

Office of the President

TO MEMBERS OF THE ACADEMIC AND STUDENT AFFAIRS COMMITTEE:

DISCUSSION ITEM

For Meeting of November 17, 2021

GROWING OUR OWN: GRADUATE ENROLLMENT AND DIVERSIFYING Ph.D. PATHWAYS

EXECUTIVE SUMMARY

UC 2030 goals articulate the University's contribution to California through expanding inclusive access to quality opportunity across UC's educational pathway, including diversifying the pathways to roles as researchers and professors. To date, UC 2030 goals have emphasized degree attainment, undergraduate outcomes, and faculty growth and diversity. The primary focus on graduate enrollment has been that graduate growth is needed to add 40,000 of the additional 200,000 degrees by 2030.

This item articulates how UC intends to ensure that graduate growth will yield academic doctoral students and future researchers and scholars that reflect California's diversity. This initiative fits within the UC 2030 framework, reinforcing the overarching purpose of this effort to seize this generational opportunity to advance educational equity for undergraduate and graduate students and faculty.

BACKGROUND

UC faculty are recognized and emerging leaders in their respective fields. They produce creative works and research that increase knowledge, address challenges, and improve society. They train talented graduate students who gain knowledge within the field, experience supporting faculty research and teaching, and develop skills to become future researchers and/or professors. Increasingly, researchers trained at UC are founders of or move directly into start-up companies based on research they began at UC, fueling California's innovation-based economy. UC's intentional focus on ensuring these students better reflect the state's diversity will help California remain an innovation driver and world-leading economy.

A diverse and excellent faculty is essential to the excellence of the education UC aims to provide its students; effecting that diversity requires robust intervention for the entire faculty pipeline, beginning with California undergraduate and graduate students. Enhancing faculty diversity is incorporated within UC 2030 goals and is a priority for the State Legislature, Regents, UC President, chancellors, Academic Senate, UC students, and the California public.

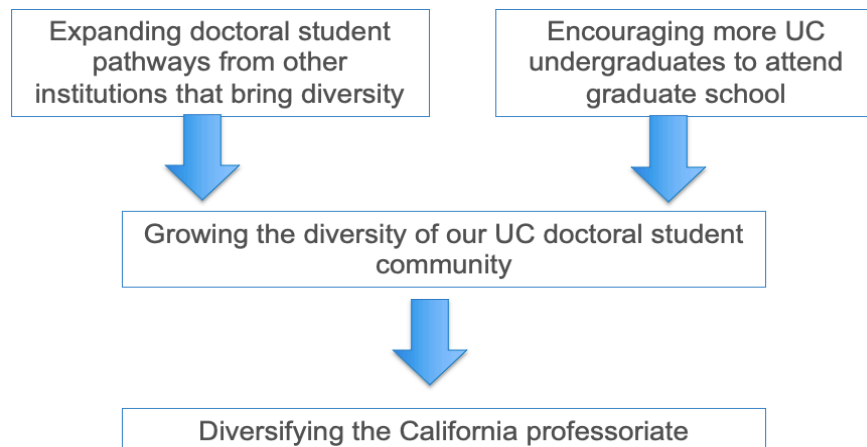
“Growing Our Own Graduate Enrollment” is a systemwide initiative of the UC Council of Vice Chancellors (COVC). It aims to increase the number and proportion of UC undergraduate degree recipients who earn an academic doctoral degree, and to increase the number and proportion of UC doctoral graduates from UC, California State University (CSU), other Hispanic-Serving Institutions (HSIs), Historically Black Colleges and Universities (HBCUs), and Tribal Colleges and Universities (TCUs). With this initiative, UC aims to build sustainable pathways for students from first-generation, low-income, and underrepresented groups¹ to the professoriate, in California and beyond.

The initiative recognizes the importance of multiple interventions and partners—scaled up and sustained over time—to identify and cultivate talent for California’s future professoriate. The initiative expands existing programs at UC, creates stronger connections among institutions of higher education for identifying and cultivating talent, and prioritizes academic doctoral training for California undergraduates who come from backgrounds as diverse as California itself.

Through consultation with leaders in graduate education and review of the supporting data, COVC leaders developed the framework for this initiative along with its two driving goals:

- 1) Increase the number and proportion of UC Ph.D. students who come from institutions with historically high diverse student populations (e.g., UC, CSU, HBCU, HSI, TCU)
- 2) Increase the number and proportion of UC undergraduates who go on to earn a Ph.D.

Figure 1. Grow Our Own graduate enrollment conceptual framework



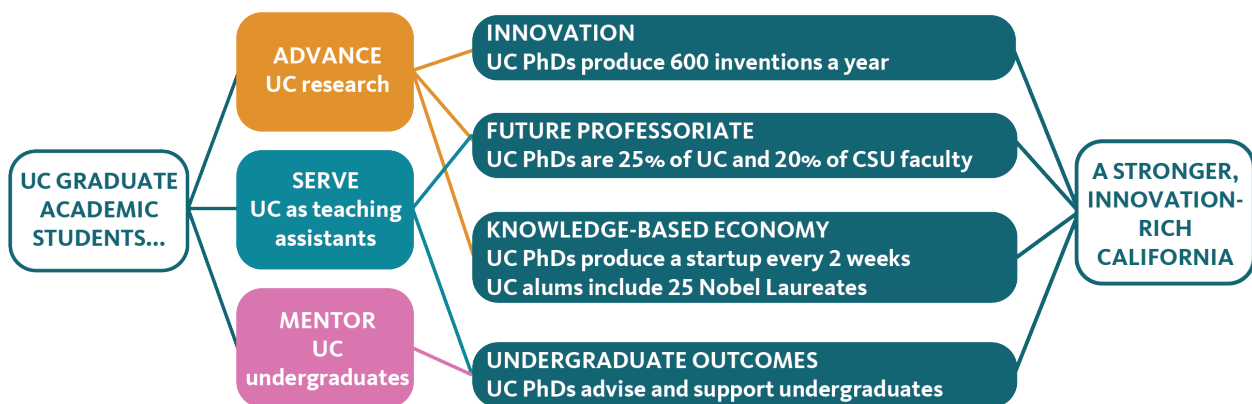
To date, UC 2030 goals have focused on degree attainment, undergraduate outcomes, and faculty growth. The University would integrate this “Grow our Own Graduate Enrollment” initiative into the UC 2030 framework, expanding on a critical component of the pathway to the professoriate and demonstrating how, through graduate enrollment growth needed to achieve

¹ Underrepresented groups include African American, American Indian, and Hispanic/Latino(a). This initiative also seeks to enroll more Asian Americans in humanities and social science programs, and more women in science, technology, engineering, and mathematics (STEM) programs.

graduate degree attainment goals, UC would also be intentional about ensuring these students better reflect California diversity.

Prior Regents' items on the value of UC doctoral education and Ph.D. degrees highlight why this initiative is important. UC academic doctoral students become the next generation of the state's researchers, producing 600 inventions a year and creating a start-up company every two weeks. These graduate academic students teach and mentor undergraduates and then become the future professoriate, with 25 percent of UC and 20 percent of California State University (CSU) faculty having a UC Ph.D. UC graduate degrees also advance economic mobility, beyond what is achieved by undergraduate degree recipients. Expanding the pathway to a UC graduate education broadens opportunities for these students and strengthens California.

Figure 2: Role of UC graduate academic students supporting UC operations and state outcomes



CONCEPTUAL FOUNDATION

UC enrolls over 27,000 doctoral students per year across numerous disciplines and nearly 550 programs of study. About 4,000 new Ph.D. degree recipients enter the work force each year, with roughly 40 percent² going on to hold tenure-track faculty positions at colleges and universities in California and beyond. UC alone produces seven percent of the nation's Ph.D. graduates each year. The scale and scope of UC's doctoral education enterprise has a significant impact on the diversity and demographic makeup of the future professoriate.

Achieving the UC 2030 goal of diversifying the professoriate will rely on UC further diversifying its doctoral student population. Figure 3 shows the demographic makeup of UC's 27,000 doctoral students in 2019–20. More than half are male and roughly 15 percent are from underrepresented racial/ethnic groups [i.e., African American, American Indian, and Hispanic/Latino(a)]. While the overall doctoral population exhibits slightly more diversity than it did five years ago, when 57 percent were male and 12 percent were from underrepresented

² Source: Employment and doctoral experience of Ph.D. recipients:
<https://www.universityofcalifornia.edu/infocenter/employment-and-doctoral-experience-phd-recipients>

racial/ethnic groups, *entering* doctoral student diversity has grown much more rapidly over the same time period, from 12 percent to 18 percent.

Figure 3. UC doctoral student demographics, 2019–20

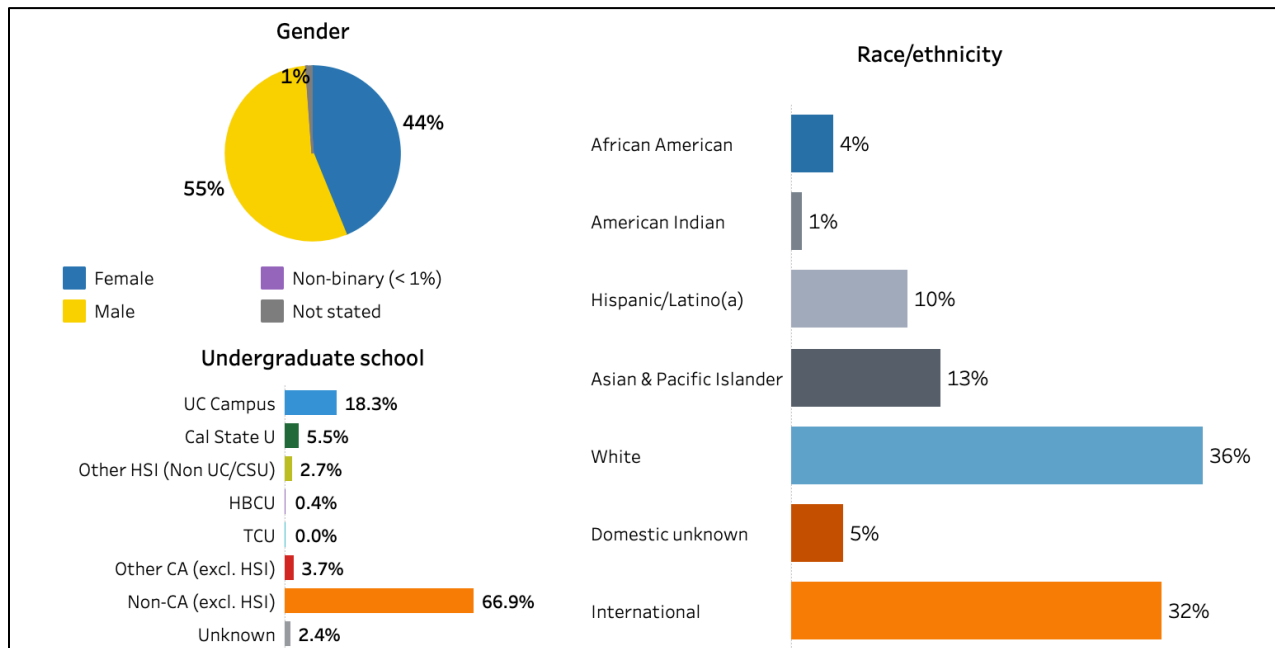


Figure 3 also shows the undergraduate institutions where UC doctoral students earned their bachelor’s degree. Over two-thirds come from colleges and universities outside of California while 27 percent come from institutions in California. This distribution has been relatively steady over the past several years. Collectively, however, only 29 percent of UC doctoral students originate at the undergraduate institutions prioritized by the Growing Our Own Graduate Enrollment initiative (Figure 4). Increasing both the number and proportion of students from the priority institutions will be the focus of this initiative.

Figure 4. Entering doctoral students by undergraduate institution, Fall 2017–2020

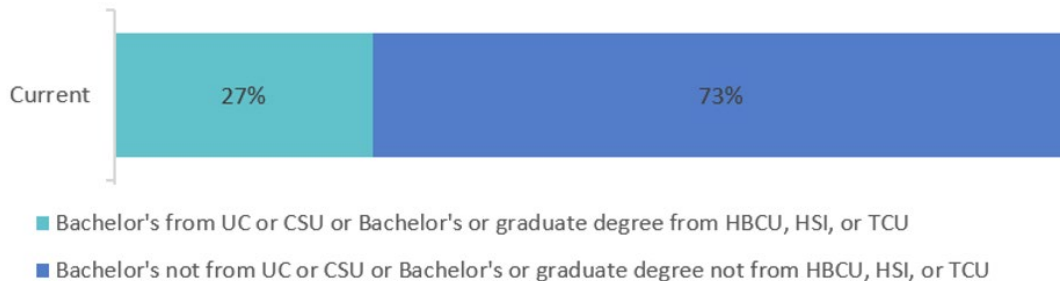
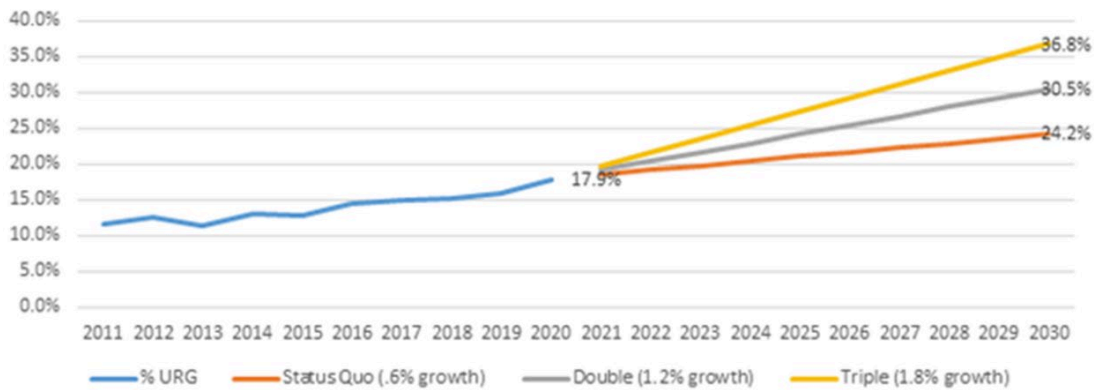


Figure 5 demonstrates why the University needs to do something different to diversify UC Ph.D. students. If UC diversity grows at its current rate (i.e., status quo of 0.6 percent annual growth), the percentage of underrepresented students will grow from 18 to 24 percent by 2030.

Figure 5. Percent underrepresented among entering UC doctoral students by growth scenario



The Growing Our Own Graduate Enrollment initiative would seek to ramp up efforts to diversify academic doctoral students, by focusing efforts to yield students from institutions with greater diversity. As Figure 6 shows, while about 16 percent of all entering doctoral students are from underrepresented racial/ethnic groups, 29 percent of those entering from UC, California State University (CSU), Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institution (HSIs) (non-UC/CSU), or Tribal Colleges and Universities (TCUs) are from an underrepresented racial/ethnic group. Enrolling a higher proportion of students from the priority institutions will accelerate the growth in diversity of the overall doctoral population and more rapidly translate into more diverse Ph.D. graduates entering the workforce and the professoriate.

Figure 6. Diversity of students entering UC doctoral programs, Fall 2017-2020

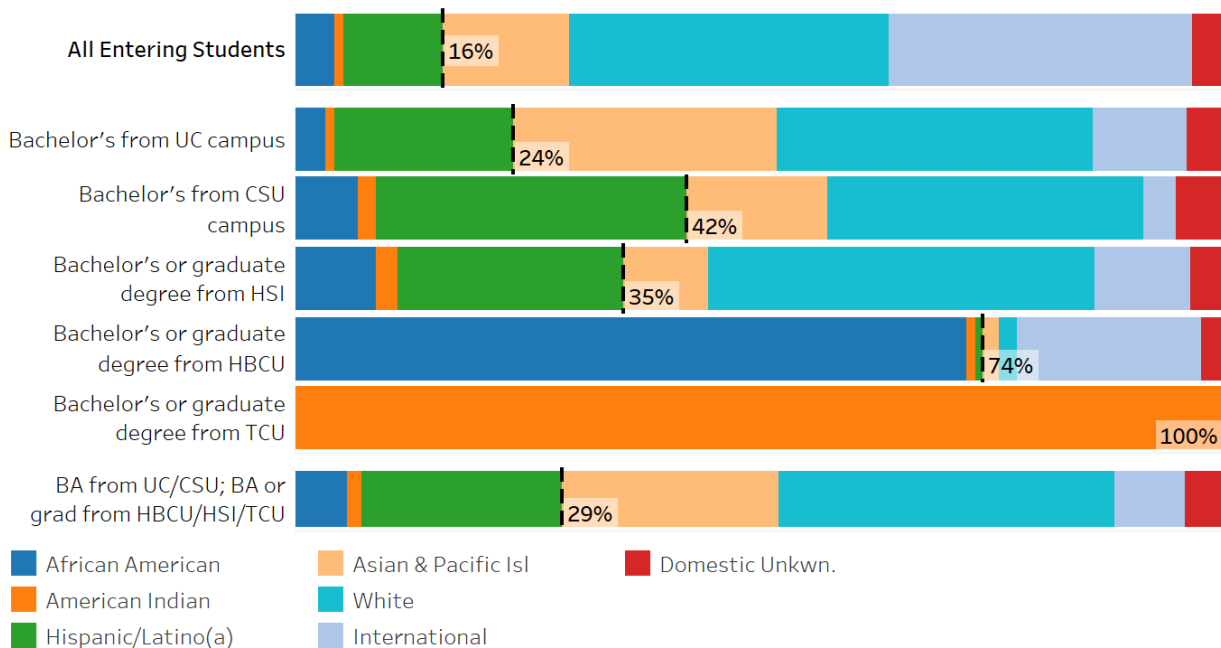
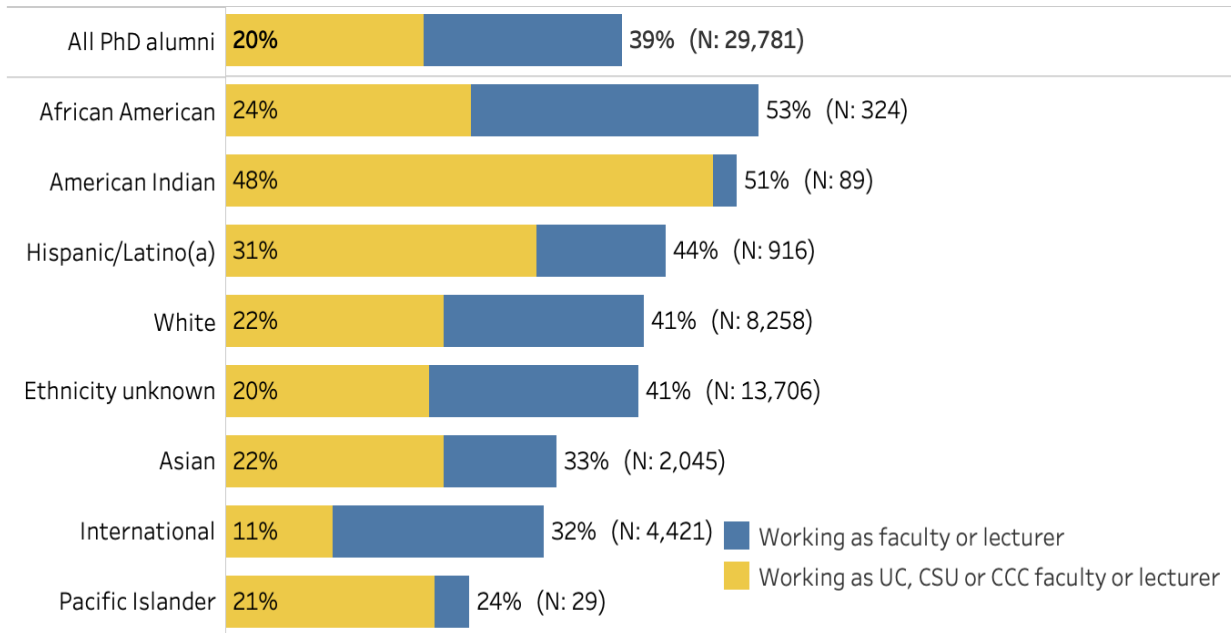


Figure 7 provides a new data point which illustrates UC's potential to help diversify all three public higher education segments in the state. The chart shows the proportion of UC Ph.D. alumni who have gone on to work in tenure-track faculty positions and the share who have done so at a UC, CSU, or California Community Colleges (CCC) campus. Over the past 25 years, 40 percent of all UC Ph.D. alumni have gone on to faculty or lecturer positions, with half of them serving as faculty at a UC, CSU, or CCC campus. Underrepresented Ph.D. alumni are both more likely to go on to faculty positions and to do so at a UC, CSU, or CCC campus compared to Ph.D. alumni from non-underrepresented racial/ethnic groups. The reliance of California's university systems on both the volume and diversity of UC Ph.D. graduates to serve on their faculty demonstrates how the combination of additional graduate enrollment and the Growing Our Own Graduate Enrollment initiative will be an important vehicle for diversifying the professoriate.

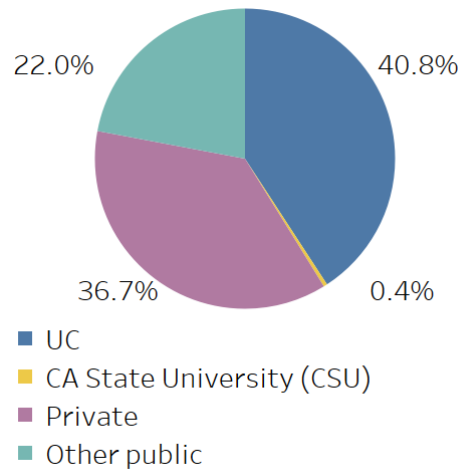
Figure 7. UC Ph.D. alumni working in tenure-track faculty or lecturer positions



Source: Self-reported from LinkedIn profiles as of 2019 for graduates of UC PhD programs between 1990 and 2016.

A nascent but robust pipeline from UC undergraduate to UC doctoral programs already exists. Additional data shows that among the relatively small proportion of UC undergraduates who go on to complete a doctoral degree (four percent), the largest proportion of them earn their doctoral degrees at a UC campus. Forty percent of UC undergraduates who go on to complete a doctorate do so at a UC campus (Figure 8). Those UC undergraduates who complete a doctorate at UC, nearly half (48 percent) do so at their “home” UC campus where they earned a bachelor’s degree.

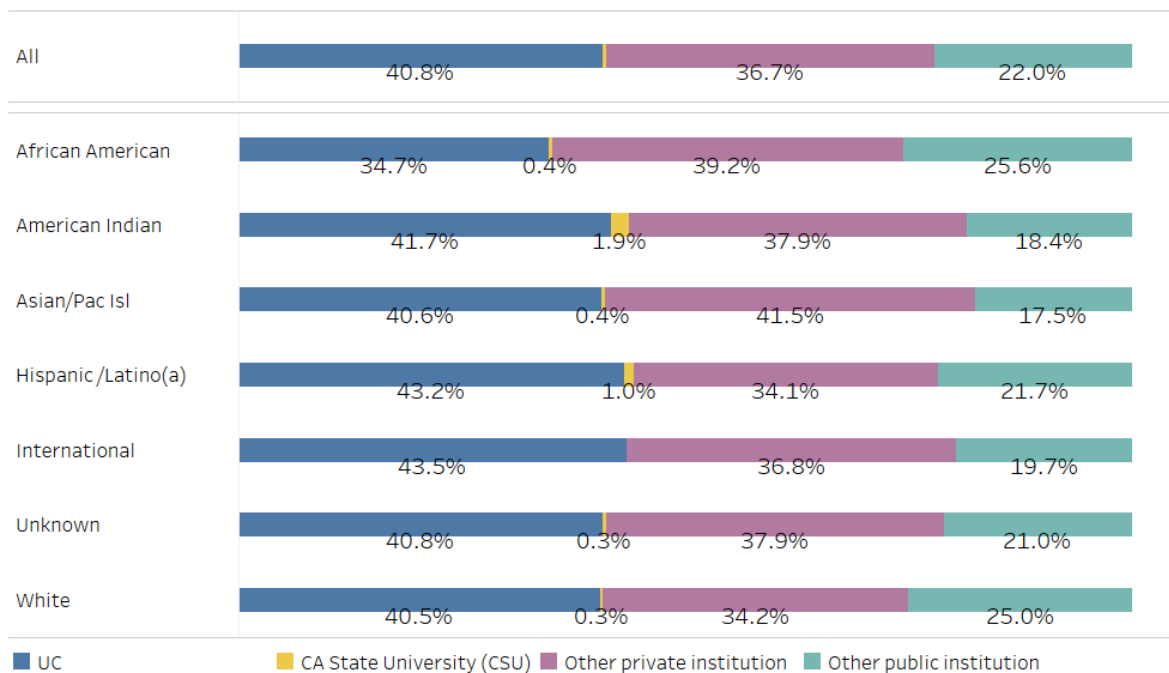
Figure 8. Institution of doctoral degree among UC undergraduates completing a doctorate



Source: UCDW and National Student Clearinghouse data 2000 to 2020.

UC undergraduates' likelihood of earning a doctorate from a UC campus varies by demographic group. Figure 9 below shows the doctoral completion rates by institution from Figure 8 above broken out by ethnicity. African American students are more likely than other students to complete a doctorate at a non-UC institution, whereas American Indian and Hispanic/Latino(a) students are among the most likely to complete a Ph.D. at a UC campus compared to other racial/ethnic groups.

Figure 9. Institution of doctoral degree among UC undergraduates completing a doctorate, by ethnicity



Furthermore, UC is looking to broaden the pathway for CCC transfers to consider continuing on to get a graduate degree, with only three percent of CCC transfers currently going on to earn a Ph.D.

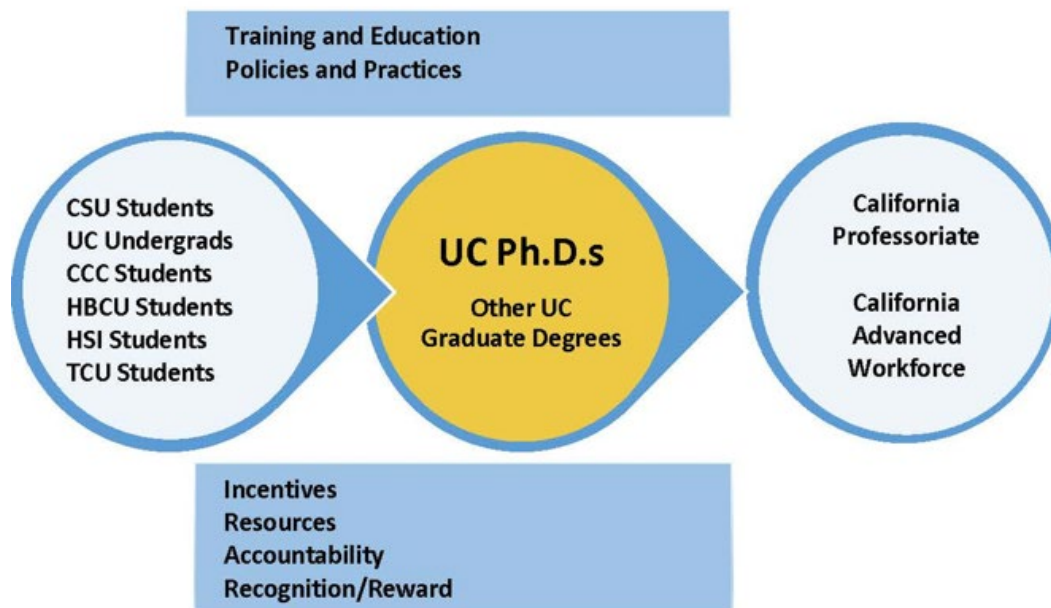
Taken together, these data points on UC undergraduate aspirations and pathways to the doctoral degree suggest some unrealized potential in the pipeline from UC undergraduate to UC doctoral degree programs.

IMPLEMENTATION FRAMEWORK

The Office of the President (UCOP) provided support and an implementation framework to aide campus goal setting. The following Growing Our Own Graduate Enrollment framework outlines six key strategy modules that aim to support inclusion in UC Ph.D. and faculty ranks:

- incentives
- training and education
- policies and practices
- resources
- accountability
- recognitions and rewards

Figure 10. Growing Our Own Graduate Enrollment implementation framework



UC has an array of resources, strategies, programs, and efforts already aligned with the Council of Vice Chancellors (COVC) goals of improving the undergraduate to graduate to professoriate pathways and building a much more inclusive California professoriate. These existing efforts are

not necessarily connected or coordinated in a manner to maximize larger campus or system priorities and goals. Some efforts have not been effectively resourced or leveraged to yield the desired results. Also, there are policies and, more notably, practices that can impede desired goals, particularly around equity and inclusion. Implementing a systemwide strategic framework to advance inclusion in UC's Ph.D. and faculty ranks will be well-served by intentionally connecting incentives, resources, policies, practices, accountability, training, and recognition to achieve these goals.

Incentives: At every opportunity, options for leveraging existing funding and resources (including those not designated to address equity/diversity) should be considered to help incentivize faculty, administrator, and student behaviors to fuel advancement of this COVC goal. Policies and practices should be examined for better alignment with this strategy. Areas to consider to improve alignment of efforts and advance goals include distribution of department resources, eligibility for campus central fellowships/awards, and commitment to guaranteeing every Ph.D. student a minimum of five years of support upon admission to a Ph.D. program.

In addition to using existing fund distribution to help incentivize faculty behaviors, there should also be consideration to dedicate "new" funding, even small amounts, or redirected funds directly to faculty to support their engagement in pathways efforts and/or to help attract and retain underrepresented faculty. Some options for consideration include the Faculty Research Assistance Program, loan forgiveness incentives to help attract faculty from underrepresented racial/ethnic groups to UC, new resources or diverting funds to offer course buyouts to faculty who conduct intensive research/mentoring of undergraduates and master's level students from target institutions, and providing new resources to support new initiatives.

Training and Education: There are a variety of training opportunities and education enhancements that could prove critical to the overall success of the Growing Our Own Graduate Enrollment framework. Some efforts will be focused on students, while other opportunities will be for faculty. Some examples include the possibility of establishing a required research exploration course for all UC undergraduates. The uniqueness of UC is that it is a research university system, yet there is no strategic mechanism to make sure that each and every UC undergraduate has research exposure/experience. Departments must also deploy strategies and actions to create and maintain inclusive environments. Programs should be incentivized to develop and implement comprehensive strategies and changes to ensure progress is made with respect to equity and inclusion throughout the department. The programs to which underrepresented scholars are being admitted should be more reflective and inclusive of those students, from curriculum, to faculty, research areas, etc. Incentives and accountability to improve program culture and inclusiveness are critical to making headway on what is a persistent and damaging problem at UC, one that disproportionately impacts underrepresented scholars.

Policies and Practices: Policies as well as practices should be examined for alignment with achievement of these goals. The UC community should challenge norms, practices, and policies that may be a disservice to, or actively work against, facilitating greater access to Ph.D. pathways for first-generation students.

Resources: In addition to leveraging funding resources to incentivize advancement, it will be important to marshal existing resources to expand and increase impact, or at least to maximize alignments and priorities in support of the pathways framework. It will also be important to creatively consider the engagement and use of new resources and/or using existing resources in new ways. Campuses should be encouraged to be creative.

Accountability: Growing Our Own Graduate Enrollment strategies must be tied to established milestones, with specific achievements tied to campus/department goals and incentives that will lead to intended outcomes.

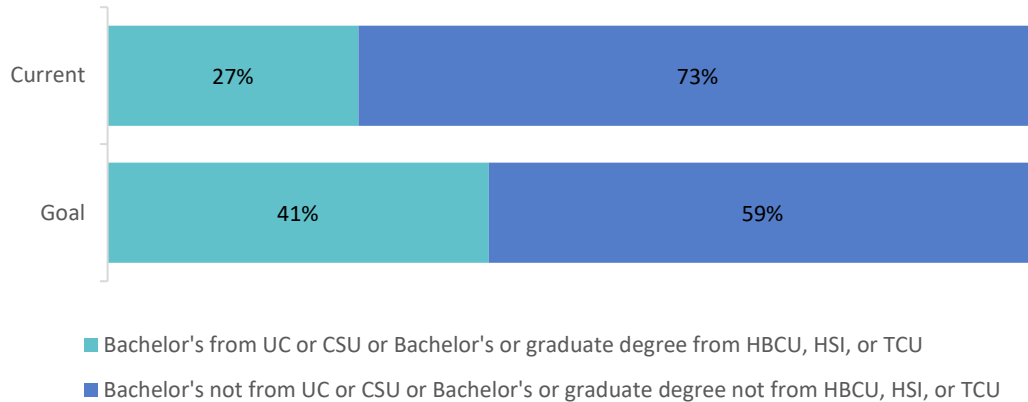
Recognition/Reward: Campuses are encouraged to utilize existing Academic Personnel Manual (APM) policies to reward desired behavior. The University of California Academic Personnel Policy governing faculty appointment and promotion (APM - 210) requires that faculty contributions to diversity receive recognition and reward in the academic review process. In addition to APM policies, administrators are encouraged to use other formal and informal mechanisms (including campus and systemwide awards), to recognize and reward faculty and others who drive greater engagement and results.

The six key strategy modules provide examples of potential efforts, programs, ideas, and initiatives that campus leadership may utilize or expand to impact Growing Our Own Graduate Enrollment goals on their campuses. To substantively advance inclusion, UCOP encouraged campuses to utilize each of the six strategy modules in developing Growing Our Own Graduate Enrollment strategies that meet their specific needs and goals and support the framework for pathways to meet and diversify California's advanced workforce needs and help equip California with a future professoriate that better reflects the state's diversity.

CAMPUS GOAL SETTING AND PLANS

Using institutional data and the Growing our Own Graduate Enrollment framework provided by UCOP, campuses were asked to set 2030 goals for the proportion of Ph.D. enrollments from UC BA/BS, California State University (CSU), Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and Tribal Colleges and Universities (TCUs) and develop a comprehensive plan on how to achieve those goals.

Figure 11. Current percent of all academic doctoral students from UC/CSU/HBCU/HSI/TCU and Growing Our Own goal



Campus plans identify existing resources, along with existing and planned institutional and cross-institutional partnerships. They incorporate strategies, tools and/or efforts from the six modules outlined in the framework.

Campus Growing Our Own plans and strategies vary, but include efforts intended to:

1. Provide UC, CSU, California Community College (CCC) students from first-generation, low-income, and/or underrepresented backgrounds, and others, with research opportunities across all disciplines, so they can develop advanced skills and motivation to push boundaries, potentially driving new knowledge and industries.
2. Support students who enter graduate pathway preparation programs.
3. Provide adequate financial support packages for all entering Ph.D. students, ensuring accessible pathways for underserved students and those from diverse backgrounds.
4. Provide programmatic and mentoring support to ensure these students thrive in completing their advanced degree and career pathways.

Intersegmental and Systemwide Initiatives that Support Growing Our Own

Campus plans include intersegmental and systemwide initiatives. In addition to intersegmental efforts, such as the UC-HSI Doctoral Diversity Initiative, a systemwide effort that aims to enhance faculty diversity and pathways to the professoriate for underrepresented students from California HSIs, campus plans include existing or new intersegmental partnerships, and inter-institutional collaborations that support student pathways within and between institutions of higher education. These efforts are leverage-able in support of the Growing Our Own Graduate Enrollment initiative, including expansion to additional CCC and CSU institutional partners serving disproportionately large numbers of students from first-generation, low-income, and/or underrepresented backgrounds. One such example is the Cal-Bridge program, which promotes graduate study in astronomy, physics, and planetary science for CCC and CSU students.

Other examples of existing/proposed intersegmental efforts include UC Merced’s partnership with Merced College and Bakersfield College to provide internship opportunities where graduate students are employed to teach community college courses while receiving mentorship from CCC faculty. There is also an expansion of the California Community College Internship Program (CCCIP) led by UC Irvine, which offers internships for UC students to teach and to learn about faculty life, governance, and teaching in a community college environment. There is significant interest from CCC and UC campuses to expand this effort and prioritize outreach and eligibility of students from or serving underserved communities (economically/educationally disadvantaged and other underrepresented groups) to participate. As part of Growing Our Own Graduate Enrollment planning, UC Irvine is collaborating with UC Riverside to expand current efforts, and to build on that, UC is dedicating one-time funding to expand this program across multiple UCs and CCCs as a temporary pilot in support of the Growing Our Own Graduate Enrollment initiative.

UC is also allocating one-time funding to develop online Introduction to Research/Research Exposure courses that will target California undergraduates at UC, CCC, and CSU. The goal of each course will be to make research interesting, relevant, and accessible to students and to inspire their interest in graduate research, a building block for a pathway to the professoriate.

One-time Student Academic Preparation and Educational Partnerships (SAPEP) funding is also being used to temporarily expand University of California Leadership Excellence through Advanced Degrees (UC LEADS), a promising program that prepares underrepresented UC undergraduate STEM students for UC doctoral education opportunities. Since its inception in 2000, 1,107 scholars have participated in UC LEADS. While small due to limited funding, UC LEADS has yielded significant outcomes, including 99 percent of UC LEADS scholars receiving a bachelor’s degree, 76 percent pursue graduate school or have already earned degrees in a master’s or doctoral program, and 47 percent attending a UC graduate school.

A GENERATIONAL OPPORTUNITY

UC has a generational opportunity to advance educational equity through its 2030 framework. The University’s intention is to integrate the Growing our Own Graduate Enrollment initiative within that UC 2030 framework, demonstrating how the University seeks to ensure its graduate students better reflect the state’s diversity.

UC 2030 goals to eliminate equity gaps in four-year freshman and two-year transfer graduation rates for underrepresented, first-generation, and Pell students will increase opportunities for these UC students to go onto graduate school. Faculty growth will increase opportunities for UC academic doctoral students to continue onto the professoriate.

While campuses have set initial Growing our Own Graduate Enrollment goals based on leveraging existing resources, additional funding will be needed to achieve or exceed these goals. For example, this item highlights a number of intersegmental efforts and partnerships which are being supported with one-time funds—if proven effective, full-time funding may be needed to

scale up this work. In addition, the University may need future funding to support yield activities. The 2021 UC Graduate Student Experience Survey results found the top concern for UC academic doctoral students as financial support. In response, UC campuses are seeking to guarantee every Ph.D. student a minimum of five years of support upon admission to a Ph.D. program. Guaranteed multi-year financial aid funding will be critical to yield students from these priority institutions.

UCOP will support campus efforts to achieve Grow our Own Graduate Enrollment goals, through advocacy efforts for graduate enrollment funding and UC 2030 support, opportunities for campuses to share best practices and challenges, and an assessment of future resource needs to achieve these critical goals.

CONCLUSION

UC has a generational opportunity to advance educational equity across the educational pathway, including the pathway for future researchers and the professoriate. The Growing our Own Graduate Enrollment initiative seeks to increase the proportion of UC Ph.Ds. that come from institutions with greater diversity by almost 15 points, from 27 to 41 percent. UC plans to integrate this goal within the UC 2030 framework.

By achieving this goal, UC can create a faculty availability pool that serves UC, the California State University, and the California Community Colleges, and future researchers that better reflect and understand that state's diversity.

KEY TO ACRONYMS

APM	Academic Personnel Manual
CCC	California Community Colleges
COVC	UC Council of Vice Chancellors
CSU	California State University
HBCU	Historically Black Colleges and Universities
HSI	Hispanic Serving Institution
SAPEP	Student Academic Preparation and Educational Partnerships
TCU	Tribal Colleges and Universities