expectation that faculty should be engaged

with and contribute to graduate education, and the perception of institutional reward structures are not sufficiently aligned.

Implications. The FGES suggests that the extent to which mentoring/advising students actually advances or hinders a faculty's research might be affected by a faculty's discipline, gender, and race/ethnicity. This interplay of discipline, gender, and race/ethnicity with faculty workload should be carefully considered when establishing mentor/advisor workload expectations. Further, the perception of faculty that their graduate advising efforts are not sufficiently recognized in their personnel reviews - a perception that is heightened among female and female URM faculty, needs to be addressed at all levels of the institution. If they do not already exist, all departments/programs and academic divisions should be mandated to develop clear and comprehensive faculty workload policies that appropriately recognize and value workload associated with graduate student mentoring and advising, and graduate education more broadly, on a par with undergraduate education, formal classroom teaching, etc., as appropriate for the discipline. In addition, the JWG recommends a study that examines the interplay of discipline, gender and race/ethnicity on workload and faculty advancement.

4.5 The 5/2 year doctoral/MFA student guarantee is feasible and fits within our current funding envelope, so long as supporting doctoral/MFA students is prioritized over master's. However, current practices for funding graduate students are not sufficiently predictable to support planning for the 5 year guaranteed support horizon - thus, an alternative graduate student funding model is needed.
In winter 2020, the campus announced a 5 year funding guarantee for doctoral students (2 years for MFA), effective fall 2020. The FGES shows that this recently enacted initiative is an important step in the right direction that will help strengthen the graduate enterprise. It was also clear that most faculty respondents (75%) believe UCSC should provide all of a doctoral/MFA student's cost-of-attendance. Most faculty (65%) also believe UCSC should provide at least some support for MA/MS students (13% stated full support, 15% most, and 37% partial support). However, many faculty (42%) also believe that doctoral/MFA students are partly obligated to meet some of their cost-of-attendance needs as an opportunity cost for the training they receive in earning a higher degree, ranging from 29% in Hum to 54% in SocSci (see Figure 3 below).

For 2020-21 the projected total cost of supporting the 1,202 doctoral/MFA students eligible for guaranteed funding (including the new $2,500 housing fellowship supplement) is $51.5M, or $42.8K per eligible student.[8] To put that number in context, $51.5M is $19.5M less than the $71M spent supporting all graduate students (doctoral, MFA, and master's) in 2018-19, but $3M more than total core state + tuition-based revenues ($48.5M) spent supporting graduate students in that same year, indicating that core state + tuition graduate enrollment-based revenues alone will not be sufficient to meet the 5/2 year funding guarantee for doctoral/MFA students. However, if all sources of revenues used to support doctoral/MFA students are considered at their proportional contribution based on analysis of 2018-19 data (i.e., 68% from core, 29% from extramural, etc.), then $35.5M of the needed $51.5M (68% of $51.5M) would come from core state revenue funds, and $14.5M from extramural funding (29% of $51.5M).

This shows that the amount of core state + tuition enrollment-based funds needed to meet the 5/2 year funding obligation for doctoral/MFA students is less than what was actually spent supporting all graduate students, and that current practices for supporting doctoral/MFA students are able to meet the 5/2 year funding obligation moving forward, if supporting doctoral/MFA students remains prioritized over supporting master's students. This is, in part, because extramural funding sources play an important role in supporting doctoral students, and because undergraduate instructional needs require more TAs/GSIs than

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[8] Based on 3 quarters of TAship plus tuition and fees. In 2020-21, the baseline salary for ASEs is $22,569; the tuition/benefits/GSHIP for CA residents is $17,808.

needed to meet the 5 year guarantee. In some cases master's students, or undergraduate or non-student course assistants, have filled this need. For example in 2018-19, 28% of full time master's students were fully funded, in many cases by serving as ASEs (see Table 3).

Table 2. Percentage of doctoral students fully or partially funded by year from UCSC funds.

Doctoral Student Support	2016-17	2017-18	2018-19	2019-20
# Doc students enrolled (3 quarter average)	1282	1333	1382	1429
Fully funded	874	914	1001	1075
% total enrolled fully funded	68%	69%	72%	75%
# Full time enrolled (excludes in absentia)	1198	1251	1286	1336
Full time enrolled fully funded	851	883	971	1036
% of full time enrolled who are fully funded	71%	71%	75%	78%
Part time enrolled	46	38	39	40
Part time fully funded	4	5	5	7
% part time, fully funded	8%	14%	14%	17%

Table 3. Percentage of master's students fully or partially funded by year from UCSC funds.

Master's Student Support	2016-17	2017-18	2018-19	2019-20
Total master's Student bodies enrolled	444	470	441	454
Fully funded	86	97	115	120
% total enrolled fully funded	19%	21%	26%	26%
# Full time enrolled (excludes in absentia)	421	440	415	426
Full time enrolled fully funded	85	96	115	112
% of full time enrolled who are fully funded	20%	22%	28%	26%

Nevertheless, current graduate student support practices, which operate on annual or semi-annual timeframes at the divisional and program level, do not provide sufficient predictability for planning graduate student support over the 5 year guarantee window, nor do they factor in possible graduate enrollment growth. Also, the normative (i.e., maximum) time to degree for the vast majority of doctoral

programs is 6 years (four programs have normative times of 7 years)[9] - something that should also be taken into account in doctoral student funding models. It is also noteworthy that our current system for allocating ASE FTE to divisions, and disbursement of ASEs to programs by divisional deans, is based solely on numbers of undergraduate enrollments within divisions/programs. Hence, undergraduate enrollment fluctuations within divisions and programs can directly impact the amount of ASE-based graduate support available to a program, and jeopardize the ability of programs to fulfill the 5 year guarantee with sufficient predictability.

For comparison, the Graduate Division block fellowship allocations to programs, which are used to make first year funding offers to new doctoral/MFA students and support continuing students, are based primarily on a program's 3 year average doctoral student enrollments. Recently, the block fellowship amount across the campus equated to about $4,800 per doctoral student per year. Support of graduate students through GSR appointments can, of course, not only depend on faculty extramural funding success, but also hinge on variable federal and state research support opportunities. In order for programs to plan their funding packages for doctoral students over the 5 year guaranteed support window with reasonable confidence, a greater degree of stability of both ASE and fellowship allocations to programs is needed. Such multi-year central funding guarantees to programs were instituted almost two decades ago at UC Riverside with their "cohort" funding system. In this system, the institution guarantees a total amount of funding over the 5 (or 6) year career of a student (discussed more fully in section 4.6). If UCSC adopted a similar graduate student funding model to meet the 5 year funding guarantee, as we propose, our current level of Graduate Division block fellowship funding would require $24,000/student over 5 years (i.e., 5 years x $4,800/year). A more straightforward but modestly more expensive approach might be to increase this amount to two quarters of in-state fellowship support over the duration of an average student's career which, if equivalent to a TAship, would be ~$27,000 over 5-6 years. We believe that such a system, with both guaranteed levels of fellowship funding, and long-term floors on ASE funding to programs, would allow campus programs to not only plan their financial support to match the 5 year guarantee, but also to tailor their support packages so that a subset of students could, for example, receive fellowship support later in their graduate careers to support timely degree completion.

One possible vision of such a cohort system might:

1) Require that support of doctoral/MFA students be a driver of baseline ASE funding allocations to divisions and programs. For example, graduate programs could be allocated a minimum of 1 TAship per year per eligible doctoral/MFA student. Remaining centrally-funded TAships could continue to be allocated based on undergraduate and large master's program enrollments to meet curricular needs (or, be allocated by whatever method is determined for undergraduate courses should we adopt a new Academic Resource Model).

2) Include within the cohort funding model for the 5 year guarantee duration at least two fellowship quarters from the block allocation per eligible doctoral student (support equivalent to a TAship with stipend and fees), that could be deployed to support the student beyond their first year as they progress towards their qualifying exam and dissertation. This would serve to both strengthen graduate education overall, and would likely also reduce time to degree in many programs. We recognize, from a financial perspective, that the campus might need to phase in such a program over several years.

3) For some programs/divisions, additional non-ASE-based support could be garnered for doctoral students through either return funds from master's enrollments (as with the current MIP program), or for those with large undergraduate teaching loads, non-student employees/lecturers could be deployed to meet some instructional assistance needs, thus freeing up support that would have been

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[9] UCSC Academic Senate Manual, Appendix D.

expended on tuition/fees. Deployment of this type of revenue-generating mechanisms would be enabled by enhanced stability of ASE allocations.

Implications. The funding needed to meet the campus' 5/2 year doctoral/MFA funding guarantee is within the envelope of resources that the campus already spends supporting graduate students, and thus is readily achievable in the current fiscal environment. Several qualifiers to this statement are that 1) many graduate students, especially in BSOE and PBSci, are supported as GSRs at a higher dollar level than would be provided by a TA appointment, and 2) the number of graduate students currently eligible for the 5 year guarantee (1,202 in 2020-21) is less than the actual number of graduate students that are actually receiving support.

One important aspect of the 5 year guarantee is that it suggests, in concept, a potential framework to plan for and parameterize the cost of supporting doctoral/MFA students through the majority of their careers, and may provide the foundation for developing alternative graduate student funding models to achieve greater funding stability and predictability. To optimize divisional and programmatic planning in conjunction with the 5 year guarantee, we recommend that the central funding (ASEs and Graduate Division block) for doctoral/MFA students be stabilized and rendered more predictable over the 5 year period over which groups of students are covered by the guarantee. A modified version of UCR's Cohort Funding System, allotting a designated amount of fellowship support over the entire duration of a student cohort, and guaranteeing a base level of ASE support per doctoral/MFA student each year appears the most straightforward way of achieving a funding model that matches the 5 year guarantee commitment. This possibility is discussed further in Section 4.6.

4.6 Alternative Funding Models: The Cohort Doctoral/MFA Funding Model as a Possibility for UCSC

A Brief Description of the Cohort Model. There is one alternate model to the standard block/TA allocation algorithm that has been deployed within the University of California system, and whose intent/logistics match well with our new 5 year guarantee. UC Riverside has, since 2001-02, deployed the Cohort Graduate Funding Model. This involves funding sources being tied to an entering cohort (class) of doctoral students – these funding sources include central funds, ASEs, GSRs, and fellowships. The central administration allocates a designated amount of central funds to an enrolled class (cohort) of students, with the amount allocated per cohort being determined by the number of entering doctoral students in the cohort in a given year. The Graduate Dean works closely with each doctoral program to 1) establish the number of incoming students that will make up the cohort, and 2) map out funding sources (central funds, ASE, GSRs, etc.) to support the incoming cohort over its 6 year normative time to degree. The central funding can, in concept, be expended by the program on students within the cohort at any time over the course of the cohort's existence (up to 6 years, for most programs at UCR). In practice, however, much of the expenditures of central funding by programs occurs in the first 2 years, and the program is responsible for meeting the cohort's funding needs thereafter (e.g., through ASEs, GSRs, and fellowships). As part of the Cohort Model, the Graduate Division works interactively with each program to determine admissions offers and targets, and has oversight over cohort funding expenditures. Another key feature of the Cohort Funding Model is that longer term commitments of other major sources of doctoral student support (ASEs, GSRs) are planned and made at the program and institutional level to provide predictable funding for a cohort over its 6 year normative time to degree.

Comparison with the Block Allocation Funding Model. In comparison, the Block Allocation Funding Model at UCSC has, since the early 2000's, allocated an annual budget to each program via a formula that is currently based on two factors, 1) the 3 year average of their doctoral enrollments (weighted at ~80%), and 2) the program's 3 year average of doctoral degrees awarded (weighted ~20%). At UCSC, each program

declares how much of their block they plan to spend on incoming students versus how much they will reserve for their continuing students. The incoming student allocation is deployed in conjunction with an admissions multiplier (the over-offer ratio) to construct admissions offers. When programs experience lower than expected acceptances (i.e., shortfalls in acceptances), their unexpended block allocation for incoming students is, in concept at least, swept back to the Graduate Division to fund (i.e., back-fill) programs that exceeded their admissions targets and that had, based on their larger-than-expected class, an over-commitment of their block. At UCSC, the Block Allocation Model does allow some unused funding to be retained by the program between years, since 10% of the block (more by request) is allowed to be carried forward by the program between years (this carryforward capability is only occasionally deployed by programs). Expenditures of the Block Allocation are approved by the Graduate Division, and the boundaries of what the block can be spent on are frequently an area of discussion, and at times contention, between the Graduate Division and programs.

Notably, other sources of doctoral student support (ASEs, GSRs, etc.) are managed and allocated via entirely separate and uncoordinated annual (and, in some cases, quarter by quarter) processes to the Block Allocation Model.

To summarize, relative features of the Cohort and Block Models include:
- The Cohort Model has long-term predictability; programs know precisely what the center will provide for the normative-time-to-degree of an incoming doctoral class, and what the program commitments need to be associated with other sources of funding support (ASEs, GSRs, etc.).
- The Cohort Model provides programs with the flexibility to pursue multi-year planning for each class, with central funds prospectively being deployed at any stage during the cohort's normative time. For example, centrally funded quarters designed to assist with thesis completion could be planned years in advance.
- Both the Block and Cohort Models, in tandem with the 5 year guarantee, require a level of commitment to (or at least confidence in) funding levels from other sources (ASE, GSRs, external fellowships) in the out-years.
- The Block Allocation can be expended by programs in ways other than *sensu stricto* fellowships and tuition/fees (e.g., *ad hoc* fellowships that might support research or travel expenses), though whether this practice should continue is a point of discussion.
- The Block Model has greater administrative flexibility, in that it can be toggled upwards or downwards on an annual basis, whereas the Cohort Model delivers a commitment that the central funding complement for a cohort will be delivered at the discretion of the program.

What Changes Would Facilitate Adoption of the Cohort Model in Tandem with the 5/2 Year Guarantee? UCSC doctoral/MFA students are highly dependent on ASE employment and, as internally-derived funding, this means of support could be committed over a multi-year timeframe (research funds/GSRs are, by their nature, somewhat predictable but not guarantee-able). Indeed, 65% of the core funding supporting doctoral students is derived from ASE (TA/GSI) employment. The bulk of these resources are currently allocated to academic divisions based on undergraduate enrollments, and in turn allocated from divisions to programs. Thus, ASE employment opportunities are the primary component of graduate student support funding within the 5 year guarantee, and these are currently subject to both annual fluctuations and long-term trends in undergraduate enrollments. Hence, the long-term ability of programs to engage in realistic long-term financial planning for their cohort hinges on being confident in at least a minimum level of support from ASE/teaching support allocations over time-frames that approach normative times to degree. A possibility for UCSC, driven by the recognition that the teaching support allocation has a tandem role in both instruction and in graduate student support, and that some proportion of funds supporting ASEs comes from graduate student enrollment-based revenues, is that a minimum base level of teaching support (e.g., ASE funding) for a program could be defined based on doctoral student

enrollments in the program, with the balance of the ASE allocation being determined by undergraduate (and possibly master's) enrollments.

Such a guaranteed minimum level of teaching support would generate a mechanism for programs to enhance their level of graduate support through internal prioritizations. Specifically, if teaching support represents an allocated budget for the program to flexibly support its teaching mission, a program could prioritize other creative means to provide instructional support for some classes. Graduate programs that are not affiliated with undergraduate programs or have limited undergraduate course offerings may require alternate funding allocation mechanisms to ensure that their base-level of resources is sufficient for their long-term graduate support needs. Currently, such programs rely on semi-formal understandings with other programs on TA availability, and/or on their students proactively seeking out other ASE opportunities for which they are qualified. If a Cohort Model is adopted, stable base-level funding for such programs might be leveraged by memoranda of understanding with programs or divisions to guarantee a base-level teaching support budget for their graduate students.

Implications: A plan should be developed to implement a cohort funding model at UCSC. The principal challenges for such a plan are: (1) developing 5 year central funding commitments, and (2) establishing baseline long-term ASE commitments to programs that allow planning for a 5 year cohort.

4.7 Graduate Student Support and Cost of Attendance

Issues surrounding graduate student support, both in absolute levels of support per quarter and number of quarters of support over a student's graduate career, have received substantial attention across the campus (and in fact UC system-wide) over the past several years. An important point of consideration is "what is UCSC's obligation to meet the cost of attendance needs of graduate students?" While this question is partly addressed with the implementation of the 5/2 year doctoral/MFA student guaranteed funding policy, the level of guaranteed support does not fully meet the cost of attendance needs of students. The FGES responses show that the vast majority of faculty (87%) stated that the campus should provide higher levels of financial support to our doctoral/MFA students. Further, most faculty felt that what students receive is not sufficient in the Santa Cruz housing market, disproportionately and negatively impacting underrepresented students and the campus' efforts to increase graduate student diversity. In particular, when asked in principle what level of support UCSC is obligated to provide doctoral students (i.e., full, partial, etc.), three quarters (75%) of all respondents stated UCSC should, in principle, provide full support of a doctoral student's cost of attendance. However, when asked a follow-up question about the doctoral student's obligation to financially support their own cost of attendance, with the stated assumption that earning a graduate degree provides opportunity to the student, a little more than half (57%) of all respondents stated "none", 34% stated "partial," and 8% said "most" or "full."

When asked about trade-offs between supporting doctoral students at a higher level and admitting fewer, the same, or more students, only 28% of respondents would trade off higher levels of support with admitting fewer students. In other words, respondents favored admitting the same number or more students, while also supporting them at a higher level. In both cases, there are significant financial implications to the campus and faculty supporting students as GSRs.

If UCSC were to increase its annual housing fellowship supplement, say to $4,500, $6,750, $9,000 or to $11,250, it would cost an additional $2.4M, $5.1M, $7.8M and $10.5M, respectively, given our current student cadre. In lieu of a simple enhancement of the housing fellowship supplement, making summer support more widely available for graduate students would also generate a more fiscally viable annual fellowship for students. While summer support via GSRs is relatively common in the STEM fields that generate significant extramural funding to support graduate students, it is more challenging to access such support in other divisions. In this regard, the recent growth of summer session (for which predicting the

build-out enrollments is beyond the scope of this report) has provided additional support for a subset of our students.
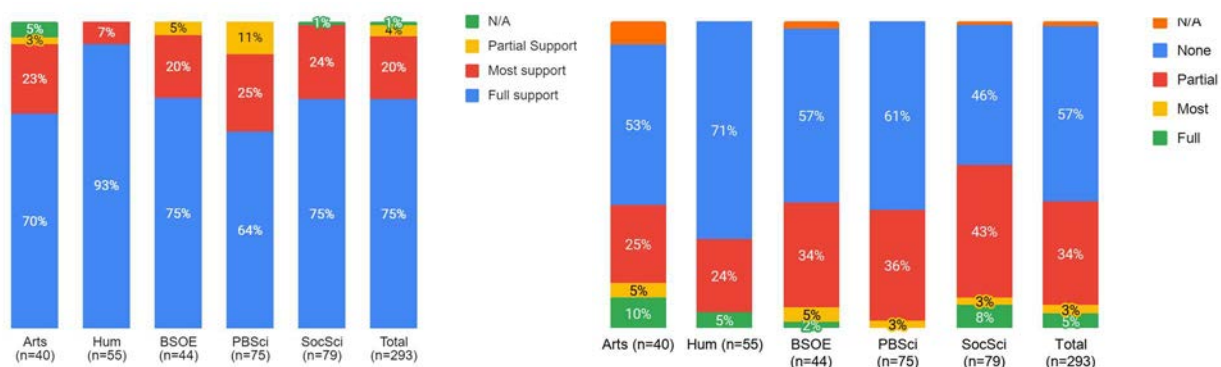

Figure 3. Left panel, proportion of faculty responses to the question "In principle, what do you think are UCSC's obligations to financially supporting doctoral students' cost-of-attendance in your discipline?" Right panel, faculty responses to question "Assuming that earning a doctoral degree provides opportunity to the student, what do you think students' obligations are to financially support their own cost-of-attendance needs in your discipline?"

Implications. Most faculty (87%) believe that UCSC should be providing higher levels of financial support per doctoral student than we do at present, and most faculty (75%) also believe that UCSC is in principle obliged to provide full financial support for doctoral/MFA students in their discipline. However, these responses also display important divisional differences in how respondents view the trade-offs between the number of student admits and the levels of student support, suggesting that approaches for balancing these trade-offs should emerge, at least in part, out of programs and academic divisions.

Collectively the survey shows that the recently enacted policy to provide 5/2 years of guaranteed support to doctoral/MFA students is an important step in the right direction that will help strengthen the graduate enterprise. While most faculty respondents feel UCSC should provide much of a doctoral/MFA student's cost-of-attendance, and at least some support for MA/MS students, there is not a consensus on whether the support levels should necessarily match the cost-of-attendance needs. It may also be considered that the training and opportunity benefits associated with earning a graduate degree are likely of long-term financial benefit to the student, partly justifying the student's cost-of-attendance as an opportunity cost. In addition, there is a clear majority sentiment among faculty respondents that doctoral/MFA students should be provided higher levels of support than they currently receive, though only 28% of respondents would trade off higher levels of support with fewer admitted students. In other words, respondents favored admitting the same or larger numbers of students, while also supporting them at a higher level.

4.8 Faculty perspectives on graduate student training, professional development, and career competitiveness

A series of questions were asked to gain perspective on how faculty respondents felt about whether graduate students in their programs were receiving appropriate training to be competitive for various career paths post-graduation. The vast majority of respondents indicated that their graduates are competitive for academic or professional jobs. Faculty in the Arts (60%) and PBSci (61%) were somewhat more likely to state that doctoral graduates are competitive for tenure track jobs in academia, compared to respondents in the other divisions (Hum 40%, BSOE 50%, SocSci 56%). Faculty respondents in BSOE (98%) and PBSci (93%) were most likely to state that graduates were competitive for applied/professional jobs in their field of discipline, compared to the other divisions (Arts 60%, Hum 64%, and SocSci 77%).

Complementing the above responses, one quarter of all faculty respondents (27%) agree/strongly agree that their department/program has an ethical obligation to train their doctoral/MFA students to be competitive for tenure-track academic jobs over other types of career paths, with faculty in the Arts (43%) and Humanities (34%) being more likely to agree/strongly agree. However, a slightly larger proportion of respondents (36%), especially faculty in BSOE and PBSci (52% each), disagree/strongly disagree with that statement. Regarding MA/MS graduates, BSOE (especially) and PBSci respondents are much more likely to claim that MA/MS graduates from their programs have competitive opportunities in professional jobs outside of academia, including applied/professional jobs in their disciplinary field (BSOE 93%, PBSci 59%), and professional jobs more broadly (BSOE 77%, PBSci 59%), compared to the other academic divisions (<40%).

Implications. Collectively, these responses suggest that a majority of faculty believe their students are more likely to be hired for professional versus tenure track academic jobs, underscoring the need and importance of professional development programming across institutional levels (departments, divisions, etc.).

4.9 The UCSC Graduate Division is Under-Staffed Compared to Other UCs

The level of staffing within the Graduate Division at UCSC, which may be an indicator of graduate student programming and support capabilities, is the lowest in the UC system and well below what it should be compared to graduate student enrollment numbers and staffing at other UC's. Given that graduate student populations may differ somewhat across the UC's, an assessment of the service levels at our campus relative to other UC's should be conducted. Nevertheless, the relationship between total number of Graduate Division staff and total graduate student enrollments (academic and professional) across UCs shows that Graduate Division staffing levels at UCSC are notably below other UCs, including UC Merced with significantly fewer graduate students. A simple best-fit regression to those data suggest that the number of graduate enrollments at UCSC (1,908 in 2018-19) could justify ~23 graduate division staff and administrators (~25 graduate division staff and administrators if only academic master's and PhD enrollments are considered), ~35% more than the number of staff and administrators as of this year (14.5: this number has slightly declined since 2019). Supporting this need, a majority of FGES respondents believe their students are most competitive for professional (versus tenure track academic) jobs post-degree, underscoring the importance and likely impact of enhanced professional development programming across all institutional levels (departments, divisions, etc.).

Implications. These findings suggest greater investment in the Graduate Division is critical to provide much needed co-curricular and service support for students and the graduate enterprise more broadly, including staffing and programming to support significantly increased efforts to recruit, retain, and graduate demographically diverse students, enhanced professional development opportunities for students across all disciplines, and improved student success.

Appendix A:
Joint Senate Administration Working Group on Education:
Charge and Membership

At the February 2020 Academic Senate meeting Chancellor Cynthia Larive announced the establishment of a working group to develop a comprehensive, realistic and actionable plan for strengthening graduate education. The idea of this working group came from conversations with Graduate Council and acting Vice Provost and Dean of Graduate Studies Quentin Williams. We provide the announcement below:

I am pleased to share today the charge and membership for that working group.

As part of our campus efforts to develop a strategic, realistic and actionable plan to enhance graduate student welfare and strengthen graduate programs, the Joint Working Group on Support for Graduate Education is charged with assessing the totality of the revenues related to the graduate enterprise and the ways those revenues are currently used. Specifically, this analysis should include:

A revenue analysis of the graduate enterprise relative to the various expenditures on the enterprise focusing on:

- Current Graduate Division fellowships and block funding allocations and the ways they are used by programs, including for the recruitment of students who enhance the excellence of our research enterprise, contribute to the diversity of our graduate programs, and improve our teaching mission
- Number and distribution of teaching assistantships and graduate student instructors, particularly in relationship to the undergraduate and graduate student enrollments of the program
- Number and distribution of research assistants and external fellowships (e.g. T32, NSF GRFP, GAANN, philanthropy)
- Assessment of the short-term impacts of the 5-year funding guarantees for doctoral students (2-year for MFAs) on graduate programs and the institution, and possible strategies for navigating the transition period as programs adapt
- Goals and the carrying capacity of Divisions and individual PhD and MFA graduate programs
- Potential of alternative funding streams including cross-subsidies from MS/MA programs, including professional, self-supporting and 4+1 programs, and the role of research development and prospective Center- or graduate block grant funding.

In addition, we ask that the working group build on the information and insights gained from this analysis to provide recommendations about near and longer-term ways to stabilize and/or enhance the graduate enterprise across disciplines on campus. Throughout this group's work, we ask for explicit consideration of student diversity, broadly defined.

We ask the working group to submit a report by July 1, 2020.

Membership

Co-Chairs:
Donald Smith, Microbiology & Environmental Toxicology, Chair, Graduate Council
Quentin Williams, Acting Vice Provost/Dean Graduate Studies

Senate:
David Brundage, History, Senate Vice Chair
Gina Dent, Feminist Studies, Graduate Council
Debbie Gould, Sociology, Committee on Planning & Budget

Longzhi Lin, Mathematics, Graduate Council
Dard Neuman, Music, Committee on Planning & Budget

Administration:
Scott Brandt, Vice Chancellor of Research
Katharyne Mitchell, Dean of Social Sciences (Phase I & II)
Jim Moore, Assistant Dean, Graduate Studies (Phase I)
Kimberly Register, Planning & Budget
Alexander Wolf, Dean, Baskin School of Engineering

Staff Support to the Joint Working Group:
Esthela Bañuelos, Academic Senate
Zack Myers, Music Department (Phase III)
Barbara Smee, Graduate Division
Oliver Spires, Office of Planning and Budget (Phase II & III)

Appendix B:

Faculty Graduate Education Survey (FGES): This appendix presents the complete FGES instrument as administered to UCSC faculty in October, 2020.

https://drive.google.com/file/d/1ONab--KuT4Sfl3NlsK9hg1UigWgyXhNz/view?usp=sharing

Appendix C:

Narrative Appendix: This appendix contains an expanded presentation of the data and their analyses, as well as discussion of the major findings that are summarized in the JWG report. As such, this appendix serves as an important linkage between the final report and the complete revenue analysis and Faculty Graduate Education Survey (FGES) data appendices (i.e., Appendices D and E).

https://drive.google.com/file/d/1W6r3yBJ2oJ3zulpsMu8IdISgvKAkKdOj/view?usp=sharing

Appendix D:

Revenue Analysis Slides: This appendix presents a comprehensive report of the revenue data collected and analyzed by the JWG, including: revenue generated by graduate enrollments; revenue spent supporting graduate students; 5/2 year guaranteed support projections; cost of attendance adjustment projections; master's incentive fund program (MIP) information; longitudinal data on graduate support and time-to-degree using Graduate Division student-level data. This appendix also contains a three-year overview of revenue expenditures and then detailed data by division and department.

https://drive.google.com/file/d/1JGhmXPJtg3IYG2Nndax_E_Atqp916H8J/view?usp=sharing

Appendix E:

Faculty Graduate Education Survey Data Slides: This appendix contains responses to all questions in the Faculty Graduate Education Survey, broken down by division and in some cases by demographics.

https://drive.google.com/file/d/1QmFPuAyrdVqCH9tGoRtTWBx0UQ11r5lj/view?usp=sharing

Please make sure you are logged in to your UCSC account to link to appendices

Implementation Task Force for Inclusive Excellence in Graduate Education

Final Report - Completed 3/10/23

I. JUSTIFICATION AND NEED

As a R1, AAU member public research institution, the University of California has a mission of advancing knowledge and a responsibility to serve as an "engine of social mobility." Graduate education is a cornerstone of that mission. Graduate programs and students are therefore an essential part of the university's dynamic "ecosystem," helping to advance knowledge, and through that, advancing the university's research profile, benefitting undergraduate education, and serving communities, the state and the nation. At a high level, the Implementation Task Force for Inclusive Excellence in Graduate Education (ITF) was charged to implement the Joint Senate-Administration Working Group on Graduate Education's (JWG) recommendations (March 2021) to strengthen graduate education on all those fronts. The overall approach is a shift in strategic emphasis from graduate growth to a focus on graduate student success and well-being, with shaped growth for programs with aspiration and capacity to grow.

The ITF mission is informed by the fundamental principle that the UC is dedicated to educating undergraduate and graduate students through direct and equitable access to world-class research faculty, regardless of socioeconomic background and financial resources. As such, the ITF believes that resources supporting excellence, equity, and inclusion in graduate education at UCSC should be a priority on par with other educational resource needs. Historically, however, this has not been the case. As noted in the JWG report, a relatively large proportion (65%) of core revenues[1] generated by graduate enrollment has supported graduate students as ASEs (TAs, GSIs), the majority in the form of TAships. What this means for support of graduate education may not be obvious; given that ASE appointments are primarily allocated in service of the undergraduate instructional mission of the campus, **only 28% of core revenue dollars generated by graduate student enrollments are actually spent directly in support of graduate students[2]**. Moreover, the largest proportion of return to aid revenues committed to "needs based aid" is spent on TA fee remission (60%), with less (40%) on actual return to aid such as fellowships. We conclude that many of the broad challenges UCSC has faced in recent decades can be traced to the lack of dedicated support of graduate student success, defined here as (a) retention, (b) time to degree, and (c) post-graduation placement.

Historically, graduate education at UCSC, and in particular the means of supporting graduate students over their careers, were (sometimes inadequately) met via a suite of sources (ASEs, fellowships, GSRs, etc.) that were dispersed *ad hoc* quarter by quarter, with little or no longer-term institutional planning to take into account the multi-year career of doctoral students. This practice generated systemic funding and planning uncertainties at the department, academic division, and Graduate Division levels. It also often led to substantial anxiety among our graduate students about the source(s) and level(s) of support (e.g., students were often notified one quarter at a time and with little advance warning about pending changes). In addition, factors related to graduate student support that best predict student success have not been tracked, let alone carefully analyzed, and impacts on specific cohorts (particularly underrepresented minority (URM) students) have not been assessed. With the emergence in 2020 of UCSC's 5/2 year support commitment for doctoral/MFA students, and the necessary increasing costs of supporting doctoral/MFA students to graduation, the ITF prioritized two major goals: (1) the development of a multi-year planning model to estimate and project, at the individual program level, the quarters and associated dollars needed to support doctoral/MFA students within the 5/2 yr support commitment and/or a program's normative

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[1] State enrollment revenues via re-benching, and tuition-based revenues.

[2] Of the ~30% of core revenue dollars generated by graduate student enrollments that are spent directly in support of graduate students, two-thirds (or ~20% of total) are spent on fellowships and a third (~10% of total) is spent on core-funded GSRs.

time; and (2) the implementation and/or recommendations for implementation programming, practices, and additional resource investments to enhance student well-being and success.

The ITF's work and this report come at a time when the role and strategic future of graduate education locally and systemwide is undergoing profound changes[3]. We must understand current and anticipated future decisions, and examine the basis for allocating financial resources if we are to successfully diversify graduate programs and holistically support all of our students. Future trends in graduate student enrollments must also be considered within the context of the aspirational doctoral growth dollars (currently ~$8M annually) that the campus receives towards achieving doctoral growth targets established in the systemwide 'rebenching' process. Re-envisioning graduate programs will be a longer-term effort requiring systemwide alignment and collective engagement of all campus stakeholders, with the goal of strengthening and ensuring sustainability of our graduate programs and the university's broader success as a R1 AAU institution. In the short term, there are immediate adjustments to policy and resource allocations that should be made quickly to address immediate and long-term needs, as proposed with our recommendations below.

II. CHARGE & PROCESS

The ITF[4] was established by the Vice Provost and Dean of Graduate Studies (VPDGS) and composed of two parallel subgroups, the ITF Graduate Education and Student Financial Support subgroup, and the ITF Graduate Student Success and Well-being subgroup. The ITF Support subgroup was charged with i) developing a 5/2 year doctoral/MFA student support model (the Graduate Student Support Model, GSSM), ii) proposing incentives for including more graduate student support in extramural proposals, and from philanthropic sources, iii) institutionalizing a data framework on the ecosystem of graduate education and support (e.g., funds spent in support of graduate students, and graduate student level data on time to degree and funding support, etc.), and iv) determining the effectiveness of the Master's Incentive Program (MIP) in strengthening graduate education. The ITF Student Success subgroup was charged with i) developing enhanced professionalization programming within the Graduate Division to better serve the professional development needs of graduate students, ii) performing, in collaboration with the ITF Support subgroup, an evidence-based analysis to determine whether increased support for doctoral/MFA students is associated with student success (i.e., retention, graduation within normative time, etc.), iii) exploring solutions around enhanced support for student well-being, and iv) developing guidelines/best practices associated with faculty mentoring of graduate students. In addressing its Charge, the ITF developed a set of guiding principles[5]. The two ITF subgroups met twice monthly over March - June and October - December, 2022. In addition, the ITF co-chairs met with the ITF Steering Committee for input and guidance in June and December, 2022. Additional one-on-one information sessions were held with each of the academic divisional deans and their staff, the ITF co-chairs, and the Graduate Dean.

III. KEY FINDINGS, IMPLEMENTATIONS AND RECOMMENDATIONS

The primary work products of the ITF are: 1) The Key Findings based on analysis of student support and success data over 14 academic years (2005-06 to 2018-19); this analysis identifies significant predictors/contributors to doctoral student success (defined here as retention, time to degree, graduation, and post-graduation placement). The purpose of this analysis is to determine *whether* and *how* changes in policy and resourcing could directly improve student success; 2) A broad-based Graduate Student Support Model (GSSM) planning tool to inform graduate enrollment management and optimal approaches to student

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[3] At the local, UC-systemwide, and national level, these changes have included a renewed urgency around housing affordability, financial support of graduate students at competitive levels, and the need for doctoral training, mentoring, and professional development that better prepares students for career paths within and outside of the professoriate.

[4] ITF membership is listed in Appendix I.

[5] The ITF Guiding Principles are listed in Appendix II.

support and success; and 3) Recommendations to strengthen and diversify graduate education via targeted enhancement of student support and well-being programming, including the investment and use of graduate student support resources to enhance graduate student welfare and success, and thus the pipeline of early-career professionals who have succeeded in securing graduate degrees.

IIIa. ITF KEY FINDINGS

The ITF **Key Findings** are grouped into five categories: 1) Student enrollment, demographic, and placement findings; 2) Sources of doctoral student support; 3) Predictors of student success; 4) Areas of opportunity to gain resource efficiencies by increasing student success; and 5) Other notable findings. The complete slide deck of findings is here, and also broken down by figure number cited below.

III.a1 Enrollment, Demographic, and Placement Findings

1) Approximately 20% of matriculated doctoral students separated from the university before graduating (i.e., a 20% attrition rate), with the percentage varying by academic division: 13-15% in PBSci and Arts; 24-25% in Hum and SocSci; 29% in BSOE.
2) Many doctoral students graduate beyond their program's normative (i.e., intended maximum) time to degree, ranging from 10% (Arts) to 23% (SocSci). In addition, for some programs, the percentage is much higher, ≥1/3 of students (FIGURES 1-5).
3) URM students, and especially URM female students (except in PBSci), are more likely to separate from the university before graduating (FIGURE 6, 7), and have a longer time to degree (TTD) than non-URM students (FIGURE 8).
4) In aggregate, ~48% of graduated doctoral students over the past 15 years have gone on to careers in academia, while ~52% have gone on to careers outside of academia. However, these figures vary widely by academic discipline/division. For example, 25% of BSOE graduates and 40% of PBSci graduates have gone on to academic careers, compared to ~65 - 70% of Arts, Humanities, and SocSci doctoral graduates. The top employer of UCSC doctoral graduates who completed their degrees over the past 15 years and entered academia is UCSC itself.

These findings are consistent with the published educational literature regarding the significance of the intersection of race/ethnicity and gender in student success. They also underscore the importance of not just diversifying the campus but also focusing on developing and supporting an equity-minded campus culture, and providing mentoring and other support structures to increase the success of students from diverse backgrounds.

III.a2 Key Findings - Sources and Levels of Doctoral Student Support

1) There are notable differences across academic divisions in how doctoral/MFA students are supported financially. For example, in non-STEM fields, students are supported at generally lower absolute levels (dollars) and predominantly as TAs, whereas in the STEM fields, TAships provide an important but smaller fraction of support compared to extramurally funded GSRs and fellowships (FIGURES 9 - 14).
2) The variations among disciplines and programs in doctoral student support sources/levels substantiates the need for the Graduate Student Support Model to inform program and divisional management of graduate student enrollments and graduate student support and success within the 5/2 yr support commitment.

Collectively, these findings underscore the fact that there are important disciplinary differences in how graduate students are supported through their graduate careers that must be taken into account in developing support structures to enhance student success. To address this, the campus needs a mix of options that are sufficiently flexible to address specific program needs.

III.a3 Key Findings - Predictors of Student Success

The ITF identified specific factors that are either positively or negatively associated with student success. The ITF used Time to Degree (TTD) as a basic measure of student success, and specifically considered both elapsed and enrolled academic years TTD. Elapsed TTD is the total academic years regardless of whether a student took a leave of absence, whereas enrolled TTD comprises only the academic quarters/years when the student was enrolled. Enrolled TTD represents academic year quarters when graduate students pay tuition, and so the difference between the two TTD measures have implications on student success more broadly and the 5/2 year support commitment in particular. For example, while most programs have a median Elapsed TTD of 5 years, and several have median Elapsed TTDs of 6 or 7 years, their median Enrolled TTDs are generally shorter. **This results from the average UCSC doctoral student spending 1.4 quarters on a LOA, withdrawn or otherwise not enrolled.**

1) Multiple factors related to increased student support were **<u>positively</u>** associated with student success (TTD and graduation rates):
   a) Fully supported students with a greater proportion of their support coming from GSRs, as opposed to TAs, have shorter TTDs (FIGURE 15). The ITF infers better outcomes for students who are supported in ways more closely related to their research progress.
   b) Summer support is associated with shorter TTD (FIGURE 15).
   c) Fully supported students in Arts, Hum, and SocSci with a greater proportion of their support coming from fellowships have shorter TTD (FIGURE 16).
   d) Both URM and non-URM Cota-Robles Fellowship recipients graduate at higher rates compared to their non-Cota-Robles recipient counterparts, but URM students benefit significantly more from the Cota-Robles Fellowship in terms of graduation rates (i.e., 54% → 84% improved graduation rate in URM non-CR vs URM CR), compared to non-URM Cota-Robles Fellowship recipients (60% → 75% improved graduation rate in non-URM non-CR vs non-URM CR) (FIGURE 17).
2) Other factors related to student support were **<u>negatively</u>** associated with student success (TTD and graduation rates):
   a) Fully supported students who work primarily as ASEs (and GSRs in non-STEM fields) have longer TTD (FIGURE 18, 19).[6]
   b) Historically, not all departments have fully funded their students over 5 years or NTTD, using funding sources that are routed through the university (FIGURE 21).
      i) Lower support levels over a student's career (e.g., students supported for 4 years or less, or not fully supported, with funding routed through the campus) are associated with lower levels of student success, including:
         (1) Increased numbers of quarters on leave of absence (LOA) (FIGURE 20).
         (2) In-turn, increased quarters on LOA are associated with higher attrition rates (FIGURE 20).

These findings suggest several opportunities to improve student success by: 1) Reducing the need for students to take LOAs, and therefore 2) Reducing TTDs so that students are graduating within their program's approved normative time. This is particularly true when looking at time to degree by demographic groups, where there is higher enrolled and elapsed time to degree with URM female doctoral students across all divisions except PBSci. This finding again underscores the importance of identifying barriers to success and for campus support to both faculty mentorship and enhanced structures to improve student success for URM doctoral students.

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[6] *While this campus-wide analysis suggests that doctoral students for whom a large proportion of their support comes from TAships may have longer times to degree, these results may be influenced by underlying, covarying programmatic differences that make it difficult to have high confidence in a causal relationship.*

III.a4 Key Findings - Areas of opportunity to gain resource efficiencies by increasing student success and integrated planning

1) Significant resources are spent supporting students who are past NTTD and/or who separate from the university before graduating (Tables 1 and 2).
   a) Historically, ~3.5% (range <1 - ~6%) of fully funded quarters annually were spent supporting doctoral students post-NTTD (annually ~$1M salary/stipend/fees/benefits).
   b) Historically, 15-20% of annual student support was spent supporting students who ultimately separated from the university (~$2.8M salary/stipend and fees/benefits).
2) Planning for graduate student support involves multiple stakeholders and has multiple gaps in information flow. The responsibility, authority, and oversight over graduate student support is spread across PI's, programs/departments, divisional deans, and the Graduate Division, which requires coordination between stakeholders. **At present, however, there is sub-optimal coordination of graduate support information, which impacts planning.** Some of the reasons for this situation are structural: For example, ASE appointments constitute a significant source of support for doctoral students across most programs, yet ASE allocations to divisions with subsequent deployment to departments has been driven primarily, if not exclusively, by undergraduate instructional needs and not in relation to planning recruitment and continuing graduate student support needs.

III.a5 Key Findings - Other Notable Findings

1) At present, the campus systematically tracks some, but not all, external fellowships (i.e. fellowship funding awarded directly to the student and not passed through the university). As a result, there are a notable number of students, particularly in the STEM disciplines, that appear as unsupported or minimally supported in our dataset, when in fact they are likely fully supported.
2) A notable number of TA positions are filled annually by MA/MS students, particularly in BSOE (~7% Hum & SocSci, ~14-15% Arts & PBSci, ~35% BSOE) (Table 3). This likely results from multiple factors, including: i) limited availability of qualified doctoral students to serve as TAs in some disciplines; ii) preferential funding of doctoral students with fellowships and/or GSRs; and/or iii) doctoral students being more strongly focused on research and creative activity compared to their MA/MS peers.
3) During the period analyzed, the percentage of matriculated URM doctoral/MFA students has increased for Hispanic/Latino students but has not increased for African-American/Black and American Indian/Alaska Native self-identified students (FIGURE 22). In addition, the number and percentage of international students have also increased over this time (FIGURE 22).

These **Key Findings** informed the development of the ITF's Graduate Student Support Model (GSSM) and recommendations to enhance student success and strengthen graduate education at UCSC. Development of the GSSM and some of the recommendations have progressed into an implementation stage, and others should be adopted immediately, whereas others remain as actionable recommendations to be addressed over time.

IIIb. ITF IMPLEMENTATIONS

III.b1 Graduate Student Support Model and Planning Tool: It is more pressing than ever to adopt comprehensive planning strategies to ensure that our continuing and newly admitted graduate students are supported in ways that allow them to succeed. It is essential that graduate student support strategies and planning take into account the need for different funding options across disciplines. To help meet this challenge, the Graduate Student Support Model and Planning Tool (GSSM) was constructed to help programs and divisions examine and assess projected graduate student support resources in order to

optimally meet their commitments to graduate student success[7]. UCSC is among the few but growing number of UCs to provide a commitment of 5 academic years of support for all doctoral students and 2 years for all MFA students. However, graduate student support comes from a variety of sources with different lines of responsibility and accountability, not to mention different degrees of stability, predictability, and benefit (as shown in Key Findings). **As such, there is a need for a graduate student support planning tool to assist programs and divisions in assessing graduate student support capacity and to inform graduate student admissions and enrollments.**

Specifically, the GSSM inputs include i) program enrollment size, broken down by enrollments eligible for the 5/2 yr support commitment, within normative time, and total enrollments, ii) projected academic year quarters of available support in the coming academic year in categories of TA/GSI, fellowship, GSR (provided by the center/academic divisions, departments, and Graduate Division), iii) the relative 'mix' of support categories (i.e., TAs, fellowships, GSRs, etc.) that programs have historically used to support their doctoral/MFA students (provided by the model). From this, the GSSM provides program level outputs that include the projected number of quarters (and associated dollars) needed to support a program's current doctoral/MFA students in the following academic year, broken down by categories of support (TA, fellowship, GSR, etc.) for students within the 5/2 yr commitment, within the normative time, and for all students; quarters of support that are available and required are projected by the GSSM using data on historical practice (GSSM-based projections)[8]. In addition, the GSSM projections of the number of quarters of support (and associated dollars) by category are further broken down by the source of support (e.g., core institutional funds via TAship, Block, Other Grad Div Non-Block, Non-Grad Div internal fellowships, external fellowships, extramurally funded GSRs, etc.). ASE resource needs are obligated by the central administration and academic division; fellowship resource needs are obligated by the Graduate Division (for Block-based, CR, and DYF fellowships, etc.), and the programs (for external fellowships); GSR resource needs are obligated primarily by the program (and PIs).

III.b2 Graduate Student Support Model Dashboard: The Graduate Student Support Model Dashboard is a simplified derivative of the full GSSM[9]. The GSSM Dashboard is meant to inform discussions within and between programs, their academic division, and the Graduate Division. The Dashboard integrates historical and available future (budgeted) support type[10] and support source[11] information from multiple units/stakeholders[12] to project resource availability and requirements (via quarters of full support) to support continuing and prospective new graduate students. Specifically, the GSSM Dashboard generates three benchmarks for the projected number of ASE, GSR, and Fellowship quarters available to a department: 1) The program's own projections for the coming (e.g., 2023/24) academic year (AY); 2) the dashboard model projections for coming AY; and 3) historical 3 year program averages. As with the full GSSM, the Dashboard projects continuing student support needs based on: 1) Students within the 5/2 year campus commitment window; 2) Students within a program's established normative time to degree (NTTD); and 3) All continuing students. **The overall objective of the Dashboard is to assist campus stakeholders in coordinating a more predictable, stable, and data-driven planning process to assist in managing graduate student enrollments and support, including new admissions.** Details on the

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[7] The GSSM is described in detail in Appendix III.

[8] For support projections, individual students will be categorized by enrollment year so as to determine if they are 5 yr commitment-eligible and Within Normative Time-eligible.

[9] The Graduate Student Support Model has been simplified into a prototype dashboard for pilot use and assessment in the current 2022-23 graduate student admissions cycle. The model remains under development and will be subject to thorough vetting by the Implementation Task Force for Inclusive Excellence in Graduate Education, as well as other stakeholders.

[10] Broadly categorized as Academic Student Employees (ASE), Graduate Student Researchers (GSR), and Fellowships.

[11] Core and extramural (EM).

[12] Programs, disciplinary divisions, the graduate division, the CP/EVC office, and Budget and Planning (BAP).

Dashboard structure, including specific inputs and outputs are provided in Appendix III). Finally, the Dashboard projections are not meant to be definitive, as uncertainties will always remain, but they should nonetheless provide a basis for mutual understanding and discussions within and between programs, their academic division, and the Graduate Division.

III.b3 Student Support and Well-being:

1) **Professional Development Resources**: The ITF and Graduate Division developed a Professional Development portal within the Graduate Division's web page. This newly developed web portal collects and organizes the vast array of professional development resources in a user experience design to enhance the communication and availability of those resources for UCSC's graduate students.

2) **Mentoring Resources:** The ITF and Graduate Division are currently developing a Graduate Student Mentoring web portal within the Graduate Division's web page. This newly developed web portal will collect and organize the vast array of student mentoring resources in a user experience design to enhance the communication and availability of those resources to students and faculty in order to incentivize increased student retention and graduation within NTTD, particularly for URM students. The web portal should be completed by the end of spring quarter 2023.

3) **Diversity, Equity, and Inclusion (DEI) Resources:** Similarly, the ITF and Graduate Division are currently developing a DEI web portal within the Graduate Division's web page. This newly developed web portal will collect and organize the vast array of DEI resources in a user experience design to enhance the communication and availability of those resources to students and faculty in order to enhance awareness of DEI efforts across the campus and better support graduate students from diverse backgrounds. The web portal should be completed by the end of spring quarter 2023.

4) **Student Academic Progress Tracking Resources**: The ITF and Graduate Division are developing a Graduate Division-centralized tracking process for annual student mentoring and academic progress to ensure students are receiving appropriate advising and mentoring, and are making satisfactory progress towards their degree. This form/process (in draft here) will be introduced to programs in spring 2023 for potential implementation in the 2023-24 academic year.

IIIc. ITF RECOMMENDATIONS

III.c1 Recommendations for Investments to Enhance Graduate Student Support[13]: In addition to the measures above that are currently being implemented, the ITF recommends additional policies and investments to enhance student success and to strengthen graduate education, broadly defined as increased retention and graduation rates within normative time, and improved training and other professional development for post-graduate non-academic career tracks. These recommendations are based on the ITF's **Key Findings** (above), which identified potential 'key support levers' that, when combined with enhanced student mentoring and professional development, would measurably increase student success. The 12 ITF recommendations are listed below.

III.c.1a Essential Recommendations to Address in the Near-Term:

1) **Establish a summer graduate student support program to enhance student success**: Provide need-based summer research fellowships at the 50% TAship Step 1 level for eligible doctoral and MFA students. Provide up to three summer support fellowships per eligible doctoral student (one

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[13] See Appendix IV for recommendation details and justifications, and Appendix VII for cost estimates

for MFAs) to be awarded within the program's NTTD and preferably post-ATC. Summer support fellowships should be applied for based on demonstrated financial need.

2) **Strengthen DEI support programming to enhance student diversity and success**: Committed support to enhance graduate student diversity and success, including:
   - Increase Cota-Robles fellowship support by 10 fellowships annually (~25% increase).
   - Create 10 additional DEI 1-year fellowships with undocumented non-DACA doctoral and MFA student eligibility.
   - Establish programming to support DEI efforts at the program level, including at a minimum establishing a DEI Innovation Fund to enhance DEI programming and support for faculty/programs supporting and mentoring URMs.

3) **Incentivize extramural GSR support**: Establish incentives for supporting doctoral students on intra and extramurally funded GSRs, linking use of grant funds to GSR admission and mentoring. Several approaches for accomplishing this were discussed on the ITF, including i) a GSRship Tuition/Fee Offset (GTO) program, where UCSC covers all (or a fraction) of GSR-quarter tuition/fees for all doctoral students post-ATC that are supported as a GSR and are within 9 academic quarters post-ATC (i.e., pre Doc2a); and/or ii) a GSRship Tuition/Fee Incentive (GTI) program, where a portion (% TBD, perhaps a fraction of the fee/tuition costs on a per-quarter basis) of the ICR associated with supporting doctoral students on extramural grants is returned directly to the PI or program as discretionary funds. The particular program(s) to be adopted and implemented (could be a combination) will depend upon further discussions with campus administrators/stakeholders.

4) **Incentivize and support enhanced mentoring and annual student assessment to promote student success:** In addition to the Graduate Division Mentoring web portal under development (noted above), establish a standardized Graduate Division-centered annual student progress assessment process, with the ability to include program-specific metrics, for the annual assessment of graduate student progress to degree.

5) **Establish a Professional Development and Entrepreneurship Program:** To address this, the ITF developed a proposal for a summer professional development/entrepreneurship program and course series to enhance graduate student career success.[14]

III.c.1b Other Essential and Longer-Term Recommendations:

6) **Increase research fellowship support**: Make available two additional quarters of fellowship support for eligible doctoral students (one quarter for eligible MFA) to be deployed in the post-ATC stage of a doctoral student's career (or 2nd year for MFA), and made available within their normative time to degree. These additional fellowships should augment existing advanced-stage fellowship programs currently in place (DYF, Presidents, etc.).

7) **Enhance graduate student wellness at UCSC** by instituting practices to address and implement the Graduate Wellness Group recommendations[15], including i) measures to alleviate housing-related burdens on graduate students, and ii) adoption of the Okanagan Charter[16]

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[14] A proposal for a Professional Development Summer Program and Course Series is included in Appendix V.

[15] The full list of Graduate Wellness Group recommendations are provided in Appendix VI.

[16] The purpose of the Okanagan Charter is threefold: 1) Guide and inspire action by providing a framework that reflects the latest concepts, processes and principles relevant to the Health Promoting Universities and Colleges movement; 2) Generate dialogue and research that expands local, regional, national and international networks and accelerates action on, off and between campuses; And 3) Mobilize international, cross-sector action for the integration of health in all policies and practices, thus advancing the continued development of health promoting universities and colleges.

8) **Direct University Relations and Divisional Development Offices** to i) prioritize fundraising for graduate student fellowships, particularly for URM students, potentially through endowments similar to other R1 universities and ii) develop a UCSC graduate student alumni engagement process to enhance career awareness and development for our current graduate students.

9) **Conduct a comprehensive review and audit of the MIP** to evaluate the impacts of this program on enrollment growth (for both Master's and PhD students), possible side-effects, and overall effectiveness of the program, as was originally required at the 3 year mark of the program in 2017 (per January 21, 2014 MIP approval letter from EVC Galloway). **In the meantime, the ITF also recommends that the CP/EVC consult with Graduate Council, Graduate Division, and the academic divisions in order to issue an updated memo that clearly states the goals and metrics of success for the Master's Incentive Program (MIP)**, appropriate uses for MIP funds at both the program and divisional level, and the requirement for annual financial reporting of MIP allocations, expenditures, and carryforward use commitments that is available to stakeholders (programs, divisions, Graduate Division, central administration).

   Moreover, given MIP's purpose historically to in part support doctoral growth, the role of academic master's programs in the graduate ecosystem has received little attention. Given this, **the campus should reevaluate the role of academic versus professional (or professionally-oriented) master's programs in the broader graduate education ecosystem**, and how master's programs should complement and strengthen doctoral and graduate programs in general on campus.

10) **Incentivize development of cross-departmental TA allocation processes**. Given the critical role of TAship appointments in the training and support of our doctoral students, and the fact that the undergraduate enrollments that generate TAships may not coincide with graduate student training/support needs within a program, transparent processes should be developed within academic divisions, in consultation with Labor Relations, that facilitate the matching of graduate students in one program with TA training/support opportunities that may exist in a different program.

IV. CONCLUSIONS

The direct benefits of fulfilling these recommendations are expected to include a **significant increase** in: i) the proportion of students that graduate within their program's normative time; ii) The number of matriculated students that graduate; iii) The retention and graduation rates for URM students so that they are retained and graduated at same rates as non-URM students; and iv) Post-graduation success in career paths within and outside of academia. More broadly, improving graduate student success will also strengthen undergraduate education and UCSC's service mission, and thus the campus and regional communities as a whole. Finally, implementing these recommendations will help to align UCSC's commitment to graduate students and programs with past assertions that graduate education is a priority for the campus, and will demonstrate how robust graduate programs contribute to economic growth, creative discovery, and enhanced representation in essential professions.

APPENDICES

Appendix I. ITF and ITF Steering Committee Membership

ITF Support Subcommittee membership

Co-Chairs:
- Don Smith, Grad Div/METX, Co-Chair
- Dard Neuman, Music, Co-Chair (CPB Chair)

CPB, GC, Academic Senate:
- David Brundage, History (Senate Chair)
- Andrew Fisher, EART (GC Chair)
- Cameron Monroe, ANTH (CPB)
- Daniele Venturi, Applied Math (CPB)

Academic Divisions:
- Stephanie Moore, Asst Dean (Arts)
- Matt Guthaus, CSE (BSOE)
- Nirvikar Singh, ECON (Soc Sci)
- Kent Eaton, POL (Soc Sci)
- Susan Gillman, LIT (Hum)
- Pete Raimondi, EEB (PBSci)
- Lorato Andersson (Grad Div)

BAP:
- Kimberly Register, BAP
- Alex McCafferty, BAP
- Oliver Spires, BAP

Graduate Student Reps:
- Stefany Arevalo Escobar, CMPM (GSA)
- Brittney Jimenez, LALS (GSA)

Staffing
- Stephanie Casher (Grad Div)

ITF Student Success and Well-being Subcommittee (SSWB) membership

Co-Chairs:
- Don Smith, Grad Div/METX, Co-Chair
- Lissa Caldwell, ANTH, Co-Chair (GC Chair and Vice Chair of Senate)
- Garrett Naiman, DSAS, Co-Chair

CBP, GC, Academic Senate:
- Hillary Angelo, SOC (CPB)
- Banu Bargu, HISC (GC)
- Greg Gilbert, ENVS (GC)
- Phoebe Lam, OCEA (CAAD)
- Esthela Bañuelos (CPB/GC Analyst)

Divisions
- Stephanie Casher (Grad Div)

Graduate student reps:
- Alix MacDonald, PSYC (GSA)
- Dori Weiler, EEB (GSA)

Staffing:
Lorato Anderson (Grad Div)

ITF Steering Committee
Don Smith, Task Force Co-Chair
Dard Neuman, Task Force Co-Chair
Peter Biehl, VPDGS
Celine Parrenas Shimizu, Dean of Arts
Alexander Wolf, Dean of BSOE
Jasmine Alinder, Dean of Humanities
Paul Koch, Dean of PBSci
Katharyne Mitchell, Dean of Social Sciences
David Brundage, Chair Academic Senate (rotating off in 22-23)
Melissa Caldwell, Vice Chair Academic Senate
Andrew Fisher, Chair, Graduate Council
Garrett Naiman, AVC and Dean of Students
Kimberly Register, AVC BAP
Esthela Bañuelos, CPB/GC Analyst
Richard Hughey, VPDUE
John MacMillan, Interim VC of Research
Brittney Jimenez, GSA Representative
Alix MacDonald, GSA Representative
Rachel Holser, PostDoc Representative
Stephanie Casher, Assistant Dean, Graduate Division
Lorato Anderson, Director of DEI, Graduate Division

Appendix II. ITF Guiding Principles

The ITF Guiding Principles informing its analysis, assessments, and implementation recommendations are derived from the Guiding Principles established by the Joint Working Group on Graduate Education ([JWG report](#)), as follows:.

- **Strengthen the Graduate Enterprise Through Enhanced Financial Stability and Responsibility**: UCSC's graduate enterprise is integral to our teaching, research, and service mission and a vital component of our R1 and AAU statuses. We are thus committed to strong graduate programs and the overall strengthening of graduate education at UCSC by enhancing transparency, stability, and responsibility in graduate student financial support.
- **Cultivate Research Excellence and Professional Development:** We favor an enhanced educational environment that supports the development of outstanding scholars and practitioners by creating outstanding research environments coupled with strong career-relevant professional development opportunities.
- **Advance Disciplinary, Faculty and Student Diversity:** We are committed to disciplinary and student diversity, knowing that human and planetary well-being, now and in the future, requires critical and creative knowledge from diverse sources. To this end, we are committed to ensuring that our graduate programs attract, support, retain, and graduate a diverse body of students.
- **Provide an Environment for Student Success & Welfare:** A climate that engenders belonging and dignity is central to the mission of UC and is critical to student success and welfare. We are committed to a strong and healthy graduate education institution that provides students the time, financial support, and creative environment they need to execute their studies and research successfully.

Appendix III. Staged Development of the ITF Graduate Student Support Model and Planning Tool

The ITF developed a broadly-based Graduate Student Support Model (GSSM) to assist campus stakeholders in coordinating a more predictable, stable, and data-driven planning process to assist in managing graduate student enrollments and support, including new admissions. In particular, the GSSM is meant to inform discussions within and between programs, their academic division, and the Graduate Division.

GSSM Structure: The GSSM is composed of 15 modules of program-level data and information broadly grouped into two categories, historical practice and future projections. Modules 1 - 8 provide data/information on **historical practices**[17], while Modules 9 - 15 provide data on **future projections**. The content of the individual modules is shown below:

Module #: Title	Module Content
Module 1: Historical Program Size, NTTD, & Expenditure	Historical 3-yr avg program size, program normative time to degree, and 3-yr avg total dollars spent supporting doctoral/MFA student during the FWS academic year or summer
Module 2a: Fund Type Mix: 3 Yr Average ACADEMIC YEAR (2016/17-2018/19)	Historical 3-yr avg relative proportion (%) of student support by support category (ASE, Fellowship, GSR) for the ACADEMIC YEAR
Module 2b: Fund Type Mix: 3 Yr Average SUMMER (2016/17-2018/19)	Historical 3-yr avg relative proportion (%) of student support by support category (ASE, Fellowship, GSR) for the SUMMER. Also included are the avg per student dollars of summer support and the equivalent summer quarters of support
Module 3a: Academic Year Support Mix by Fund Source	Historical 3-yr avg relative proportion (%) of student support by support CATEGORY (ASE, Fellowship, GSR) and support SOURCE (Core, EM, Other) for the ACADEMIC YEAR
Module 3b: Summer Support Mix by Fund Source	Historical 3-yr avg relative proportion (%) of student support by support CATEGORY (ASE, Fellowship, GSR) and support SOURCE (Core, EM, Other) for the SUMMER.
4a. AY ASE: Level 2 Hierarchy	Historical 3-yr avg relative proportion (%) of student support by ASE SUB-CATEGORY (TA, GSI, OTHER ASE) for the ACADEMIC YEAR
4b. AY Fellowships/Grants/Scholarships/Awards: Level 2 Hierarchy	Historical 3-yr avg relative proportion (%) of student support by FELLOWSHIP SUB-CATEGORY (Grad Div, Other Internal, External) for the ACADEMIC YEAR
4c. AY GSR Core (Level 2 Hierarchy)	Historical 3-yr avg relative proportion (%) of student support by GSR SUB-CATEGORY (Core State, Extramural) for the ACADEMIC YEAR
4d1. AY Fellowship Categories and Elements as a % of Total (Level 3 Hierarchy)	Historical 3-yr avg relative proportion (%) of student support by Graduate Division BLOCK FELLOWSHIP SUB-CATEGORY (Regents, Other Block, etc.) for the ACADEMIC YEAR
4d2. AY Fellowship Categories and Elements as a % of Total	Historical 3-yr avg relative proportion (%) of student support by OTHER Graduate Division FELLOWSHIP SUB-CATEGORY (Cota-Robles, Other Grad Div,

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[17] The GSSM currently includes 3-year average data from 2015 - 16 through 2018-19, but will be updated to 2019-20 - 2021-22 when the data become available). The GSSM is structured to be updated annually.

Fellowships (Level 3 Hierarchy)	Chancellors, Presidents, DYF, Other Non-Grad Div, External) for the ACADEMIC YEAR
Module 5a: Per Student Per Academic Year Fund Mix	Historical 3-yr avg PER STUDENT mix of ACADEMIC YEAR QUARTERS of student support (funding) by CATEGORY(ASE, Fellowship, GSR)
Module 5b: Per Student Per SUMMER Fund Mix	Historical 3-yr avg PER STUDENT mix of SUMMER QUARTERS of student support (funding) by CATEGORY(ASE, Fellowship, GSR)
Module 6a. Per Student Per Year Fund Type Mix By Fund Source (Academic Year)	Historical 3-yr avg PER STUDENT mix of ACADEMIC YEAR QUARTERS of student support (funding) by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, extramural, other)
Module 6b. Per Student Per Year Fund Type Mix By Fund Source (Summer)	Historical 3-yr avg PER STUDENT mix of SUMMER QUARTERS of student support (funding) by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, extramural, other)
Module 7a: Qtrs Fund Type Mix Per Student Over 5 Year Commitment (Academic Year)	Historical 3-yr avg PER STUDENT mix of ACADEMIC YEAR QUARTERS of student support (funding) projected over the 5/2-YR COMMITMENT by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, extramural, other)
Module 7b: Qtrs Fund Type Mix Per Student Over 5 Year Commitment (SUMMER)	Historical 3-yr avg PER STUDENT mix of SUMMER QUARTERS of student support (funding) projected over the 5/2-YR COMMITMENT by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, extramural, other)
Module 8a: Qtrs Fund Type Mix Per Student Over Normative Time to Degree (Academic Year)	Historical 3-yr avg PER STUDENT mix of ACADEMIC YEAR QUARTERS of student support (funding) projected over the program's NORMATIVE TIME TO DEGREE by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, extramural, other)
Module 8b: Qtrs Fund Type Mix Per Student Over Normative Time to Degree (SUMMER)	Historical 3-yr avg PER STUDENT mix of SUMMER QUARTERS of student support (funding) projected over the program's NORMATIVE TIME TO DEGREE by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, extramural, other)
Module 9: Projected Next-Year Program Size by Enrollment Level	Projected program doctoral/MFA ENROLLMENTS in the next academic year. Program and Graduate Division projections shown, and include proposed incoming cohort size, continuing students within the 5/2 yr commitment, NTTD, and all students
Module 10: Projected Requirements by Fund Type (Number of Quarters of Support Required Per Program to Support New and Continuing Students at Three Enrollment Levels)	Projected QUARTERS OF SUPPORT needed to support new and continuing students in the next academic year by CATEGORY of SUPPORT (ASE, Fellowship, GSR) and STUDENT STANDING (within 5/2 yr commitment, NTTD, all students)
Module 11a. Scenario Dial for Model Module 11b: Academic Year Quarters Required Per Program by Fund Type and Source (Based on Scenario of Program Size) Module 11c: Summer Quarters Required Per Program by Fund Type and Source (Based on Scenario of Program Size)	Projected QUARTERS of SUPPORT needed per ACADEMIC YEAR or SUMMER to support new and continuing students in the next academic year by CATEGORY of SUPPORT (ASE, Fellowship, GSR), SOURCE of SUPPORT based on the SCENARIO of STUDENT STANDING (within 5/2 yr commitment, NTTD, all students)
Module 12a: Historical Baseline ASE Salary	Historical baseline per quarter TAship salary/tuition/fees amounts (3-yr avg and 2018-19)

Module 12b: GSR Level Salary Amounts	New 2022-23 per quarter GSR salary amounts (GSR Levels 1 - 6)
Module 12c: Distribution of GSR Levels by Program (percentages are placeholders for now)	Projected GSR Level distribution (% of program students per GSR Level), used to then calculate program-avg GSR salary per quarter
Module 12d: ASE Salary Levels	New 2022-23 per quarter TAship salary amounts (TA Levels 1 - 3)
Module 12e: Distribution of ASE Levels by Programs (Using Adrian's Divisional Estimates)	Projected TA Level distribution (% of program students per TA Level), used to then calculate program-avg TA salary per quarter
Module 12f: Quarterly Tuition, Fees, Benefits	Projected (2023-24) quarterly tuition, fees, benefit amounts
Module 12g: Blended Avg ASE, Fellowship, GSR	Projected (2023-24) quarterly tuition, fees, benefit amounts
Module 12h: Summer Salary	Projected summer salary as ASE or GSR
Module 13: Per Student Per Year Dollar Expenditure by Support Type	Projected PER STUDENT PER YEAR support EXPENSE for the next ACADEMIC YEAR (13a) or SUMMER (13b) by CATEGORY of SUPPORT (ASE, Fellowship, GSR)
Module 14. Per Student Per Year Dollar Expenditure by Support Type AND SOURCE (AY or Summer)	Projected PER STUDENT PER YEAR support EXPENSE for the next ACADEMIC YEAR (14a) or SUMMER (14b) by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, Extramural, Other) of SUPPORT
Module 15: Per Program Per Year Dollar Expenditure (All Continuing Students + Proposed New)	Projected TOTAL EXPENSE PER PROGRAM PER YEAR for the next ACADEMIC YEAR (15a) or SUMMER (15b) by CATEGORY (ASE, Fellowship, GSR) and SOURCE (Core State, Extramural, Other) of SUPPORT, based on selected SCENARIO of STUDENT STANDING (within 5/2-yr commitment, NTTD, all)

Development of the GSSM: The ITF's work in developing the GSSM occurred in three stages:

Stage 1 prioritized the <u>analysis of data on student success relative to support type</u>[18] <u>and support level</u>[19]. To accomplish this, the ITF merged and restructured 2005 - 2019[20] graduate student enrollment and demographic data with student payment data (from AIS).[21] The ITF coded this data, created variables to

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[18] "Support type" refers broadly to student support as Academic Student Employees (ASE), Fellowships, and Graduate Student Research (GSR). ASE is further subdivided into Teaching Assistant (TA), Graduate Student Instructor (GSI), and "other" employee categories (such as readers, tutors). Fellowships are further subdivided into Graduate Division fellowships, other internal and external fellowships, and other internal and external grants/awards. Graduate Division Fellowships are even further subdivided into the various Graduate Division Block and other fellowships (Cota-Robles, Regents, Presidents, and Chancellor's, etc.).

[19] "Support level" refers to: 1) the amount of funding support a student received per quarter and; 2) the duration of support over their graduate career (e.g., the number and % of enrolled quarters that were supported and at what level). The ITF established its baseline support level by a particular academic year's UC-wide ASE salary/benefit rate for 50% quarterly employment (consistent with UCSC's current 5 year support commitment to doctoral students).

[20] At the time of analysis, the UCSC data warehouse could provide reliable data for the period 2005-06 through 2018-19, but not 2019-20 to present due to complexities and quality of UC Path data. We expect the latter data, updated and cleaned, to be available at some time during the current (2022-23) academic year.

[21] This merged dataset contains the following student information by program, division, and academic year (with anonymized student IDs): student demographics; matriculation and (if applicable) graduation year and quarter; number of quarters on leave of absence (LOA), in absentia (IA), pre and post Advanced to Candidacy (ATC); and by-quarter details on support levels, support

more efficiently analyze it, and restructured the datasets to conduct: a) historical analysis of how programs support students (by support levels, amounts and duration, support type, and support source); b) bivariate analysis to model relationships between student support levels, support types, demographics, and success (using graduation, attrition, leaves of absence (LOA)), and elapsed/enrolled time to degree[22] (TTD) metrics), and; c) multivariate regression analysis to determine whether, and if so to what extent, types and levels of support are associated with student success outcomes. Please see the ITF Data Description and Identification of Terms file for details.

In **stage 2**, the ITF developed its Graduate Student Support Model (GSSM), which determines for each program and academic division the per-student number of quarters and associated cost of support by support type (ASE, Fellowship, GSR) and source (Core State, extramural, other), which can then be used to estimate annual (or 5 yr, normative time, etc.) current and future resource needs at the program, division, and campus level[23]. The model is based on units of 'quarters of support'.

In **stage 3,** the ITF analyzed how this campus might optimize resources spent supporting doctoral students. Specifically, the ITF analyzed resources spent: a) supporting students within normative TTD (NTTD) vs students that are beyond NTTD, and; b) supporting students who graduate vs. those who separate prior to graduation. The goal of this exercise is to identify opportunities to increase the impact of financial resources if, as ITF proposes and predicts, we can increase graduation rates and increase the percentage of students who graduate within normative time.

GSSM Dashboard. A simplified GSSM Dashboard was developed from the full GSSM to more easily facilitate assessment of resources (i.e., quarters of support) needed and available to support continuing and proposed new student admits. The GSSM Dashboard is segmented into six modules. Each module juxtaposes information provided by programs with information from the graduate division and/or the GSSM.

- Module 1 (**New Student Recruitment Targets**) displays each program's recruitment targets with a comparison to the most recent historical three year program medians of new cohort sizes.
- Module 2 (**Continuing Student Numbers**) displays continuing student enrollments in three categories: i) within the 5/2 year commitment window, ii) within normative time to degree (NTTD), and iii) all continuing students. These data are derived from two different sources, department projections and graduate division data.
- Module 3 (**2023/24 Support Projections**) displays the projected number of ASE, GSR, Fellowship, and MIP quarters of support available to a program, further broken down into four main categories:
    - 3a: **ASE** (TA and GSI/other ASE), based on department, GSSM, and historical levels TA FTE allocations to divisions, versus historical averages;
    - 3b: **GSR**, based on department and historical projections.
    - 3c: **Fellowships**, based on department and historical projections; Projected fellowships are further broken down into categories of Graduate Division fellowships, Other internal and external fellowships/awards.
    - 3d: **MIP**-based fellowships or ASE quarters.

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types and, support sources. "Support source" refers to whether the support types were provided by UCSC core, extramural, or other resources. The ITF also created syntaxes to automate much of this process so that the datasets and report tables can be updated annually for planning between the Graduate Division, doctoral and MFA programs, disciplinary divisions, and the campus center.

[22] Elapsed TTD refers to the absolute number of calendar years it took a student to graduate from matriculation to graduation. Enrolled TTD refers only to the time it took to graduate when a student was enrolled, either full time, part time or in absentia. Enrolled TTD therefore subtracts/does not include time a student was on leave of absence, withdrawn, or otherwise not enrolled.

[23] Historical data informing this model include: past 3 year averages of program size, incoming cohort size, dollar and percent expenditure supporting graduate students by fund type, as well as the dollar amount and percentage of each of those fund types by fund sources (core, extramural, other).

- Module 4 (**Support Capacity**) projects the sum total of available quarters of support across all categories from Module 3, and compares department projections with GSSM projections.
- Module 5 (**Support Requirements**) projects the number of quarters required to support new students *and* continuing students at the three enrollment levels noted above.
- Module 6 (**Recruitment Capacity**) projects the number of new students a program can admit/support while also supporting continuing students at the three enrollment levels.

The dashboard contains two tables. Table 1 is a <u>static </u>display of projected support requirements and availability. Table 2 is structured identically as Table 1, but is <u>dynamic </u>and allows programs and divisions to revise their projected resources and new student admission targets to update final projections.

All program new admission projections were provided before resolution of recent labor negotiations, and while the number of TAships available to the campus as a whole will be unchanged this coming year, we cannot assume that will always be the case in outer years. The dynamic components in Table 2 are tied to departmental projections, with the idea that the iteration between the disciplinary divisions, the graduate divisions, and the programs will manifest in department/program-based adjustments to recruitment targets.

Appendix IV. ITF Recommendations, Needs and Justifications (see Appendix VII for cost estimates)

<u>Essential Recommendations to Address in the Near-Term:</u>

1) **Establish a summer graduate student support program to enhance student success**: Provide need-based summer research fellowships at the 50% TAship Step 1 level for eligible doctoral and MFA students. Provide up to three summer support fellowships per eligible doctoral student (one for MFAs) to be awarded within the program's NTTD and preferably post-ATC. Summer support fellowships should be applied for based on demonstrated financial need.

   <u>Justification/Need</u>: A main Key Finding of the ITF was that summer support at any level (except fully through TAships) was associated with enhanced student success in terms of reduced TTD. Investment in summer support to be made available to doctoral students on a competitive need-basis is predicted to reduce the TTD for those very students that would otherwise not have access to summer support and as a result experience longer TTDs, including beyond NTTD, thereby requiring longer durations of support to graduation.

2) **Strengthen DEI support programming to enhance student diversity and success**: Commit support to enhance graduate student diversity and success.
   ○ Increase Cota-Robles fellowship support by 10 fellowships annually (~25% increase).
   ○ Create 10 additional DEI 1-year fellowships with undocumented non-DACA doctoral and MFA student eligibility.
   ○ Establish programming to support DEI efforts at the program level, including at a minimum establishing a DEI Innovation Fund to enhance DEI programming and support for faculty/programs supporting and mentoring underrepresented students.

   <u>Justification and Need</u>: The need for graduate student-focused DEI programming at UCSC is clear, based on the ITF's findings and data from <u>UC Information Center</u>. In addition, 1) Both URM and non-URM Cota-Robles Fellowship recipients graduate at higher rates compared to their non-Cota-Robles recipient counterparts, but URM students benefit significantly more from the Cota-Robles Fellowship in terms of graduation rates (i.e., 54% → 84% improved graduation rate in URM non-CR vs URM CR), compared to non-URM Cota-Robles Fellowship recipients (60% → 75% improved graduation rate in non-URM non-CR vs non-URM CR); 2) The percentage of matriculated URM doctoral/MFA students has increased for Hispanic/Latino students but has not increased for African-American/Black and American Indian/Alaska Native self-identified students; 3) The 10-year doctoral completion rate for domestic underrepresented racial/ethnic groups (URGs) in the 2008-2010 cohorts is lower than that for domestic non-URGs in all academic divisions except Social Sciences; And 4) The time to doctoral degree among the 2016-2019 graduating cohorts is 6.8 years for African American students and 6.0 years for White students.

   <u>Success of the above DEI investments</u> will be assessed by the Graduate Division DEI Director's office by 1) tracking milestone achievements via collected quarterly updates from recipients' Graduate Program Coordinators and compiling them in a Graduate Division database. Annual progress reports will also be collected from recipients directly to ensure the fellowships are promoting timely progress through the degree. And 2) annual assessment of DEI Innovation Fund (DIF) recipients' programming supported by the DIF. The Director will make recommendations for strategic changes based on these assessments.

3) **Incentivize extramural GSR support**: Establish incentives for supporting doctoral students on extramurally funded GSRs, linking use of grant funds to GSR admission and mentoring. The ultimate goal is to incentivize the support of doctoral students on intra and extramurally-funded

GSRships. Several approaches for accomplishing this were discussed on the ITF, including i) a GSRship Tuition/Fee Offset (GTO) program, where the institution covers all (or a fraction) of GSR-quarter tuition/fees for all doctoral students post-ATC that are supported as a GSR and are within 9 academic quarters post-ATC (i.e., pre Doc2a), and/or ii) a GSRship Tuition/Fee Incentive (GTI) program, where a portion (% TBD, perhaps a fraction of the fee/tuition costs on a per-quarter basis) of the ICR associated with supporting doctoral students on extramural grants is returned directly to the PI or program as discretionary funds. The particular program(s) to be adopted and implemented (could be a combination) will depend upon further discussions with campus administrators.

Justification/Need: Extramural research support is the largest (e.g. >40 - 50%) source of GSR support for the majority of doctoral students in STEM fields, and those students constitute approximately two-thirds of doctoral students at UCSC. Supporting doctoral students on extramural GSRs not only provides stipends for those students, but also covers the tuition and fees associated with those enrollments, unlike other major forms of student support across the campus (e.g., TA/GSIships, most fellowships). This in-turn generates an important source of resources that support graduate education more broadly across all disciplines on campus. However, the increasing costs of supporting doctoral students creates significant pressure on extramural funding, which may lead to fewer students being supported on extramural GSRs and a decline in the inclusion of GSR support in future grant proposals that include doctoral student trainees. To address this, the campus must develop a GSR incentive program where the campus covers the GSR-quarter tuition and fees for students post-ATC and within eligibility for the 5 yr support commitment. This will incentivize supporting post-ATC doctoral students (i.e., the subset of doctoral students most likely to be sufficiently trained in research methods and unencumbered with meeting other program requirements/milestones) on extramural funding.

4) **Incentivize and support enhanced mentoring and annual student assessment to promote student success.** Establish a standardized Graduate Division-centered process, with the ability to include program-specific metrics, for the annual assessment of graduate student progress to degree (draft progress form here). The multi-pronged program includes:
   - Create a site on the Graduate Division webpage dedicated to mentoring that foregrounds UCSC's commitment to DEI, first-gen, BIPOC students and links to CITL's Mentoring page, which has best practice guides (long and short) and templates for mentor-mentee compacts, individual development plans. Also model UCB's mentoring web page for some format/emphasis options.
   - Work with CITL to enhance resources on CITL's web page for first-gen and BIPOC students, and resources for faculty mentoring first-gen and BIPOC students. In particular, consider how to enhance resources directed specifically to BIPOC mentee students. (an example of good link for faculty: https://docs.google.com/document/d/1Ayh0p4N1iIZbcTQrYy8Edi30IUHgPnHAMvGLmmHzL-k/edit).
   - Devise incentive programs to encourage programs and faculty to adopt mentoring best practices, possibly under a 'student success' umbrella that encompasses both mentoring and annual student progress reports filled out jointly by student and student advisor, with incentive structure to cover both.
   - Incentivize departmental reward programs for implementing structural things such as:
     - requiring a mentor-mentee compact or individual development plan (templates on CITL's page)
     - annual progress report
     - a comprehensive graduate student handbook

- explicit structure for students whose relationship with their mentors breaks down to have alternate faculty to consult (e.g. grad advising committee that includes at least two people in case student's advisor is on the committee)

The departmental reward program could be incentivized via:
- One time reward to departments for implementing a minimum number of structural changes, if needed (see above list). Say $2.5K/department * 40 departments = $100K.
- Annual incentive to departments for meeting a minimum threshold compliance of filling out annual student progress reports (could be additional block allocation $2k annually (up to $50k total)
- Annual award given at the divisional level (1-2 awards/division depending on size of division?) to reward quality and quantity of faculty mentorship of graduate departments ($1k/award, $10k total).
- Any developed plans should also consider workload for graduate coordinators associated with setting up the structure, checking, verifying, required information

Justification/Need: Enhanced student mentoring practices and programming, especially in support of first-gen and BIPOC students, is expected to be among the most impactful set of efforts to increase the retention, graduation, and success of our underrepresented graduate students. Many outstanding mentoring programs and practices are already in place at UCSC, but they often are not sufficiently supported and incentivized, nor are they universally available across the campus. Enhanced graduate student success at UCSC will require that we provide sustained holistic mentoring for our students in ways and levels appropriate for the discipline, and that the faculty and staff workload required to provide enhanced mentoring, particularly for BIPOC faculty and staff, be appropriately recognized and rewarded.

5) **Establish a Professional Development and Entrepreneurship Program:** Create a summer professional development/entrepreneurship program and course series.

Justification/Need: Graduate training is clearly and inextricably tied to career success. Yet, many of UCSC's graduate programs are not organized to support non-academic pathways, and many faculty do not have the experience or bandwidth to provide such training. The proposed program would centralize and collectivize responsibility for providing professional development. Departments would be relieved from having to shoulder this responsibility on their own, while also incentivizing and leveraging Senate Faculty and Applied Lecturer Faculty from across campus, who would serve as cutting edge researchers and professional subject matter experts. This program could position UCSC as national leaders in professional development in non-academic paths for students in academic programs.

Other Essential Recommendations:

6) **Increase research fellowship support**: Make available two additional quarters of fellowship support for eligible doctoral students (one quarter for eligible MFA) to be deployed in the post-ATC stage of a doctoral student's career (or 2nd year for MFA), and made available within their normative time to degree. These additional fellowships should augment existing advanced-stage fellowship programs currently in place (DYF, Presidents, etc.).

Justification/Need: Analyses of data collected by the ITF clearly demonstrate that enhanced research GSR/fellowship support (versus support coming primarily from ASEs) is associated with increased retention and shorter time to degree for doctoral students. Given the not-insignificant number of doctoral students that separate from the university without graduating, or that graduate

beyond their program's normative time to degree (and with the requisite need to continue supporting those post-normative time students until they do finally graduate), allowing students to focus more on their research during the critical post-ATC stage of their career, coupled with incentivizing programs to enhance mentoring of student to graduation, would overall allow programs and the university to educate, train, and graduate more doctoral students in alignment with UC's education and research mission. This is simply a better use of UC funds than letting students drop out without completion or take 1+ more years to finish. Both of the latter are expensive.

7) **Enhance graduate student wellness at UCSC** by instituting measures to address and implement the Graduate Wellness Group recommendations, including i) measures to alleviate housing-related burdens on graduate students, and ii) adoption of the [Okanagan Charter](#)[24]

Justification/Need: Holistic   student success depends not only on appropriate support and mentoring, but also on a broader supportive environment that minimizes unnecessary barriers and challenges that negatively impact daily life and general wellness. Being able to succeed and thrive while in graduate school relies on having the mental and physical capacity to perform research, teach effectively, manage coursework, and create knowledge. Graduate students face unique challenges at UCSC in accessing basic needs, as well as physical and mental health and wellness resources and support. Our aim is to help graduate students thrive by increasing their access to basic needs, health, and wellness.

8) **Direct University Relations and Divisional Development Offices** to i) prioritize fundraising for graduate student fellowships, particularly for URM students, and ii) develop a UCSC graduate student alumni engagement process to enhance career awareness and development for our current graduate students.

Justification/Need: Increased campus fundraising in support of graduate student research fellowships, career development, and wellness programming, will be essential in sustaining future graduate education and research excellence at UCSC. Likewise, UCSC's graduate student alumni represent a largely untapped resource as potential partners in the success and career development of our current graduate students. Engaging those alumni with our current students would not only enhance post-graduation career awareness and opportunity, but it would provide an important means for our graduate alumni to engage and contribute to the success of the next generation of graduates. Because UCSC has not previously made graduate student success a major focus of a campaign, there is untapped opportunity here. This effort should be closely aligned and completed in collaboration with individual graduate programs, particularly because the personal and professional connections and loyalty that most alumni feel is with these programs and their faculty, and because current graduate students provide compelling stories and examples of impacts and benefits.

9) **Conduct a comprehensive review and audit of the MIP** to evaluate the impacts of this program on enrollment growth (for both Master's and PhD students), possible side-effects, and overall effectiveness of the program, as was originally required at the three year mark of the program in 2017 (per January 21, 2014 MIP approval letter from EVC Galloway). **In the meantime, we also recommend that the CP/EVC issue an updated memo that clearly states the goals and metrics of success for the Master's Incentive Program (MIP)**, appropriate uses for MIP funds at both the program and divisional level, and the requirement for annual   financial reporting of MIP

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[24] The full list of Graduate Wellness Group recommendations are provided in Appendix VI.

allocations, expenditures, and carryforward use commitments that is available to stakeholders (programs, divisions, Graduate Division, central administration).

Moreover, given MIP's purpose historically to in part support doctoral growth, the role of academic master's programs in the graduate ecosystem has received little attention. Given this, **the campus should reevaluate the role of academic versus professional (or professionally-oriented) master's programs in the broader graduate education ecosystem**, and how master's programs should complement and strengthen doctoral and graduate programs in general on campus.

Justification/Need: The success and broader impacts of the MIP program, either positive or negative, remain unclear, since a comprehensive review of the program has not occurred, as was originally required at the three year mark of the program in 2017 (per January 21, 2014 MIP approval letter from EVC Galloway). Even if the MIP has worked exactly as was intended when it launched, conditions have changed, as have costs and student and program needs. It is essential to reassess the roles that the MIP is currently playing, and how the program aligns with campus priorities going forward. In the immediate term, there is uncertainty among MIP participant programs about what constitutes appropriate use and priorities for MIP funds, and how MIP funds are used by academic divisions and programs vary widely. Clarification of appropriate use of MIP would address this uncertainty, as an interim measure, while a broader evaluation of the MIP program is conducted.

Regarding master's programs in the graduate education ecosystem at UCSC, there has been no comprehensive assessment of the role that academic and professionally-oriented master's programs should play in complementing and strengthening graduate education more broadly, including a role for academic master's serving as a pathway for students into competitive doctoral programs at UCSC or elsewhere.

10) **Incentivize development of cross-departmental TA allocation processes**.

Justification/Need: Given the central role of TAship appointments in the training and support of our doctoral students, and the fact that the undergraduate enrollments that generate TAships may not coincide with graduate student training/support needs within a program, transparent processes should be developed within academic divisions that facilitate the matching of doctoral students in one program with TA training/support opportunities that may exist in a different program.

Appendix V. Professional Development Summer Program and Course Series

*Abstract***:** This proposal is for the establishment of a Professional Development Summer Program and Course Series (PDSPCS) for graduate students. The proposed program will i) provide intensive professional development training, complementing professional development programming currently delivered on campus, ii) support graduate training core competencies, including networking and professionalization, and iii) grow doctoral campus FTE counts towards meeting the campus' rebenching targets. These benefits will require modest campus investments, including meeting the costs of instruction, and reducing existing barriers to doctoral student summer enrollment (mainly student tuition/fees). Overall, the proposed program will contribute to graduate student success by focusing on professional development training for non-academic career paths, something that is under-emphasized in our graduate programs, even though the majority of doctoral graduates enter non-academic career paths following graduation.

*Background***:** There has been a longstanding cross-committee Academic Senate effort to systematize best practices for graduate professional development across the campus. In 2016 Grad Council and the Special Committee on Development and Fundraising jointly drafted a list of possible grad career development initiatives that could be centrally managed.[25] Most recently, in 2020/21, the Joint Working Group on Graduate Education conducted a survey in which the majority of campus Senate faculty across all divisions agreed that UCSC doctoral/MFA graduates face an unsustainably competitive market for tenure track academic positions.[26] A recent study from Academic Analytics validates those concerns, showing that UCSC placement of graduate students outside of paths to tenured academic positions ranges from 25 and 40% in BSOE and PBSci respectively, to ~65 - 70% in the Arts, Humanities, and SocSci Divisions. Most faculty nevertheless strongly value engaging in graduate education, specifically being able to work with and mentor Doctoral and MFA students.[27] The majority of faculty also agreed that the diminishing tenure track job prospects should not be used as a reason to close off opportunities for future generations. There is also a recognition that doctoral programs have an ethical and professional responsibility to mentor, train, and help facilitate their PhD graduates' success in a wide variety of existing and new career paths.[28] Graduate training is clearly and inextricably tied to career success. Yet, many of our programs are not organized to support non-academic pathways, and many faculty do not have the experience or bandwidth to provide such training. The JWG therefore recommended that the campus "develop enhanced professionalization programming within the Graduate Division, academic divisions, and departments to better serve professional development needs of graduate students."[29]

*Proposal***:** Following the JWG recommendation, the ITF proposes the Professional Development Summer Program and Course Series for implementation. This program would centralize and collectivize responsibility for providing professional development. Departments would be relieved from having to shoulder this responsibility on their own, while also incentivizing and leveraging Senate Faculty and Applied Lecturer Faculty from across campus, who would serve as cutting edge researchers and professional subject matter experts. This program could position UCSC as national leaders in professional development in non-academic paths for students in academic programs (and not just for those students in professional masters programs).

Specifically, this proposal calls for increased campus revenue to flow to the Graduate Division, as a course sponsoring agency, to create a pilot Professional Development Summer Program and Course Series

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[25] They include: Create a central clearinghouse to identify current departmental and divisional resources for graduate student professional development both inside and outside the academy; Identify successful programs in career-training as potential pilots to be adapted across campus (Grad internship program; IHR Public Fellows; MCD Bio Training

(PDSPCS), with a structural potential to grow core and extramural funding based on enrollment and success outcomes. The program would include a course series, staff support, and guest lecturers. The courses would build different but complementary skills across disciplines, chosen for their broad transferability to a range of careers in teaching, business, and research (e.g., research and writing, team-research project leadership, grant writing, entrepreneurship, etc.). Placement staff would help identify career and placement pathways, including internship opportunities. Guest speakers, including alumni, would be invited from the private and public sectors to present both in-demand skills, models of success (in moving from academia to non-academic professions), and cutting edge applied research methods and technologies to keep the program current and relevant (for faculty, students, and staff). Students could be paired with grad alumni as part of a mentoring network that the program would build.

Grant); Plan for career-training in teaching across the disciplines in 2 and 4-year primarily undergraduate institutions (PUI); Coordinate a campus-wide internship program placing students in industry, non-profits and arts organizations; Develop a "Distinguished Visiting Professionals" program to bring in leading practitioners to campus, enhancing both graduate education and placement; Plan a professional development seminar series; Hire or put in place part-time staff person to help coordinate department efforts at graduate professional development.

[26] Only a fifth (21%) of responding UCSC faculty strongly agreed (and half (54%) agreed/strongly agreed), that doctoral/MFA graduates were competitive for career opportunities in academia with tenure-track jobs. By contrast, nearly half (46%) strongly agreed (and 80% agreed/strongly agreed) that doctoral /MFa graduates were competitive for applied/professional (non-academic) jobs in the field of their discipline. And just under a third (29%) strongly agreed and two thirds (67% agreed/strongly agreed) that doctoral/MFA graduates were competitive in professional jobs more broadly.

[27] 90% of all responding faculty strongly agreed/agreed that "being able to work with doctoral/MFA students is important to me" and 68% strongly agreed/agreed that "Having access to doctoral/MFA students is an important factor in advancing my research." Faculty in the STEM fields were more likely to strongly agree/agree with this last statement than in the non-STEM Divisions: 100% BSOE, 85% PBSci; 67% SocSci; 41% Hum; 40% Arts.

[28] For example, over half (57%) of all faculty who responded answered that we should admit as many doctoral/MFA students as we can place them in "relevant jobs in ANY AREA (academia, private sector, government, etc.)" and only a tenth (10%) responded that we should only admit as many Doc/MFA students as can be placed in tenure track jobs. The remaining 30% felt their programs should "give as many qualified students as can be advised the opportunity to get a doctoral/MFA degree." (Appendix E, p. 152)

[29] JWG Final report (p. 6)

Courses: The proposal includes start-up costs so that the Graduate Division can incentivize Senate and Lecture faculty to collaborate with the Graduate Division on the larger rubrics for the course series, and then collaborate to develop summer graduate courses that provide advanced training in transferable research, writing, entrepreneurial, and leadership skills. These skills are meant to increase student success both within a student's programs and after graduation. The courses will be cross disciplinary, intended to attract Senate and Lecture faculty who are interested in collaborating and in team teaching such areas as (but not limited to): 1) research and writing drawn from different data sources (field, archive, and lab based data) that could be variously useful to students across the disciplines; 2) team-research project leadership; 3) grant and proposal writing (for federal, state, and corporate calls and RFPs); 4) entrepreneurship. The collaborative nature of the course development process and team-teaching approach works to ensure that the courses are not discipline specific but instead bring together the expertise of Senate and Applied Lecturer faculty to help students draw on skills in writing and research that are transferable across campus, disciplines, and career paths. The teaching of these courses could also be open to post-doctoral students, and courses do not have to be team-taught. However, the ITF believes that as a collective effort Senate faculty should be recruited and incentivized to participate through course overloads, and that the excellence and applicability of the courses and course series would benefit from cross and interdisciplinary collaborations.

*Staffing and Programming***:** We envision the PDSPCS as also supported by guest speakers who are professionals, experts, and leaders in their field. They would give presentations to all enrolled summer graduate students in the Series, as well as faculty to help keep current with the needs, skills, technologies, and methodologies in the workplace.

Additionally, this proposal includes the hiring of placement coordinators to work with graduate students to identify career tracks outside of academia and to establish internships and other career pathways in both the private and public sectors. This pilot program would set the stage for deepening relationships between UCSC and Silicon Valley, other private sector companies and agencies, as well as California state programs, etc. We envision setting up a mentoring network of grad alumni who would connect with the campus as distinguished visitors, possible links to internships, and as mentors matched to our current grads. These initial relationships between UCSC and the private and public sector should lead to more established channels and predictable pathways for graduate students to non-academic jobs and careers.

*Entrepreneurship***:** While this proposal calls for seed money and year-over-year commitments from the campus center, this initiative is also intended to attract corporate and private donor support. We recommend that the Graduate Division, Summer Session, CITL, Disciplinary Division Units, Institutes (e.g., THI, ARI, ASI), and University Relations work together to leverage the synergies to grow the PDSPCS.

Timeline and Process: If approved by the end of the Winter quarter (2023), the Graduate Division would advertise the program and put out a call to all Senate and Lecturer Faculty in the Spring of 2023. After review and selection, the Graduate Division would incentivize selected faculty or faculty-teams to collaborate on the rubrics and write and submit course proposals to CIE for review and approval, with a goal of launching in the Summer of 2024. The Graduate Division would hire and staff the program during the 2023-24 academic year.

Budget: The budget supports five areas: 1) summer course overload compensation for Senate Faculty and Applied Lecturers; 2) course rubric development and course development support (one time per course) and refreshes (~once every five years); 3) staffing; 4) programming; 5) tuition/fee waivers for enrolled graduate students. While many of these costs can eventually be supported by extramural funding, core investments will be necessary to get the program off the ground and would, moreover, support: 1) core campus priorities (student success within programs and post-graduation) and; 2) campus requirements (increased graduate enrollment in relation to rebenching targets).

Synergies: This proposal leverages and creates synergies between different Units (Graduate Division, Summer Session, CITL), and Campus Initiatives (Summer Session, Advancing Student Success). Perhaps most important will be the active participation and partnership of the Committee on Development and Fundraising and University Relations to work together on external fundraising. The ITF has started to consult and collaborate with these different units so that the proposal represents an optimized, campus-wide, proposal, rather than discrete and disconnected asks.

Appendix VI. ITF-endorsed recommendations for measures to improve graduate student well-being at UCSC.

These recommendations were developed by the Graduate Wellness Group subcommittee composed of Lorato Anderson (Director of DEI, Graduate Division), Kednel Jean (Director of Basic Needs Programs), Betty Desta (Graduate Student Slug Support Case Manager), and Meg Kobe (Director for Student Health Outreach & Promotion (SHOP).

Intervention	Details	Needs Addressed
Alleviate housing-related burdens on graduate students.	● Follow the UC Santa Barbara model: the university acts as a "co-signer" for international graduate students, as well as provides a support letter and a staff contact for landlords to alleviate concerns. ● Open Graduate Student Housing earlier in the summer and fall quarters. ● Build more graduate student housing.	● Many graduate students (especially international) do not have a credit history or U.S.-based cosigner, creating difficulty in attaining off-campus housing. ● When students have been approved for Graduate Student Housing, their contract doesn't begin until Fall Quarter. This creates a gap of a few weeks for students who must arrive in Santa Cruz earlier (e.g. international) and are not able to afford a hotel or short term rental. ● Cost of Graduate Student Housing is prohibitive for many graduate students. ● Food costs are increased for graduate students in the hotel program due to lack of kitchens.
Adjust payment processes to eliminate basic needs support gaps between the summer and fall.	● Establish guaranteed summer support for graduate students. ● Allow graduate students the option to be paid over 12 months instead of 9. ● Explore ways to pay relocation/housing supplements at the beginning of fall quarter. ● Explore ways to pay international students more quickly, including through gift cards.	● Slug Support basic needs funding for graduate students is insufficient to cover all gaps, especially the gap between spring and fall quarters. ● Fellowship payments take weeks to process, especially for new and international students. ● TAs and other ASEs do not receive any fall paychecks until November.
Centralize wellness resources in graduate-only	● Perform a campus audit to identify underused spaces and assess accessibility needs. ● Wellness support staff should hold	● There are not enough rooms and offices for staff and graduate student wellness programs. ● Some buildings are not

and graduate-accessible spaces.	office hours in designated graduate student areas, like the Graduate Student Commons. ● Establish more graduate student-only hours in existing wellness services. ● Provide more virtual options for graduate wellness programming. ● Create a web page dedicated to graduate student wellness resources. ● Establish intentional outreach to graduate students about available wellness services through events, emails, and flyers. ● Encourage academic divisions and departments to proactively engage with graduate students about stress reduction and wellbeing.	accessible for people with mobility limitations. ● Graduate students are largely unaware of the wellness resources available to them. ● Graduate students often feel that wellness spaces and resources are not catered to them; they assume the services are only for undergraduate students or that graduate students are an afterthought. ● Graduate students often feel uncomfortable accessing basic needs and wellness resources when undergraduate students are present. ● Graduate students report that faculty often treat wellbeing and self-care as separate from the academic setting.
Adopt the Okanagan Charter at UC Santa Cruz.	● The Okanagan Charter is an international charter for health promoting universities and colleges that "calls upon higher education institutions to incorporate health promotion values and principles into their mission, vision and strategic plans, and model and test approaches for the wider community and society." ● The Charter requires the institution to establish centralized, clear, achievable goals and strategies dedicated to health and wellness promotion. ● Joining the Charter provides access to the US Health Promoting Campus Network (which includes UCLA, UC Berkeley, and UC Irvine), connecting us to resources and support to establish priorities and programs.	● There is a lack of a clear, cohesive vision from campus leadership regarding basic needs and wellbeing for graduate students. ● Campus offices compete for the same funding to support student wellbeing, as there is a lack of cohesion around fundraising.
Target more staff hiring to graduate wellness support.	● Hire more trans/queer-identified CAPS counselors of color. ● Provide more permanent funding to the Ethnic Resource Centers, especially their Graduate Retention	● There is a lack of diversity amongst staff, which doesn't reflect the student population. ● Identity-specific graduate student support tends to be

	- Interns. - Hire more staff in CAPS, Slug Support, and other wellness areas who are committed to graduate student support.	housed in the Ethnic Resource Centers, which are under-funded. The ERC Graduate Retention Interns are paid less than similar positions on campus, and are not permanently funded. There is a general lack of wellness staff committed to graduate students.
Prioritize transparency in communications between leadership and graduate students.	Leadership should create targeted communications to graduate students to promote transparency around graduate support initiatives. These communications should be regular.	Relations between graduate students and campus leadership have not healed since the wildcat strike, and 80% of UCSC graduate students did not vote for the new contract.

Source Document

Appendix VII. Estimated Costs For Recommended Increased Investments in Graduate Education.

I. Establish a summer support program to enhance student success		
Summer stipend (50% TA)	$9,908	$9,908
Current Doc/MFA Program Size (minus Doc2a)	1,441	1,441
% Eligible	35%	50%
Subtotal Summer Stipend Per Year	**$4,997,100**	**$7,138,714**
II. Strengthen DEI support programming to enhance student diversity and success		
10 Additional Cota-Robles Fellowships per year	$1,263,690	
10 DEI 1-Yr Fellowships	$421,230	
DEI Support Programming (e.g., DEI Innovation)	$100,000	
Subtotal DEI Support Per Year	**$1,784,920**	
III. Incentivize extramural GSR support	**TBD**	
IV. Incentivize and support enhanced mentoring and annual student assessment to promote student success.	**$60,000**	
V. Establish a Professional Development and Entrepreneurship program		
# Graduate Students Enrolled	50	100
# of Courses Sections Offered	5	10
Instructional Cost (recurring)	$75,000	$150,000
Course Development Cost (one time)	$86,250	$86,250
Tuition/Fee Waiver (if ASE) or Scholarship (if not)	$139,250	$278,500
Total Cost for Year One	**$300,500**	**$514,750**
Subtotal Summer Course Series (after courses have been developed)	$214,250	$428,500
VI. Increased research fellowships (2 post-ATC career quarters per student)		

Current Doc/MFA Program Size (minus Doc2a)	1,441
Additional Fellowships Per Year (assuming 25% of students eligible per yr)	360
Salary/Stipend + Tuition/Fees/Benefits	$16,200
Total Fellowship Cost Per Year	**$5,832,000**
VII. Enhance graduate student wellness	**TBD**
VIII. Engage University Relations and Divisional Development Offices	**No direct cost**
IX. Conduct a comprehensive review and audit of the MIP	**No direct cost**
X. Incentivize development of cross- departmental TA allocation processes.	**No direct cost**
Total Investment (minus TBDs)	**~$13M - $15M**

Appendix 7: Memo from the Coordinating Committee on Graduate Affairs (CCGA): Recommendations on Independent Study courses

INTERIM GUIDANCE FROM CCGA on Directed Studies Courses

Definition of 299 Courses

On most campuses, 299 courses come under the category of graduate-level directed studies courses (290s). On some campuses, 299s are used interchangeably with 297 or 295, and on some campuses 596 and 599 are used for directed study courses, while others use 299 for education-only courses, but for the purposes of this document, we will refer to all directed study courses as "299". 299 courses are often classified as research for the thesis or dissertation. They may also be taken as a form of independent study, in connection with research in laboratories and towards a student's thesis. The material produced as part of the 299 may be intended for future publication or other activities (e.g., performances, poster presentations, etc.). In a lab setting, the 299 allows a student to conduct research under the oversight and mentorship of a professor. 299 courses are typically for S/U grades and taken for 1 up to 12/16 units (quarter/semester) per term.

Clarifying the research and mentorship component of 299 courses is ongoing on a departmental, campus, and systemwide level. CCGA discussed this issue and compiled a repository of campus-level efforts, including documents generated by graduate councils on the various campuses, often in the form of guidance on syllabus development for graduate-level individual study or research courses.

Guidelines for Clarifying the Research and Mentorship Component of 299 Courses:

The following may help clarify the academic expectations from the faculty member to the student and mentorship involved with 299s.

Articulating the academic coursework expectations of the instructor establishes the basis for grading as well as the scope of academic coursework effort (separate and apart from any employment responsibilities) to be undertaken by the student. Such articulation should also specify the types of activities that will be mentored and overseen by faculty.

CCGA affirms that:

(i)   The definition and clarification of the expectations in terms of scheduled time for graduate students taking 299 courses is at the discretion of faculty members.
(ii)   At the beginning of each term, faculty should clearly describe to their graduate students the expectations for their academic progress as part of a 299 course.
(iii) Underlying statement (ii) is the recognition that while activities performed for academic goals and expectations may be similar or even the same as activities performed for employment, their purposes are different, and the standards by which these activities must be measured are different. While employment is performed as service for defined periods of time or for specified sets of activities, academic effort is undertaken in pursuit of defined academic goals and expectations that are not always associated with defined periods of time or specified sets of activities.
(iv)   Disagreements about academic effort should be handled through existing procedures.

The following are some suggestions faculty members and programs may want to consider:

1. Faculty mentors may articulate their expectations for the graduate student taking a 299 course in the form of a syllabus, a course description, or a course add form. Faculty are encouraged to formalize grading criteria to create clarity for the students and to prevent misunderstanding. The scope of the research as well as the basis for grading the research

should be defined by the professor, and understanding of these should be acknowledged by the student. Other factors to consider include the number of meetings to be held, the timeline for completing research projects, milestones in the process, and criteria for the evaluation. We emphasize that Senate Regulation 760 states: "The value of a course in units shall be reckoned at the rate of one unit for three hours' work per week per term on the part of a student, or the equivalent." Consequently, it is important that students enroll for the number of units consistent with stated expectations.

2. In order to set, assess and gauge expectations in 299s, faculty may use different tools, including self-assessment surveys provided by the graduate division or graduate groups, Gantt charts, and meetings with the student.

3. For 299s taken in the context of lab research, the faculty PI can clarify expectations that are part of the academic training of the graduate student.

4. Academic credit may be based on research activities conducted by a student such as: writing a paper, preparing research towards a thesis chapter, designing an experiment, preparing or compiling a research survey or questionnaire as part of an experiment, writing a play or screenplay, creating a performance, or developing an original work of art.

5. 299s are not used for teaching/TAing responsibilities.

6. Departments may collate a repository of examples and templates of expectations or course syllabi for 299 courses to share with faculty members. Alternatively, there could be a program-level syllabus template with example language, such as wet lab-specific sentences that a faculty may use.

Appendix 8: Memo from the APC Workgroup Co-chairs to the Provost and Senate Chair regarding delineation of academic expectations

JOINT SENATE-ADMINISTRATION WORKGROUP ON THE FUTURE OF UC DOCTORAL PROGRAMS

August 11, 2023

Provost Katherine Newman and Academic Council Chair Susan Cochran, Co-Chairs, Academic Planning
Council

RE: UPDATE ON THE JOINT SENATE-ADMINISTRATION WORKGROUP ON THE FUTURE OF UC
DOCTORAL PROGRAMS

Dear Provost Newman and Senate Chair Cochran:

Our Workgroup is pleased to provide this interim guidance for UC faculty on the delineation of expectations
for academic research, distinct from our expectations for employment, related to some of the questions in our
charge, summarized as follows:

- What are the principles that should guide academic progress towards the completion of a graduate
  degree?
- What opportunities exist to more clearly delineate between compensated work and academic progress?

We recognize that interim guidelines are urgently needed in advance of the impending start of the fall term.
We also acknowledge that any recommendations may need to evolve as we collectively clarify, adapt, and
implement our new procedures.

When graduate students serve in an employment (Graduate Student Researcher) role, the distinction between
work done for pay and activities undertaken in pursuit of academic goals can be challenging to articulate,
particularly when extramural support provides GSR funding for research that is fundamental to a student's
academic program. In some fields, GSR work and student research have traditionally been seen as
indistinguishable in terms of many of the specific activities undertaken. Over the past several years, some
campus-level Graduate Councils have attempted to clarify the meaning of academic credit in directed studies
courses through a variety of mechanisms (e.g., requiring written expectations aligned with accreditation
standards for all courses that confer academic credit). However, these approaches have not been
implemented consistently across all UC campuses. Graduate students occupy different employee and student
roles, sometimes simultaneously, throughout their time at the university. This dual status as well as the
implications of the new contracts, have created a need for a systemwide approach.

First, we refer our colleagues to the [Interim Guidelines for Directed Studies Courses](#) (e.g., courses numbered
299 or 599) recently released by the Academic Senate's Coordinating Committee on Graduate Affairs
(CCGA). This document states: "At the beginning of each term, faculty should clearly describe to their
graduate students the expectations for their academic progress, as distinct from the expectations for their
employment." Underlying this statement is the principle that while activities performed for academic credit
may be similar or even the same as activities performed for employment, their purposes are different, and the
standards by which the activities must be measured are different. ***While employment is performed as a
service for a defined period of time or for a specified set of activities, academic effort is undertaken in
pursuit of a defined academic goal that is not always associated with a precise expectation of time or with
predetermined activities.*** We and the CCGA further recommend that faculty advisors of graduate students
enrolled in directed studies courses document their academic expectations, as well the basis on which the
students will be graded, in a syllabus (or equivalent) for each student in each course.

Second, while the content of a syllabus attached to any course, including its grading plan, is at the discretion of the faculty member responsible for that course, we must create such documents based on common principles. In particular, the overarching goal of directed studies courses for graduate students is to provide a framework for, and faculty guidance of, student academic progress. ***Thus, academic expectations are defined by progress toward the dissertation or final thesis project, including through a collection of intermediate goals and learning outcomes.*** Research and creative activities are by their nature open-ended. Learning from trial and error, and even failure, are intrinsic parts of the process. Finally, the effort required to engage in original research and to create new knowledge may vary from one student to another, from one term to another, and from one dissertation project to another. In general, faculty advisors are highly experienced at guiding such projects, and they should discuss with their students how to pursue their academic goals in light of these varying parameters.

Third, we acknowledge that considerable additional effort may be required of faculty advisors to articulate academic expectations clearly in writing and to discuss them with each advisee. Faculty are encouraged to make use of sample documents when possible, while adapting such examples and templates based on discipline, project, student, or other specific details. Faculty may also decide to create yearly plans that can be updated periodically as needed, as long as the basis for grading each term's progress is clearly articulated. Faculty may wish to highlight their development of academic progress expectations when they document tenure, merit, and promotion activities, as described in APM 210-1.d.1: "general guidance, mentoring, and advising of students; effectiveness in creating an academic environment that is open and encouraging to all students, including development of particularly effective strategies for the educational advancement of students in various underrepresented groups."

In summary, faculty have the authority to require, assess, and judge academic outcomes, and they must do so for all graded experiences in the university, consistent with the policies and procedures of the Academic Senate. Faculty, when they supervise the work of graduate student employees, also have the responsibility to evaluate employment appropriately.

For situations in which employment activities overlap with activities related to the academic progress of graduate students, faculty should use employment assessment processes (e.g., reappointment, letters of concern, discipline) to address employment expectations and outcomes (e.g., time spent, activities completed). They should use academic assessment processes (e.g., grades, annual student reviews) to address academic outcomes (e.g., learning outcomes, dissertation progress).

Sincerely,

Susannah Scott, Co-Chair (sscott@ucsb.edu)   Gillian Hayes, Co-Chair (hayesg@uci.edu)

cc.   Academic Senate Vice-Chair and Chair-Elect James Steintrager
       Members of the Academic Council of the UC Academic Senate
       Executive Directors of the divisional Academic Senates