

Office of the President

TO MEMBERS OF THE COMMITTEE ON EDUCATIONAL POLICY:

DISCUSSION ITEM

For Meeting of September 15, 2011

FUNDING UNIVERSITY OF CALIFORNIA GRADUATE ACADEMIC STUDENTS

EXECUTIVE SUMMARY

There has been longstanding concern about the University's ability to provide competitive offers of financial support to academic doctoral students, who are critical to the University's mission of instruction, research, and public service. Particular concerns were raised at the July Regents meeting about the potential impact of tuition increases on the University's competitiveness, faculty research grants, and students whose support may not increase to fully offset the higher tuition rates. This item presents information in response to these concerns. In addition, the Academic Senate is forming a group to study further the larger issues associated with graduate education, and the administration and Senate will report jointly on this work next year.

- *UC Competitiveness.* Surveys suggest that UC's offers of financial support to prospective academic doctoral students lag those offered by its top competitors. The consequences of this are unclear: the percentage of academic doctoral students who accept admission to UC has remained relatively stable over time, and UC continues to enroll a disproportionate share of students with prestigious outside fellowships.
- *Sources of Graduate Student Support.* Graduate student support comes in a variety of forms and from a range of sources. The most common types are fellowships and university employment as teaching assistants and research assistants. Fellowships may cover tuition and fees directly; most teaching assistant and research assistant positions include tuition and fee remission as part of a student's compensation package.
- *Impact of Tuition Increases.* Tuition revenue helps maintain the quality of the University's academic programs, which is a major factor in attracting the most talented students and researchers to UC. On average, across all graduate academic students, 83 percent of a tuition increase is covered by fellowships, teaching assistantships, and research assistantships; the remaining 17 percent is covered by students without such awards. The increase in UC fellowship and teaching assistantship expenditures can be funded by the University's practice of setting aside 50 percent of new graduate academic tuition revenue for student aid. The higher cost of supporting research assistants is typically passed along to faculty research grants – which can result either in increased

funding from external sources or reduced funds available for other research expenses, depending on the grant.

The new funding streams initiative will provide considerable flexibility to campuses to use tuition revenue to maintain their competitiveness. Campuses can improve the value of their awards and/or offset the impact of tuition increases on department budgets, research grant budgets, or unsupported students by directing tuition revenue or other funds to the those departments, grants or students. Doing so would require trade-offs between graduate student support and other funding needs that will vary from campus to campus.

BACKGROUND

The University of California's 50,000 graduate students all play a central role in the University's ability to meet its three-part mission of research, instruction, and public service under the California Master Plan for Higher Education.

- As students, they gain deep knowledge of a scholarly discipline and contribute ideas and vitality to the intellectual and cultural life of the University.
- As research assistants, they assist faculty members to carry out research that expands the domain of human knowledge.
- As teaching assistants, they enhance the instructional experience of UC undergraduate students and gain training to enter the workforce as future teachers.
- As alumni, they go on to make important contributions to the California economy and to help the State meet its professional workforce needs for jobs requiring advanced training.

The Regents' policy on financial aid explicitly acknowledges the role of student financial support in enabling the University to recruit the best graduate students. This role differs from the primary role of financial support at the undergraduate level, which is related not to the University's competitiveness but to its ability to remain financially accessible to students of all income levels.

The competitiveness of graduate student support for UC academic graduate students and its impact on the ability of the University to enroll top students from around the world has been a longstanding concern at the University. Several administrative and faculty groups and committees have taken up the issue over time and concluded that both the size and composition of UC's awards for academic graduate students are not fully comparable to the best offers UC students receive from competitor institutions.

Recently, the longstanding concern about the competitiveness of UC's awards has been joined by concerns about the impact of tuition increases that were instituted in response to declining State support for the University's budget. At the July 2011 meeting, the Regents heard specific concerns about the impact of tuition increases on students and on faculty research grants, which

cover tuition for a large share of graduate academic students, as well as the impact of non-resident tuition on graduate recruitment.

This briefing presents the most recent information available about the competitiveness of the University's graduate student support and the impact of tuition increases. The briefing focuses on academic doctoral students, for two reasons:

- Academic doctoral students comprise 85 percent of the University's graduate academic students; they are central to the University's research mission as well as to UC's unique responsibility for workforce training.
- The University's financial support goals, strategies, funding model, and competitive environment for academic doctoral students differ markedly from those for other graduate students – e.g., students in professional degree programs or self-supporting programs (such as Executive MBA programs).

The briefing also describes the trade-offs that campuses can – and do – make between the net revenue generated by tuition increases and the challenges that they create.

Adequacy of Graduate Student Support at UC

For students in academic doctoral programs, the University's primary goal is to provide financial support that is competitive with that provided by other institutions. It is common practice for institutions to cover tuition *and* provide a net stipend for living expenses.

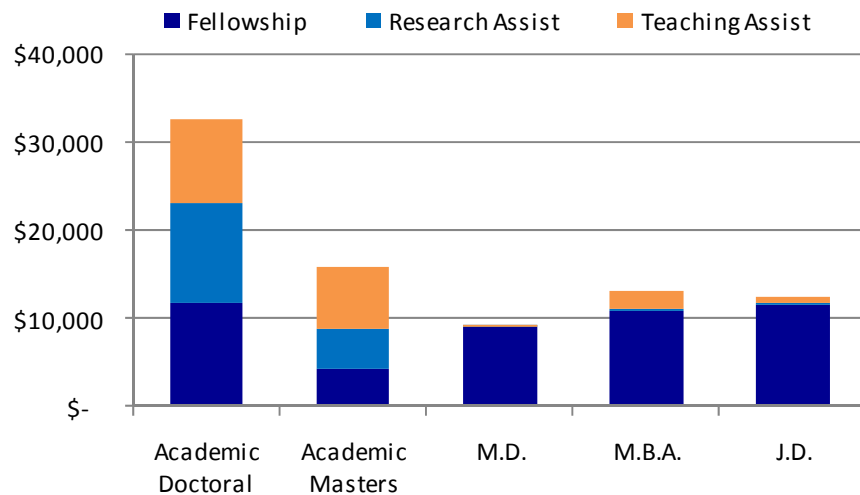
Competitive support comes in three basic forms:

- *Fellowships* are scholarships that help students cover tuition, fees, and living expenses. Most fellowships are funded from University sources (e.g., from UC's 50 percent set-aside of systemwide graduate academic tuition revenue, gifts and endowments, or other campus resources), but UC students also receive fellowships from outside agencies (e.g., the National Science Foundation). Fellowships are usually awarded competitively.
- *Teaching Assistantships* (TAs) allow students to gain experience as instructors as they pursue their studies. Under the University's systemwide labor contract, assistants are paid according to the University's salary scale; in addition, the University is obligated to provide tuition and fee remission for TAs with appointments of 25 percent or more. Funding for TAs comes primarily from University sources.
- *Research Assistantships* (RAs) allow students to engage in research projects under faculty supervision related to the student's academic and technical skill development and dissertation work. RAs are also paid according to the University's salary scale and normally receive funds to cover tuition and fees. Funding for RAs comes from external research grant sponsors (including federal agencies such as the National Institutes of Health, the National Science Foundation, and the Department of Energy, as well as private foundations) and research grants using UC funds.

Some academic doctoral students lack sufficient competitive support to cover their tuition, fees, and living expenses and hence turn to other resources – notably loans, although students may also use personal savings or take part-time jobs other than teaching or research assistantships. Students may also receive support from outside agencies (i.e., foreign governments) that is not captured in UC’s student information system.

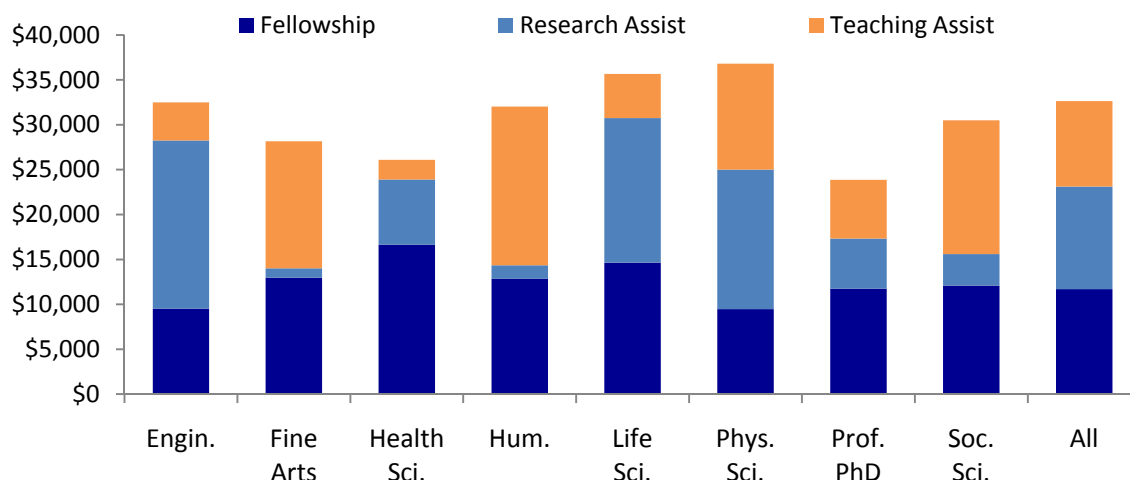
Market forces within the United States and internationally drive the amount and type of support that graduate students receive, and these can vary considerably among programs. Display 1 compares the amount and mix of competitive support received by academic doctoral students in 2010-11 with the support received by academic masters students and students in professional degree programs.

DISPLAY 1: Average Support per UC Graduate Student by Type, 2010-11



Even among doctoral students, the amount and type of support vary significantly by discipline. For example, externally sponsored research assistantships are readily available to support students in many of the STEM fields – Science, Technology, Engineering, and Mathematics. These external sources are rare in the humanities, social sciences, and fine arts, which depend more on fellowships and teaching assistantships, and generally have less total funding available to support graduate students.

Display 2: Average Support per Academic Doctoral Student by Discipline, 2010-11



Display 2 provides a snapshot of the average competitive support received by academic doctoral students in different disciplines in 2010-11. (The category “Professional Ph.D.” reflects students pursuing a doctoral degree in a professional discipline – e.g., education.) Most students receive different kinds of support over the course of several years as they finish their degrees.

A desirable strategy is to provide doctoral students with a fellowship in their first year, a teaching assistantship their second and third years, then research assistantships or fellowships subsequently. Students who take longer (as many in the humanities and social sciences do) may receive additional teaching assistantships or, in some cases, may need to find other employment or resources to support themselves.

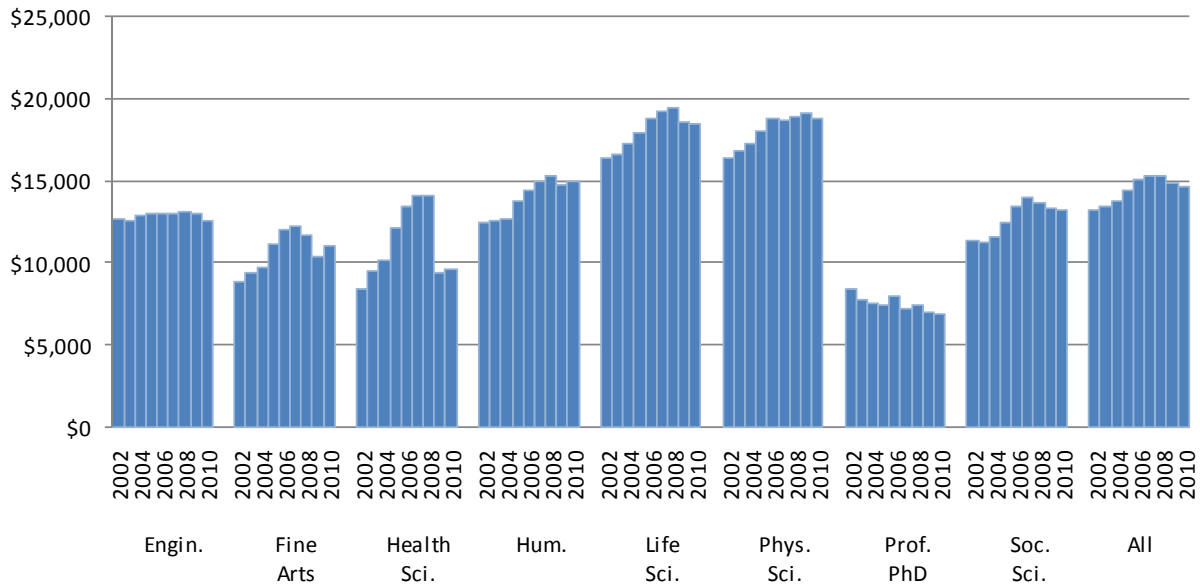
Measuring the Adequacy of Graduate Student Support: Net Stipend

To attract the most talented academic doctoral students, institutions must fully cover students’ tuition *and* provide a stipend for living expenses. This *net stipend* – the support given to the student after tuition is paid – is the basis for both depicting trends in graduate student support and for comparing the University’s offers to those of peer institutions in recruiting graduate students.

Display 3 depicts trends in the net stipend received by UC academic doctoral students since 2002. Two conclusions are evident:

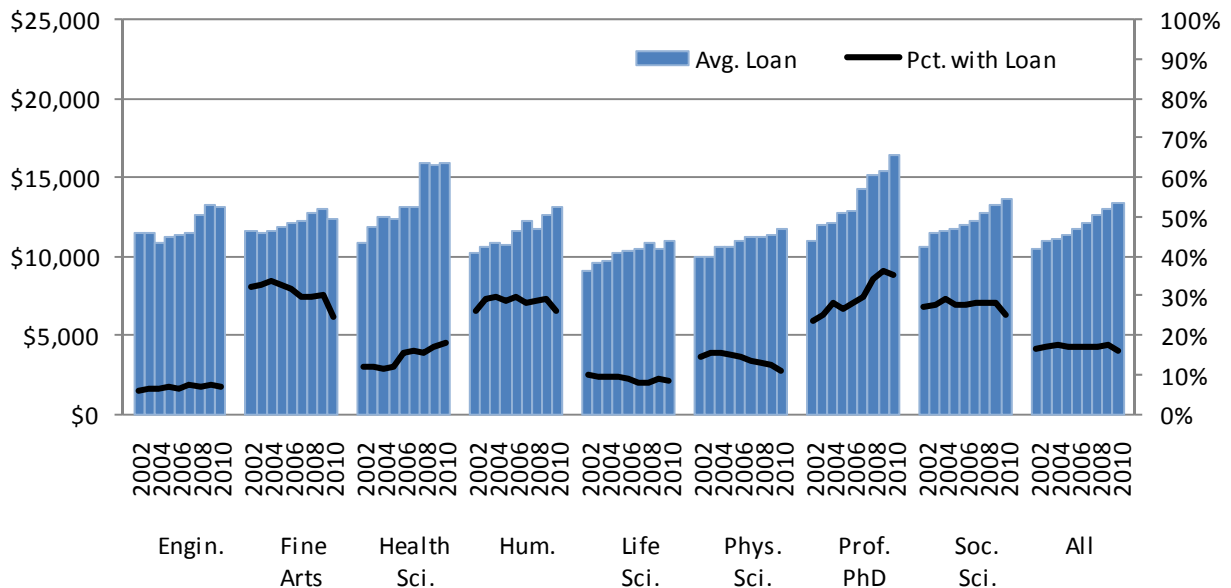
- The average net stipend varies by discipline. Students in STEM disciplines, for example, are relatively well supported compared to other students, consistent with the competitive marketplace and the larger amount of external funding available for these students.
- In nearly every discipline, the average net stipend has decreased in recent years following years of steady growth. (Figures are not adjusted for inflation.)

Display 3: Average Net Stipend for Academic Doctoral Students Over Time



Overall, fewer than 20 percent of academic doctoral students borrow in any given year, as shown in Display 4. Borrowing levels are highest for students in disciplines that receive less support and among students who are taking a longer time to graduate and, hence, may have exhausted their other sources of support.

Display 4: Trend in Academic Doctoral Student Borrowing Over Time

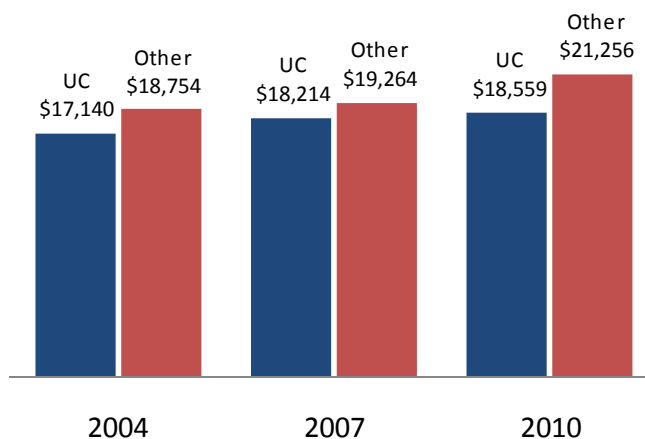


How Competitive is UC for Academic Doctoral Students?

At the systemwide level, UC assesses its overall competitiveness for academic doctoral students in several ways: by comparing offers made by UC with those made by competing institutions; by monitoring UC's success at enrolling the students that it admits; and by monitoring the number of prestigious outside fellowships awarded to UC graduate students.

Every three years, UC surveys all students admitted to its doctoral programs and asks them to compare the offer they received from UC with the offer they received from their top-choice, non-UC school. Survey results indicate that the net stipends offered by UC are generally lower than those offered by UC's top competitors, as shown in Display 5. Between 2004 and 2010, UC's average net stipend offer increased by eight percent, while offers from UC's top competitors increased by 13 percent.¹

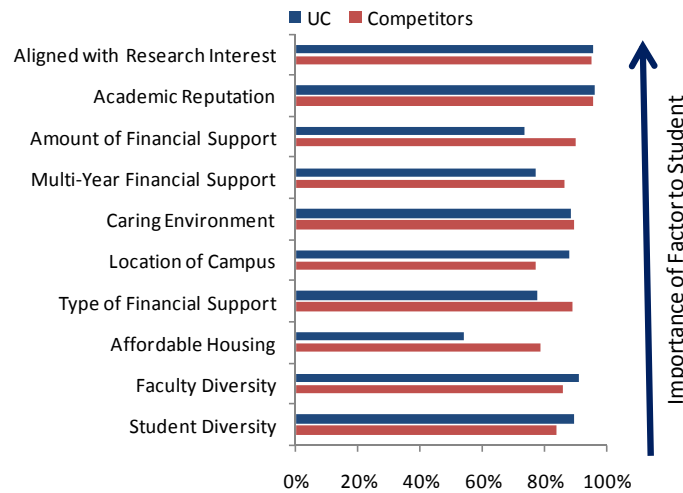
Display 5: Average First-Year Net Stipend Offers from UC and Competing Institutions



The survey also asks students to indicate the factors most important to them and to rate schools on each factor. As shown in Display 6, UC was rated less favorably than its competitors on factors related to financial support: the amount and type they were offered, whether the offer was for multiple years, and the availability of affordable housing in the area. UC was rated somewhat more favorably than its competitors on location and diversity. UC scored roughly the same as its competitors on the two factors most important to students: alignment of the program with students' research interests and the academic quality of the program.

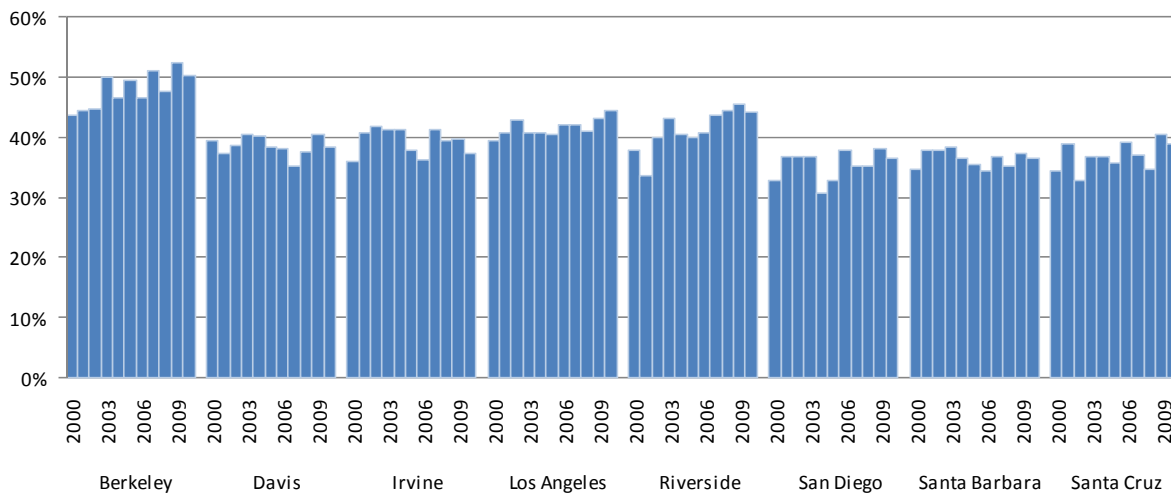
¹ The average net stipends in Display 5 reflect offers to first-year students receiving offers from both UC and a non-UC school. They are not directly comparable to those in Display 3, which reflect average net stipends received by all enrolled students in UC academic doctoral programs.

Display 6: Percent of Students Rating UC and Top Competitors “Average” or “Above Average” (Fall 2010 Admission Cycle)



A second indicator of UC’s overall competitiveness is “yield,” the percentage of students offered admission who enroll. As shown in Display 7 there has been little overall change in yield at any UC campus. Yield fluctuates from year to year, but there is no sustained trend to suggest diminished success at enrolling students admitted to UC academic doctoral programs.

Display 7: Academic Doctoral Student Yield, 2000 to 2010*



* Excludes figures for Merced (due to the low number of students) and San Francisco (due to incomplete data).

A third indicator of UC’s overall attractiveness is its ability to attract students with portable national fellowships. Although UC enrolls seven percent of the graduate students in the nation, UC attracted 20-30 percent of the prestigious fellowship students in science, arts and humanities in 2009, and 15-30 percent of these fellowship students in 2010. This metric says little about UC’s financial support as a means of recruiting students, but it does suggest that UC remains an attractive place for young scholars to study and carry out research.

The Impact of Tuition Increases on Graduate Education at UC

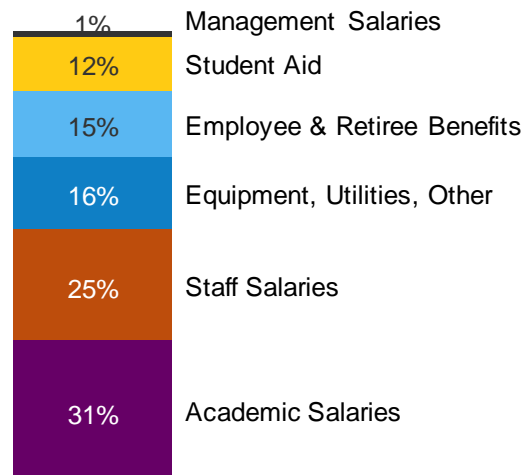
Broadly speaking, tuition increases affect graduate education in two ways:

- They provide additional revenue to help the University maintain quality and meet its funding needs.
- They increase the burden on external fund sources that cover tuition, and may increase the burden on internal sources depending on how the increased tuition is used.

Tuition Increases as a Source of Revenue

Tuition revenue represents the largest share of UC core funds, which the University relies upon to cover operational expenses such as faculty and staff salaries, equipment and utilities, employee and retiree benefits, student aid, and other costs. Display 8, below, shows how UC Core funds were used to cover these and other expenses in 2009-10, the most recent year for which data are available. (Core funds also include State and UC General Funds.)

Display 8: Expenditures from UC Core Funds, 2009-10



The revenue generated by tuition accrues to the University and is distributed by campuses. Thus, campuses have more funds to use as tuitions levels rise. The current UC policy is to return 50 percent of these funds to aid – making it possible to fund UC fellowships, for example – but the rest can be used at the discretion of the campus, depending on its strategic goals.

Tuition Increases as a Cost to be Covered

In addition to generating revenue, tuition increases can also create challenges for students, faculty researchers, and university administrators.

For graduate academic students, the impact depends largely on the nature of graduate student support that they receive.² Roughly speaking, the 83 percent of students who receive internal or external support have their tuition covered by someone else and are not affected by increases in tuition. Specifically:

- 31 percent of tuition revenue comes from students with teaching assistantships that provide full tuition coverage; consequently, these students are not affected by tuition increases. Funding to cover these increases is provided by the 50 percent of new graduate academic fee revenue that is set aside for student financial support.
- 19 percent of tuition revenue comes from students with UC fellowships that cover tuition. The 50 percent of new graduate academic tuition revenue set aside for student financial support is sufficient to fully cover the tuition increase for these students as well.
- 26 percent of tuition revenue comes from students with research assistantships that provide full tuition coverage. These students are not affected by a tuition increase except to the extent that fewer assistantships are available owing to tuition pressure on the grants. (See “Options for Mitigating the Impact of Tuition Increases,” below.)
- Eight percent of tuition revenue comes from students with federal or private fellowships that cover some or all of the student’s tuition. In past years, tuition increases have generally resulted in higher expenditures by these sources. However, UC’s tuition has reached a level where some fellowships will not automatically increase to cover further increases. For students in this category, tuition increases will result in higher out-of-pocket costs unless the campus finds another fund source to cover the tuition increase. (Note that some students are funded by employers who will continue to cover higher tuition levels.)
- 17 percent of tuition revenue comes from students who lack fellowships or assistantships that cover tuition. Tuition increases generally result in higher out-of-pocket costs for these students.

The percentages above reflect the graduate academic student population as a whole. The actual impact of a tuition increase varies by degree objective and academic discipline. Compared to students in masters programs, for example, academic doctoral students are more likely to have research assistantships, teaching assistantships, and fellowships, and are hence less likely to pay any tuition increase out-of-pocket. Even among doctoral students, however, patterns and amounts of support vary by discipline (as shown earlier in Display 2).

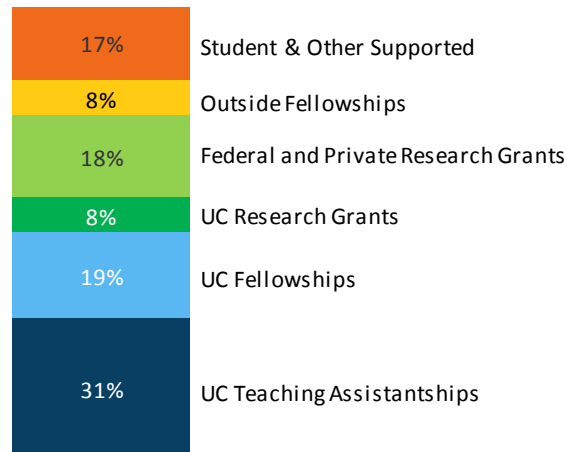
To the degree that tuition revenue is not returned to the department that supports a graduate student to offset the increased tuition cost, a tuition increase may increase pressure on department budgets and faculty research grants. For example, faculty with external research grants will face greater costs for graduate research assistants; for some grants, this may result in

² Students can fall into more than one category – e.g., a student may have tuition covered by a fellowship one term and by a teaching assistantship the next.

less money for other research expenses or to hire additional students. Nevertheless, net revenue from a tuition increase enables campuses to meet other unmet needs, such as faculty salaries, libraries, capital expenses, research infrastructure, and student services, which can directly benefit both students and faculty.

Display 9, below, summarizes how the cost of covering tuition is funded by each of the sources described above for graduate academic students (doctoral as well as masters students).

Display 9: Funding Sources for Graduate Students, 2009-10



Options for Mitigating the Impact of Tuition Increases

As noted above, UC currently returns 50 percent of new tuition revenue to graduate student support, which is generally enough to cover the cost increases associated with UC-funded fellowship recipients and teaching assistants. Consequently, the net impact of tuition increases falls primarily on:

- Unsupported students without tuition-covering fellowships;
- Faculty research grants;
- Departmental budgets in cases where tuition increases exceed the additional graduate student support funding allocated to the department; and
- Departments that choose to cover tuition increases for students with federal and private fellowships that will not cover the increase.

Campuses, departments, and individual faculty researchers have options to mitigate the impact of tuition increases on these parties, although all have consequences. For example:

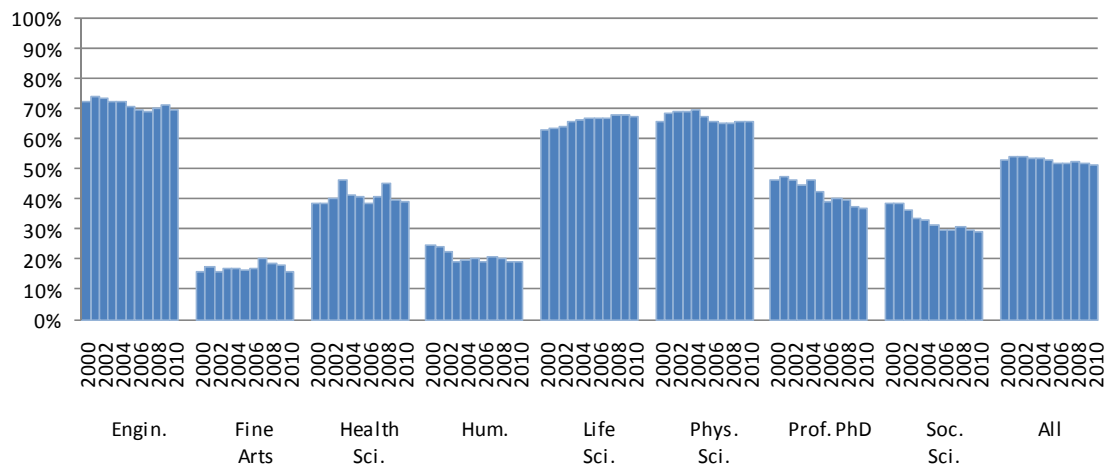
- *Faculty members can include an allowance for future tuition increases into their grant proposals.* Including such an allowance helps insulate the grant from the impact of future

tuition increases. Unexpected tuition increases, however, may exceed such an allowance. Furthermore, current trends in the federal budget indicate a decreasing amount of funding available for research grants from almost all agencies, such that faculty may not recover the costs of tuition increases by asking for larger grants.

- *Campuses can cover some or all of the higher cost of research assistants themselves.* In instances where faculty members cannot pass along the full cost of a tuition increase to a research grant (e.g., due to limits set by the funding agency on the amount of compensation that research assistants can receive), campuses can cover the remaining cost by spending more than the required 50 percent of new tuition revenue on graduate student support. Campus administration would return most of the net revenue generated by tuition increases on grants to the faculty to offset the costs.
- *Faculty members can hire postdoctoral scholars instead of graduate students.* To date, there is no clear evidence that tuition increases have led faculty members to make this shift. However, to the extent that tuition increases make it less viable to hire graduate students as research assistants, faculty members could decide to hire postdoctoral scholars instead. (Postdoctoral scholars are typically recent Ph.D. recipients, either from UC or other institutions.)

Display 10 below shows that overall, there has been a slight decline in the percentage of doctoral students with research assistantships; the trend varies by discipline. It is not clear that the trend is related to UC tuition and fees, which grew by \$6,693 during this period, from \$3,609 in 2000-01 to \$10,302 in 2010-11.

Display 10: Graduate Academic Doctoral Students with GSR Appointments



- *Campuses can provide additional fellowship assistance.* Campuses can spend more than the required 50 percent of the new tuition revenue on student financial support. In essence, each campus can make its own decision about prioritizing those needs that are funded by tuition increases (e.g., faculty salaries) and the needs of the parties that ultimately pay them (e.g., research grants or students without full fellowship support).

- *Campuses can prioritize some students over others.* Campuses can shift support to those students who are more central to its research mission (e.g., academic doctoral students) than other students (e.g., academic masters students). Alternatively, campuses can shift support to students who currently lack tuition fellowships by reducing stipends of students already receiving full tuition coverage (thereby reducing the competitiveness of those stipends).
- *Departments can support fewer students.* Absent adequate funding, campuses and departments can adopt more modest graduate enrollment plans in order to provide more generous student financial support packages to the students that they do enroll.

Each approach has its own challenges, and different campuses, departments, and faculty members may choose to make different trade-offs. In contrast, forgoing a systemwide tuition increase effectively elevates graduate student support above the competing needs that would otherwise be met from the resulting net fee revenue.

Non-Resident Students and Tuition

UC pays the educational and living costs for the vast majority of its academic doctoral students, and competes directly with peer institutions to recruit the best and brightest to its programs.

The competition for graduate students is global. Fully 24 percent of the UC graduate population comes from outside the US. In some disciplines, a majority of the students are foreign born, including a number of fields in engineering and the physical sciences considered to be of strategic importance for California's workforce.

As is common practice for public universities, UC charges a higher tuition rate for non-residents than it does for California residents. Although UC tuition and fees for non-residents are lower than those of most of its public and private competitors, it is often perceived that UC's non-resident tuition makes it more difficult for faculty to compete globally for the students of their choice. There has been considerable pressure from the faculty to lower or eliminate non-resident tuition or to mitigate its impact through policies such as the elimination of non-resident tuition after advancement to candidacy. Funding difficulties at the department level can be mitigated or eliminated depending on the level of support provided for graduate students in that department; however, such support comes at the expense of funding for other critical campus needs.

Non-resident graduate academic students are subject to Non-Resident Supplemental Tuition (NRST) of \$15,102 in addition to the tuition and fees charged to California residents.

- *Domestic non-resident students* typically qualify for California residency after their first year. Hence, the extra cost of covering NRST (in addition to covering other charges and providing a competitive net stipend) applies only to their first year.
- *International students* pose a greater challenge because they cannot establish residency. Under current UC policy, these students are subject to NRST until they advance to candidacy (i.e., complete all requirements for the doctoral degree except the dissertation),

which generally takes about three years. Until they advance to candidacy, they, too, require substantially more support than a California resident. (Once they advance to candidacy, they are exempt from NRST for up to three years.)

Because of these higher costs, the net stipends received by non-resident students are generally lower than those received by California resident students within the same discipline. In addition, a survey of academic doctoral students admitted for Fall 2010 found that UC's competitive gap for international students was large (\$5,224) compared to the gap for domestic non-resident students (\$2,664) and California residents (\$267).

UC has taken steps to help address these concerns, including freezing NRST at 2004-05 levels; reducing the percentage of NRST assessed to students who have advanced to candidacy from 25 percent to 0 percent; and increasing its annual budget for student support by \$10 million (in addition to funds generated from return-to-aid) in 2007-08.

UC has also considered faculty proposals to reduce or eliminate graduate academic non-resident tuition. Such proposals would provide relief to internal fund sources that currently cover NRST, but they would also reduce revenue from external sources (e.g., research grants) that contribute to the University's operating budget.

This briefing is not meant to advocate for or against the current policies on non-resident tuition, but it can put some perspective on UC's approach to recruitment to inform an in-depth policy discussion in the future.

- Differential tuition by residency is unique to public institutions. Private universities such as Stanford, the Ivy League, MIT and Caltech have only a single tuition rate comparable to UC's non-resident tuition. Thus, in competing with our private peers, it is UC's lower *resident* tuition that is anomalous.
- All universities offset the costs of graduate tuition in some manner to be competitive in the global marketplace. Many private institutions return some fraction of the graduate tuition revenue to departments to offset their high costs or use the additional revenue to offer a disproportionate number of fellowships to recruit top students. UC could enact similar policies if it chooses to retain its differential graduate tuition and use the revenue to obviate residency as a recruiting factor.
- UC continues to attract non-resident students who bring outside sources of support. Reducing tuition for these students would reduce revenue for graduate education, the bulk of which pays UC faculty and staff salaries and benefits, without reducing any burden on the campuses. Indeed, the revenue loss would increase the burden on the University overall.

An involved discussion around the non-resident tuition levels will have to weigh these factors with data on the practices of our peer institutions along with the political considerations surrounding UC's treatment of residents and non-residents. Such a discussion would be a fruitful topic for a future Regents' meeting.

Next Steps for Graduate Tuition Increases

The enormous shortfall in State support of the University's budget has required the University to make difficult and painful choices. Tuition increases have been used as a last resort to preserve the quality of a UC education. To date, the University has adopted a strategy of across-the-board tuition increases for all students – coupled with significant campus flexibility to offset the increases for students and/or faculty researchers – to address this issue. The new funding streams model further emphasizes campus flexibility in funding decisions.

In anticipation of a possible action in November, the Regents may want to discuss whether or not to increase graduate student tuition for 2012-13. If tuition is not increased, should budget shortfalls in graduate student support be met by reducing funding of other campus programs? And should undergraduate tuition be raised to a higher level than graduate student tuition?

There are a number of other issues regarding graduate student tuition, including whether or not non-resident graduate tuition should be higher than that of resident graduate students. As requested by the Regents' Chair and the Chair of the Finance Committee, the administration and the faculty are committed to explore this topic in great detail in the coming months and will bring back the results of their deliberations for further discussion by the Regents in Spring 2012.