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BACK TO THE FUTURE:
Freshman Admissions at the University of California, 1994 to the Present and Beyond

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ABSTRACT
The past five years have seen unprecedented changes in freshman admissions at the University of California, reflecting steep cuts in state funding that UC sustained during that period as well as changes in UC's definition of who is eligible to enter the university. The number of California applicants who were *not* admitted to the UC system more than doubled between 2010 and 2012, although part of that increase also reflected a change in admissions policies and procedures. The number of "no shows" – applicants who were admitted but did not attend – increased sharply and for the first time exceeded the number of admits who enrolled at UC. Most troubling, UC's "participation rate" – the percentage of California high school graduates who entered UC as freshmen, a key indicator of college access – fell to its lowest level in three decades. It appears the university may be nearing a pivotal moment in its "social contract" with the people and State of California. The present study is based on a sample of 1,144,047 California high school graduates who applied for freshman admission at UC between 1994 and 2011; the sample data are augmented, wherever possible, with published data for the 2012 admissions cycle as well. The study traces the impact of both internal and external factors on UC admissions, including the introduction of multiple filing, changes in university policies on eligibility and admissions, and the long-term decline in state funding for UC that accelerated precipitously with the 2009 recession. The paper concludes with policy commentary and proposals. The funding model that has driven UC's growth since the advent of the 1960 Master Plan for Higher Education is broken, and a new model is needed if the university is to renew its social contract with California. In seeking a new funding model, however, the traditional Master Plan construct of *eligibility* for admission to UC remains as relevant today as it was in 1960 as a foundation upon which to rebuild.

Keywords: University Admissions, University Systems, California Higher Education

INTRODUCTION
To those who follow such matters, the University of California's admissions numbers have begun to look distinctly odd if not alarming in the five years since the onset of the 2009 recession, when UC sustained deep and repeated cuts in state funding. UC's official statistics show that the number of California applicants who were *not* admitted anywhere in the UC system rose from about 13,000 to over 31,000 between 2010 and 2012, although about half of the increase was the result of a change in admissions procedures at one campus. Another concern is the growing volume of "no shows" – applicants who are admitted at UC but attend other colleges and universities – whose number swelled to a record 37,000 students in 2010. For the first time, more students declined UC's offer of admission than accepted, in many cases because they were unable to get into their first-choice campus.

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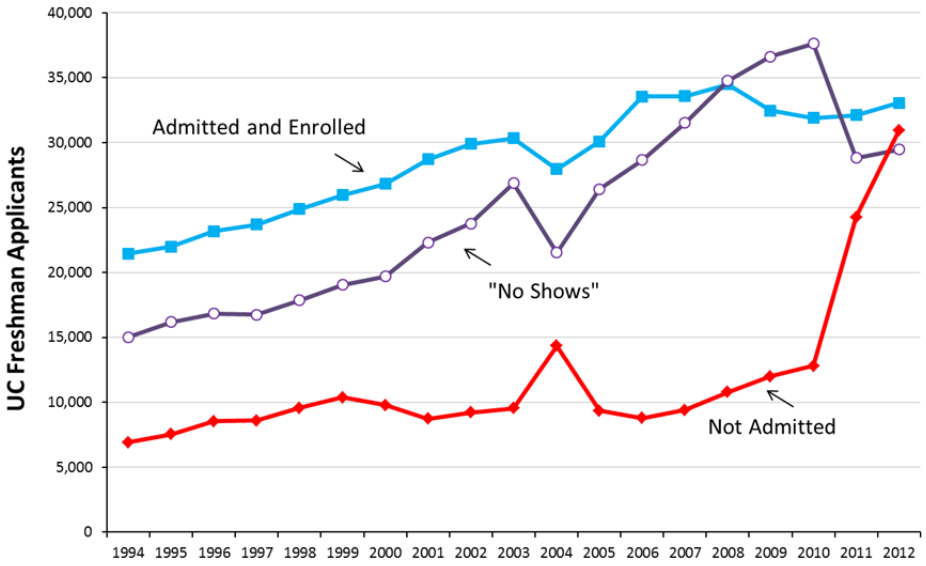
Figure 1
Recent Trends in UC Admissions



Source: UC annual applicant-flow reports for California resident freshman applicants, 1989 to 2012 (UCOP, 2012).

Most troubling of all is the decline in the university's "participation rate" – the percentage of California high school graduates who enroll at UC – which has fallen to its lowest mark in three decades. In 2012, only 7.3 percent of the state's graduating high school seniors entered UC as freshmen, the smallest percentage since 1982. It appears that the university may be nearing a crossroads in its relationship with the people and State of California.

That sense that a pivotal moment is near is a reflection of the broader role that undergraduate admissions has played historically in UC's "social contract" with California under the state's 1960 Master Plan for Higher Education (Douglass, 2007). For all of the university's other contributions to the state in the areas of research, public service, and graduate education, undergraduate admissions has long been the cornerstone of that contract and, for better or worse, the focus of most public attention. Under the terms of the contract, the university guarantees a place for the top eighth of California high school graduates, in return for which the state provides the revenues needed for the university to grow. The contract has been carried out through a number of interlocking budget practices, agreements, and funding formulae. The California Postsecondary Education Commission (CPEC) conducted periodic eligibility studies to ensure that UC was enrolling students from within the requisite 12.5% pool of high school graduates. Based on enrollments, the student/faculty ratio determined the number of budgeted faculty positions for which the state would provide funding. The faculty salary survey pegged compensation of UC faculty to those at other comparable research universities. The marginal cost-of-instruction formula established an overall level of funding that the state would provide for each additional student. Together, these arrangements helped drive the ascent of the University of California after 1960 to become the premier public research university in the world. In one form or another, enrollment or workload based budgeting for UC goes back to 1911, providing a decisive motivation for UC to grow in the number of campuses, in programs, and in enrollment capacity with California's population.

But if the contract worked well for first four decades of the Master Plan, it has been all but dissolved during the last decade and since the 2009 recession, in particular. State funding for UC has declined by 30 percent, and the agreed-upon practices and formulae that helped restore UC following earlier recessions have been eroded or discarded. CPEC is no more, the victim of a line-item veto. The budgeted student/faculty ratio is in free fall. Faculty salaries are lagging, and the cost-of-instruction formula is being reconsidered and probably diluted. All of the links in the enrollment-driven engine that powered the university's ascent are broken, perhaps never to be repaired. There is now serious discussion within the university whether the traditional notion of the UC system still makes sense, and each campus should instead set its own path for survival and growth.

Recent trends in UC admissions must be viewed within this broader context. The debate over the future of undergraduate admissions is also a debate over the future shape of the university.

The present study examines key trends in UC admissions over the last two decades. The study is based on a sample of 1,144,047 California high school graduates who applied for admission as freshmen at the University of California between 1994 and 2011. Wherever possible in the analyses that follow, the sample data are augmented with published data for the 2012 admissions cycle as well. The student-level sample was provided to the author by UC's Office of the President, with due concern for student confidentiality, and allows anonymous tracking of applications, admissions, enrollments, and eventual graduation rates for all students in the sample. The analysis focuses primarily on California residents and on freshman rather than transfer admissions. Historically, freshmen have accounted for about 70 percent of all new UC undergraduate enrollments, and freshman admissions remain the primary vehicle through which the university has striven to meet its obligation under the Master Plan to provide a place for all eligible Californians.

The analysis begins with a description of the infrastructure of UC's admissions system and traces the remarkable changes that have occurred since 1994 in patterns of applicant flow. Subsequent sections examine the rise and recent fall of referral admissions, the growing volume of "no shows," and changes over time in eligibility and participation rates among California high school graduates. The concluding sections offer a broader policy commentary on the traditional Master Plan construct of *eligibility* for admission and its continuing relevance not only for undergraduate admissions but for the future of the UC system.

UC ADMISSIONS AS A SYSTEM

More than the sum of its parts, UC admissions is a complex system in which decisions at one campus can affect other campuses in sometimes unexpected ways. The foundation of the system is the concept of "eligibility" for admission, a policy construct that is unique to California and derives originally from the Master Plan's mandate that the top eighth of the state's public high school graduates qualify for admission to UC. The primary criterion for judging eligibility is students' grades in college-preparatory coursework together with their standardized test scores, although other criteria have been added and subtracted over the years. Historically, eligibility criteria have been set by UC faculty, subject to approval by the Regents, and monitored by the California Postsecondary Education Commission (until its demise in 2011) to ensure that UC was drawing its freshman class from the requisite top 12.5% of high school graduates.

Yet while eligibility for the UC system was determined by statewide policy, the actual infrastructure of admissions was highly decentralized, reflecting UC's longstanding tradition of campus authority over admissions decision-making. Under that tradition, each UC campus makes local admissions decisions independently from one another. In the early days of the Master Plan, most campuses were able to admit all eligible applicants, but as the volume of applications began to increase in the early 1970s, an "admissions selection" process was introduced at those campuses that had more eligible applicants than space available. Campus selection criteria included additional academic factors as well as non-academic or "supplemental" criteria intended to broaden representation of underserved groups within the UC student body. Eligible applicants who were denied admission at oversubscribed campuses were "redirected" to other campuses that could accommodate them.

This, in general outline, was the system in place until the mid-1980s when a major change occurred in infrastructure of UC admissions: *multiple filing*. Introduced in 1986, multiple filing enabled students to submit one application to any and all UC campuses via a central application-processing system. The number of students filing multiple applications increased dramatically in the first year, and Berkeley and UCLA for the first time received many more applications from eligible students than they were able to accommodate. The volume of applications continued to accelerate throughout the 1990s and 2000s as the result of growth in the number of California high school graduates as well as another technological innovation, the on-line application. By the 2012 admissions cycle, 93,460 California high school graduates applied to UC, but those students submitted a total of 348,460 *applications*, or about 3.7 applications per student. Since the advent of multiple filing, the number of freshman applicants to UC has approximately doubled, while the number of applications has nearly trebled.

Multiple filing has placed great strains on the pre-existing infrastructure of UC undergraduate admissions and created significant workload issues for campus admissions offices. Admissions practices such as "holistic" or comprehensive review are labor-intensive and more difficult to implement when the volume of applications is large.

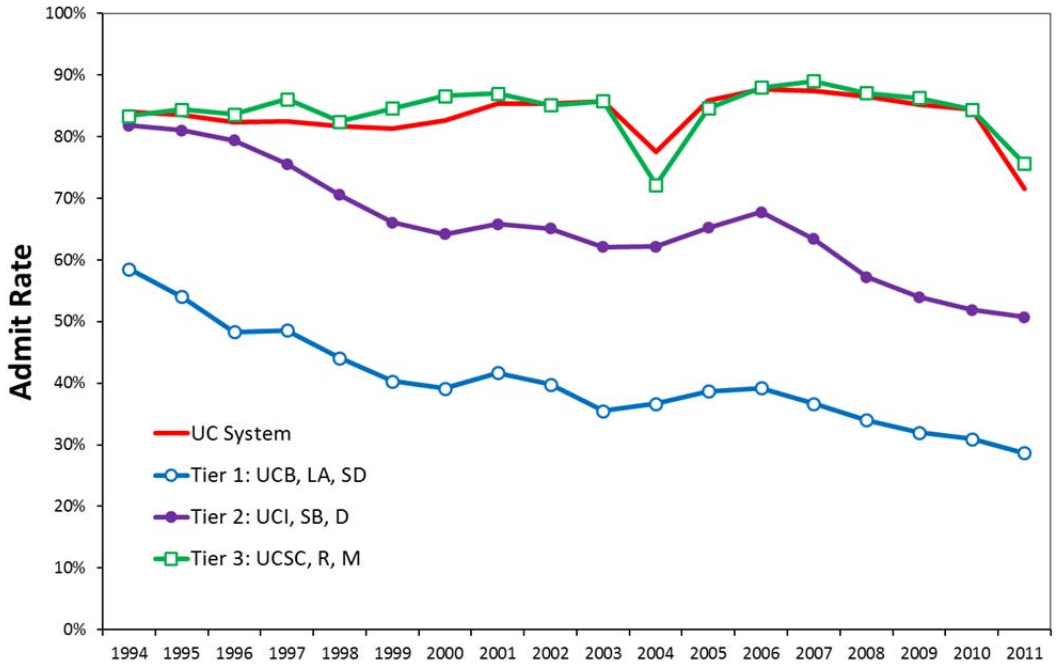
Another consequence is that campuses are increasingly making admissions decisions about the *same applicants*, usually without knowledge of the decisions of other campuses. Introduction of multiple filing within a decentralized system of decision-making has led to substantial duplication of effort and has had a number of other unanticipated effects as well. It has made projection of campus admissions "yields" more unpredictable, as different campuses admit the same students and thus unwittingly dilute each other's yield rates. It has necessitated a "referral pool" process, similar to the earlier practice of redirection but on a much larger scale, whereby students who are eligible for UC but who are not admitted at any of the campuses to which they initially apply must be put through a second admissions cycle. And it has had redistributive or "cascade effects," as admissions decisions at the most selective campuses reverberate at less selective ones.

Notwithstanding its decentralized infrastructure, UC admissions has become much more interdependent as the result of multiple filing, if in unplanned and sometimes unexpected ways.

In addition to its interdependence and complexity, the other striking feature of UC's admissions system is that it is highly stratified. Figure 2 below illustrates the sharp differences across UC campuses in admissions selectivity for California residents. [1]

Figure 2

Admissions Selectivity at UC



Source: UC Corporate Student System data for California resident freshman applicants.

UC's nine undergraduate campuses cluster into three tiers of selectivity. Tier 1 – Berkeley, Los Angeles, and San Diego – is the most selective and has continued to grow more so over time. The combined admit rate for these campuses has declined by almost half since 1994, and Tier 1 campuses now admit less than 30 percent of students who apply. Tier 2 campuses – Irvine, Santa Barbara, and Davis – are considerably less selective although they, too, have grown more so over time. The combined admit rate for Tier 2 has declined from 82 percent in 1994, when those campuses were admitting almost all eligible applicants, to about 50 percent today. Tier 3 campuses – Santa Cruz, Riverside, and Merced, which opened in 2005 – are the least selective and until recently have been *non*selective in the sense that they have admitted all eligible applicants. Statewide eligibility criteria have thus served as the *de facto* standard for admission at these campuses, a fact that has not always set well with local admissions officials. Historically, the admit rate for Tier 3 has hovered around 84 to 85 percent, although it dipped sharply in 2004 and 2010, first as the result of state-mandated enrollment cuts and later as the result of changes in the referral-pool process, as described more fully below.[2]

A TYPOLOGY OF APPLICANT FLOW

As multiple filing has increased the complexity of UC admissions, so it complicates analysis of that system. Students may apply to as many as nine undergraduate campuses, or any combination thereof, and the typical freshman applicant now applies to nearly four campuses, on average. In turn, each campus independently reviews each application, and different campuses frequently admit the same applicants. In the final stage of the process, the locus of decision-making then shifts

[1] Supporting data for Figure 2 and other graphics throughout the paper are provided in Appendix 1.

[2] It should be noted that selectivity has increased at different rates at different campuses. For example, both San Diego and Santa Barbara moved quickly from admitting almost all eligible applicants in 1994 to become "Tier 1" and "Tier 2" campuses, respectively, in terms of selectivity. The three-tier classification used here is intended to provide a broad-brush overview of the UC system and its evolution over time.

back to students who decide which, if any, admit offer to accept. This three-stage process is known as "applicant flow," and in a nine-campus system with multiple filing, the number of possible combinations and permutations is daunting.

Since the early 1980s, when UC established the Corporate Student System, its computerized database, the Office of the President has prepared annual applicant-flow reports. Those reports provide "unduplicated" counts – each applicant is counted only once – for each campus and for the university as a whole. While the reports are useful in documenting some admissions trends, the unduplicated counts fail to capture the overlapping patterns of applicant flow that increasingly characterize UC admissions today. One of the most common patterns, for example, is for students to hedge their bets and apply to both Tier 1 and Tier 2 campuses in the hope that, if they are denied at the former, the latter may provide a fallback. The referral-pool pattern is another example. These patterns cannot be understood as the sum of individual campus admissions processes nor by treating the UC system as if it were one "super" campus, but require a different analytical vocabulary.

Figure 3

A Typology of UC Applicant Flow

Type	Tier Where Applied	Highest Tier Admitted	Number	Percent
High Flyers	Tier 1 only	Tier 1	59,461	5%
Upstreamers	Tiers 1, 2 or 1, 2, 3 or 1, 3	Tier 1	301,373	26%
Downstreamers	Tiers 1, 2 or 1, 2, 3	Tier 2	260,932	23%
Mid Flyers	Tier 2 or 2, 3	Tier 2	72,437	6%
Cascaders	Tiers 1, 2, 3 or 1, 3 or 2, 3	Tier 3	234,221	20%
Low Flyers	Tier 3 only	Tier 3	25,008	2%
Admitted Subtotal			953,432	83%
Denied	Tiers 1, 2, or 3 or any combination	Not admitted at any UC campus	190,615	17%
Grand Total, 1994 to 2011			1,144,047	100%

Source: UC Corporate Student System data for California resident freshman applicants, 1994 to 2011.

This typology is not intended to be comprehensive and is deliberately simplified in order to capture broad patterns of applicant flow within the UC system. The nine campuses are collapsed into three levels of selectivity in order to focus on applicant flow between tiers, although there is also considerable overlap within tiers. The somewhat colorful names are intended as a mnemonic to assist the reader in distinguishing the various patterns. Although the categories reflect differences in students' level of aspiration, it should also be kept in mind that, except for a relative handful who are admitted by exception, students who are admitted in any of these categories have met UC eligibility requirements and rank within the top 12.5% of California high school graduates. At the same time, the different applicant-flow patterns are associated with very different student characteristics and behaviors, including students' academic and demographic profiles and the probability that they will enroll at UC.

Figure 4

Selected Student Characteristics and Yield Rates by Applicant-Flow Type, 1994 to 2011

Type	Mean HSGPA	% in Top Third of Applicant Pool	Mean Family Income	% Underrepre-sented Minority	Yield Rate
High Flyers	4.05	82%	$ 126,500	17%	46%
Upstreamers	4.01	71%	$ 106,500	18%	69%
Downstreamers	3.70	27%	$ 110,000	20%	59%
Mid Flyers	3.70	26%	$ 99,200	21%	54%
Cascaders	3.45	6%	$ 103,100	27%	32%
Low Flyers	3.52	15%	$ 93,600	30%	48%
Denied	3.14	6%	$ 90,900	35%	N/A

Source: UC Corporate Student System data for California resident freshman applicants, 1994 to 2011.

High Flyers are among the less frequent but more interesting patterns of applicant flow: students who apply *only* to highly selective UC campuses and are admitted there. Though this category accounts for only five percent of all UC applicants since 1994, High Flyers include many of California's top high school graduates. As a group, they have stronger high-school GPAs than students in all other categories, and over 80 percent rank within the top third of UC's applicant pool as measured by grades and test scores.[3] With respect to their demographic profile, High Flyers tend to come from the most affluent families and have the lowest percentage, 17 percent, of underrepresented minority students of any applicant-flow category, although this subgroup includes many of the highest-achieving Black and Latino high-school graduates in the state.[4]

Perhaps the most surprising feature of this group is its low yield rate: Less than half of all High Flyers actually enroll at UC. The majority are "no shows" who reject UC's offer of admission and enroll at other colleges and universities. Previous research has shown that these students more often attend private, selective institutions including (in order of frequency) the University of Southern California, Stanford, Harvard, Cornell, Brown, and Yale (Geiser & Caspary, 2005). It appears that many of these students consider UC as a "back up" in the event that they are denied admission elsewhere. High Flyers have the most postsecondary options of any group, and while their low yield rate may be considered a loss for UC, these students are virtually assured of a positive admissions outcome.

Upstreamers exhibit a different and much more common pattern. Although they apply to Tier 1 campuses and are admitted there, students in this category submit multiple applications to Tier 2 and sometimes Tier 3 campuses as well, evidently as a hedge against being denied at their first-choice campus.[5] Upstreamers are the single most frequent pattern of applicant flow in the UC system, accounting for over a quarter of all applicants since 1994. Their academic profile is almost as strong as that for High Flyers – 71 percent of Upstreamers rank in the top third of the UC applicant pool – and their demographic profile is similar although they come from somewhat less affluent families, on average. The most striking difference between the two groups is their yield rates: Upstreamers are far more likely than High Flyers to accept admission, and nearly 70 percent enroll at UC.

Downstreamers are the second most frequent pattern of applicant flow since 1994. Like Upstreamers, Downstreamers also submit multiple applications to both Tier 1 and Tier 2 and often Tier 3 campuses as well, and their socioeconomic profile is similar to the Upstreamer category. The main difference is that Downstreamers have a significantly poorer academic profile – only 27 percent rank within the top third of the UC applicant pool – and so are denied at Tier 1 and admitted in Tier 2. Because the latter campuses are often these students' second choice, however, the yield rate for Downstreamers is less than that for Upstreamers: About 60 percent choose to enroll at UC.

Mid Flyers and *Low Flyers* are two relatively small groups of students who apply *only* to less selective campuses and are offered admission there. Historically, yield rates for both categories have hovered around 50 percent. Both patterns have become less common over time with the general increase in multiple filing throughout the UC system. The patterns are of interest, nonetheless, because of the heavy concentration of low-income and underrepresented minority students in these categories, especially the Low Flyer group.

Cascaders are the fastest-growing pattern of applicant flow over the last two decades. The term is an allusion to the so-called "cascade effect" that occurred after Regents' resolution SP-1 took effect in 1998, eliminating affirmative action in UC admissions. In that year, admit rates for underrepresented minority applicants fell sharply at UC's most selective campuses but swelled at Tier 3 campuses (though many of those admitted chose not to attend). The pattern is by no means limited to underrepresented minority applicants, however, and has become increasingly common among all UC applicants since 1998. Cascaders are applicants who are denied at Tiers 1 and/or Tier 2 and admitted in Tier 3. The category includes students who are referred to Tier 3 by other campuses as well as those who apply directly, since the general pattern of admits and denials is the same for both. Cascaders as a group tend to come from less affluent families than other applicants and include a relatively larger proportion, 27 percent, of underrepresented minorities. Academically, though the vast majority are UC-eligible and

[3] Here and throughout the paper I utilize an Academic Index to provide a short-hand, summary measure of students' academic profiles. Academic Index = [(High School GPA x 1,000) + (SAT I or ACT-equivalent score x 2.5)]. Thus, a student with a 4.0 HSGPA and a perfect SAT I score of 1600 would have an Academic Index score of 8,000. Determination of students' rank within the top, middle, or bottom third of the UC applicant pool is based on their Academic Index score compared to all other applicants in the same year.

[4] Due to very small sample sizes and attendant concerns about confidentiality of student records, the sample provided to the author by UC's Office of the President does not allow separate identification of American Indian or Native American students, although they are included in the overall sample. Thus, the counts for "underrepresented minority" students in this and the following tables include only Black/African American and Chicano/Latino applicants, admits, and enrollees.

[5] Upstreamers are usually though not invariably admitted at Tier 2 campuses as well. Between 1994 and 2011, 92 percent of Upstreamers applied and were admitted in Tier 2.

therefore admitted, these applicants tend to have lower GPAs than those in other categories, and only six percent rank within the top third of the UC applicant pool as measured by grades and test scores.

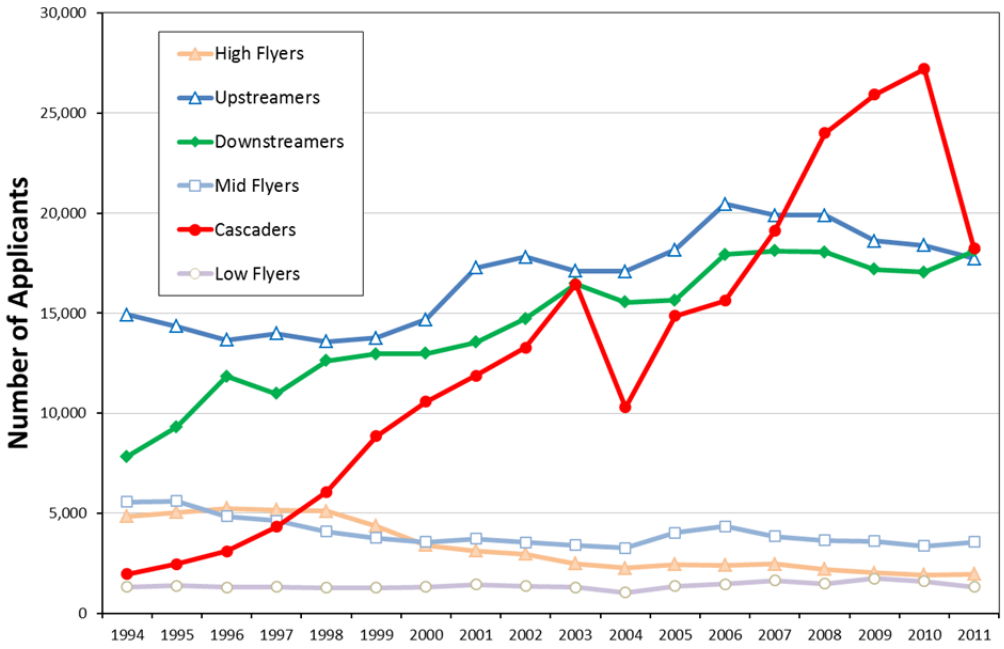
Finally, Cascaders have the lowest yield rate of any applicant-flow category: Since 1994, less than a third of all applicants admitted in this category ultimately enrolled at UC.

THE RISE AND FALL OF REFERRAL

Figure 5 shows changes between 1994 and 2011 in the number of UC applicants with each applicant-flow category. While there has been considerable growth in both the Upstreamer and Downstreamer categories, what stands out most is the spectacular growth in the Cascader category from 1994 to 2010 and its sharp decline in 2011.

Figure 5

UC Applicant Flow by Year



Source: UC Corporate Student System data on California resident freshman applicants.

The remarkable rise and fall within the Cascader category is the result of recent changes in UC's "referral pool" process. Since the mid-1990s, UC has relied increasingly on referral as the primary tool by which to honor its "guarantee" under the Master Plan to provide a place for all eligible California applicants, if not necessarily at their campus of choice. UC-eligible applicants who are denied admission at oversubscribed campuses are referred to campuses where space is available, and Tier 3 campuses – Santa Cruz, Riverside, and beginning in 2005, Merced – have accepted all eligible referrals until now. The size of the referral pool has grown steadily each year over the past decade except 2004, when the state imposed deep enrollment cuts on UC.[6] The main reason why Tier 3 campuses have been able to admit all eligible referrals until now is because of the extremely low yield rate among these students: Only about six percent of referrals accept admission and enroll at those campuses. Some consider referral largely an empty gesture in view of its extremely low yield rate, but there is no question that these students have been admitted somewhere within the university.

Expansion of the referral pool ended in 2011, however, as the result of two circumstances. First, the Riverside campus had unexpectedly high enrollments in the previous year and was unable to accommodate additional referrals. Second, the new Merced campus changed its procedure for administering the referral pool. Previously, Merced automatically offered admission to all eligible referrals. In 2011, before offering admission, Merced began querying applicants by email whether they were interested in attending, and the campus offered admission only to those students who affirmed interest. The result was a steep

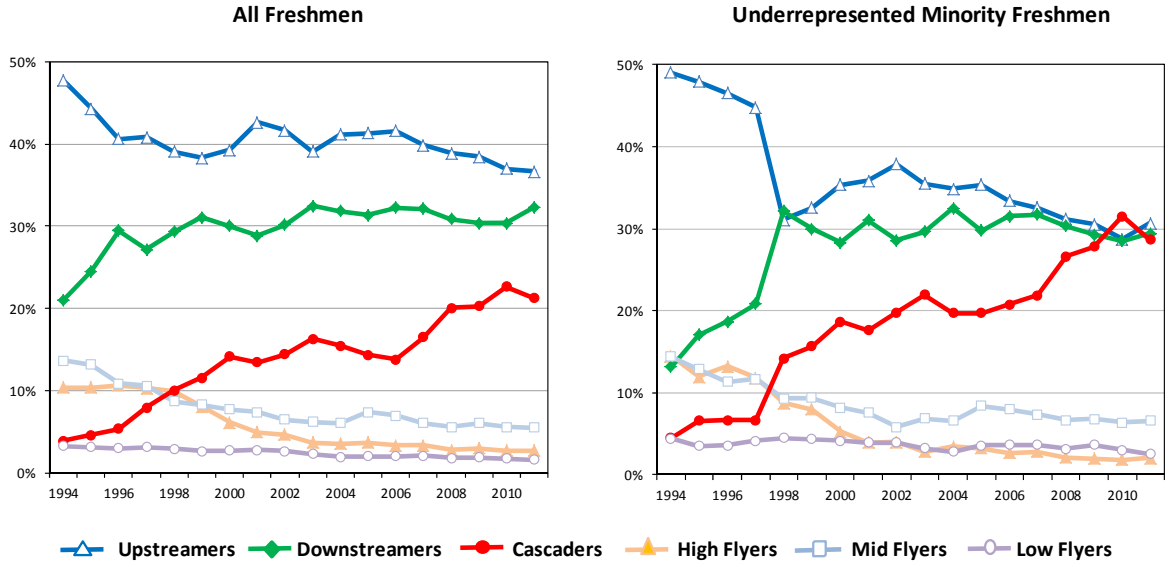
[6] Funding for enrollment growth was deleted from UC's preliminary 2004-05 state budget. Although funding was later restored, UC had by that time already denied an unusually large number of students for the Fall 2004 term.

decline in the number of applicants offered admission via referral. That decline is reflected in the trajectory of the Cascader category in Figure 5 above. The number of admits in that category plummeted by a third between 2010 and 2011.

It could be argued that the change is largely a technical adjustment since the referral pool and the Cascader category in general have such a low yield rate to begin with. Notwithstanding their low yield *rate*, however, the *number* of students in this category who enroll at UC is substantial. This is especially the case for underrepresented minority applicants. As shown in Figure 6, since the mid-1990s, Cascaders have been the fastest growing source of new Black and Latino freshmen.

Figure 6

Percentage of New Freshman Enrollments by Applicant-Flow Type



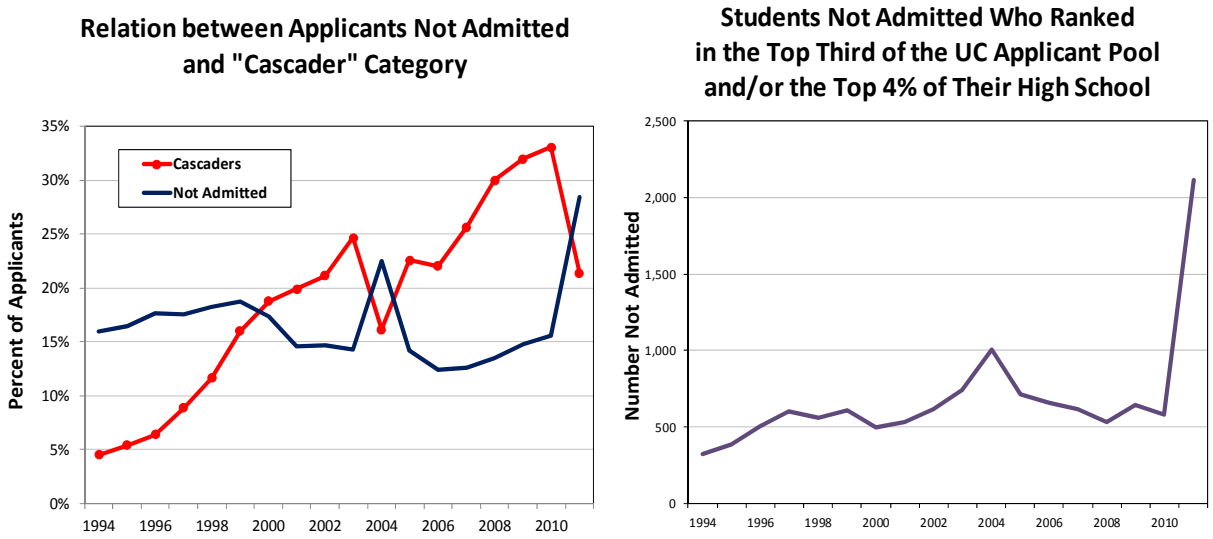
Source: UC Corporate Student System data on California resident freshmen, 1994 to 2011.

In 1994, Upstreamers accounted for the largest share of all new freshmen, including underrepresented minority freshmen, and this has remained the most common pattern for other entering freshmen since then. When SP-1 took effect in 1998, however, the proportion of new Black and Latino freshman in the Upstreamer category declined precipitously, and both the Downstreamer and Cascader patterns became more common. Since 1998, Downstreamers have accounted fairly consistently for about 30 percent of all new Black and Latino freshmen, while the percentage in the Cascader category has rapidly increased. By 2010, the Cascader pattern accounted for the largest share of new underrepresented minority freshmen, although that share fell back in 2011 with the change in the referral process at UC Merced. Given the importance of the Cascader pattern for underrepresented minority enrollments, the change is cause for concern.

Another concern is the volatility in UC's admissions numbers that the new referral process has introduced. As shown in the left-hand graph in Figure 7 below, the sharp decline in referral admissions (and in the Cascader pattern generally) in 2011 appears to have produced a sharp increase in the number of applicants who are not admitted to the system, according to UC's annual applicant-flow reports. The earlier spike in 2004 in the proportion of applicants not admitted was the result of state-mandated enrollment cuts in that year. But that event pales in comparison with the last few years. Between 2010 and 2011, the proportion of applicants not admitted at any UC campus almost doubled, from 16 to 29 percent of all California applicants. On top of the increase shown here, moreover, the proportion not admitted jumped again to 33 percent of all applicants in 2012, according to official UC data.[7]

[7] Aggregate UC applicant-flow data for 1989 to 2012 are available from: http://www.ucop.edu/news/factsheets/2012/flow-frosh-ca-12.pdf.

Figure 7



Source: UC Corporate Student System data on California resident freshman applicants, 1994 to 2011.

To be sure, these trends may look more alarming than they really are, since they also reflect a change in the way that admits are classified and counted. In 2011 UC introduced a new admissions category called "guaranteed offers" to take account of the new referral procedure at UC Merced. The category includes UC-eligible referrals who are contacted via email to probe their interest in attending Merced but who deny interest. These students are classified as having received a "guaranteed offer" even though they are not actually admitted, nor are they counted in UC's official admit totals. The new category accounts for about half of the increase between 2010 and 2012 in the number of applicants who were not admitted anywhere in the UC system.[8]

The changes in procedure and terminology have created two problems, however. First, they have created a discontinuity between past and current admissions statistics, making it difficult to track admissions trends before and after 2011. For example, "yield" rates for the UC system – the proportion of admitted students who enroll at UC – appear to have increased sharply after 2010, when in fact enrollment yield has remained fairly stable; the increased yield *rate* is an artifact of the much smaller number of total admits to the system due to the restriction of referral admissions at UC Merced.

A second and more important issue is that the university can no longer claim to be admitting all eligible applicants. The right-hand graph in Figure 7 above shows the number of applicants who were not admitted at any UC campus but who ranked either in the top third of the UC applicant pool (as measured by grades and test scores) or in the top four percent of their high school, or both (the count is unduplicated). Either criterion ordinarily would be sufficient to qualify these students as UC-eligible, barring technical deficiencies in their transcripts. From 1994 to 2010, the number of such students who were not admitted hovered around 500 in most years except for the spike in 2004. But between 2010 and 2011, the number jumped from fewer than 600 to over 2,100 students -- about seven percent of the total UC applicant pool -- and it is likely that the numbers for 2012 will show a worsening of this trend when student-level data become available.

Until 2010, UC's annual "Accountability Report" described the admission guarantee thusly:

> The Master Plan dictates that UC enroll freshmen from the top 12.5 percent of California's public high school graduates, but allows UC to define that pool. UC has historically done this by establishing the academic criteria by which students can become eligible. UC guarantees admission somewhere in the system to the students who have satisfied these eligibility requirements (UC Office of the President, 2010).

[8] In 2012, 18,125 more California applicants were not admitted to the UC system than before the change in the referral process. UC Merced made a total of 9,060 "guaranteed offers" in 2012 (UCOP, 2013). Given the large number of other contemporaneous changes in UC admissions during this period, it is difficult to isolate the impact of any one change. In addition to the change in the referral pool, the increased volume of total applications to the UC system during this period was probably also a major contributing factor.

Since 2011, UC has begun to characterize the admission guarantee differently; the 2013 Accountability Report uses this language:

> Despite these continuing financial pressures, the University continues to meet its Master Plan commitment to provide a space on one of the UC campuses to all California applicants who qualify for guaranteed admission and who wish to attend (UC Office of the President, 2014).

It is important neither to exaggerate nor understate the significance of this change. On the one hand, the change in the administration of the referral pool is largely procedural in nature, and it is doubtful that it has made much of difference in the number of students who otherwise would have enrolled at UC Merced. On the other, it is evident that an important symbolic line has been crossed, and a substantial number of UC-eligible applicants are no longer being admitted anywhere in the UC system.

UC's Board of Admissions and Relations with Schools (BOARS), the university-wide faculty committee responsible for setting admissions policy, has become increasingly concerned with the referral issue:

> As Merced receives more applications and becomes more selective, the UC system will, at some point, no longer be able to offer a guarantee of referral admission to every student defined as eligible . . . UC will have to consider options for adjusting eligibility policy or perhaps reconsider the entire referral concept. It was noted that the issue goes to the heart of UC's mission to promote social mobility and train future leaders from a broad range of society. The understanding of educational opportunity embodied in the Master Plan and the referral guarantee are now running up against the state's disinvestment. Quite simply, the university does not have enough funding from the state to support the expansion of enrollments to meet the state's goals (BOARS, 2013b: 4-5).

State budget cuts are undoubtedly the primary factor that has limited UC's capacity to offer a place for all eligible applicants, but the rise and fall of referral also illustrates another, internal trend in university admissions – what John Aubrey Douglass (2013) has called the "devolution" of institutional authority within the UC system. Over the past ten years, campuses have demanded and received greater authority within virtually every area of university policy, and university admissions is no exception. Campus admissions officials have grown impatient with the traditional, statewide "eligibility" construct, often seeing it as a constraint on local authority, and have sought a greater role in setting entrance criteria.

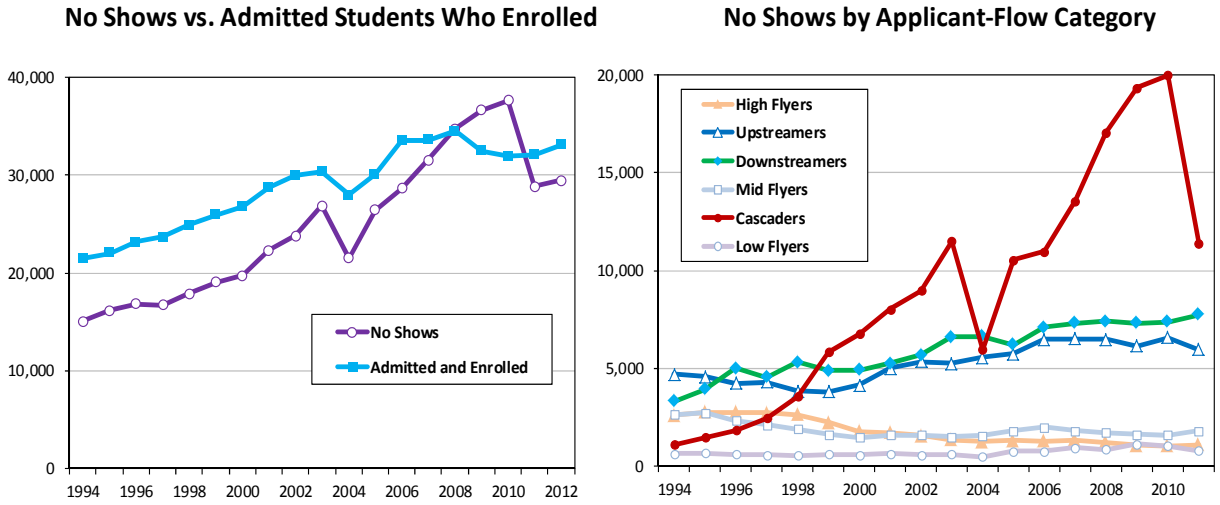
An example of this trend is UC's new 2012 admissions policy which, for the first time, gives campuses the authority to identify a portion of the UC eligibility pool (a category known as "Entitled To Review") based on their own, local criteria. Merced's decision to change the administration of the referral pool is another example of the same trend. That a decision with such important ramifications for the UC system as a whole was taken at the local campus level is an indication of the extent to which authority for admissions has thus far devolved.

THE "NO SHOW" PROBLEM

The growing volume of "no shows" – applicants who are admitted but do not enroll – is another serious concern. As shown in Figure 8 below, in 2009 and 2010 the number of no-shows for the first time surpassed the number of admitted students who enrolled at UC, although their number fell back in 2011 as the result of the change in the referral process.

The great majority of no-shows fall into three main applicant-flow patterns. The Cascader pattern produces the largest volume of no-shows; even after the change in the referral-pool process, Cascaders accounted for about 11,400 students or 40 percent of all no-shows in 2011. Downstreamers and Upstreamers accounted for about 27 and 21 percent of no-shows, respectively, in that same year. No-show rates are, by definition, the reciprocal of yield rates, so that factors that predict one tend to be inversely related to the other. While the applicant-flow data do not allow one to probe the reasons for students' behavior, the patterns shown here are consistent with anecdotal experience about the importance students attach to attending their first-choice campus, and the relative attractiveness of their second choice compared with other, non-UC institutions, when deciding whether to accept an admit offer from UC. In many cases, students who are denied admission at their first-choice UC campus opt to exit the system.

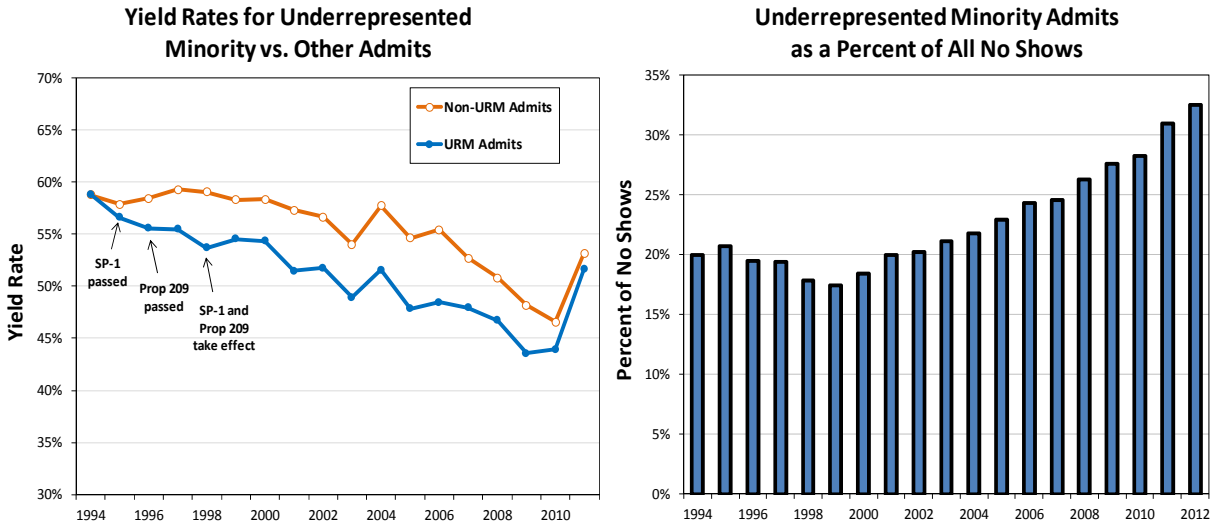
Figure 8



Source: UC Corporate Student System data on California resident freshman applicants, 1994 to 2012.

One reason why the increasing volume of no-shows is significant is that they are a highly diverse group. UC has long struggled to admit a student body that reflects the diversity of the state, but that goal has been frustrated by persistently low UC-eligibility rates among Black and Latino high school graduates, who remain heavily concentrated in California's lowest performing schools. Until 1998, UC's primary tool for dealing with the problem was by considering race and ethnicity as a factor in admissions selection at Tier 1 and, to a lesser extent, Tier 2 campuses. When affirmative action was eliminated by Regents' resolution SP-1 and statewide Proposition 209, the admit rate for underrepresented minority applicants at UC's most selective campuses plummeted by almost half. Almost all of these applicants were UC-eligible and therefore offered admission at less selective campuses, often via referral. But many declined the offer and chose not to attend UC. As a result, the *yield rate* for underrepresented minority admits declined sharply relative to other students beginning in the mid-1990s and has never caught up since:[9]

Figure 9



Source: UC Corporate Student System data on California resident freshman applicants, 1994 to 2011.

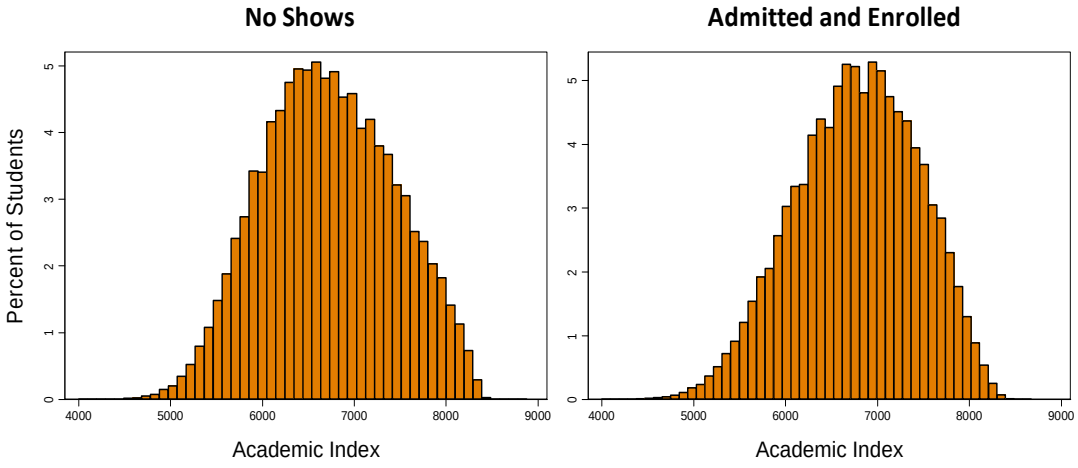
[9] The spike in systemwide yield rates in 2011 for both underrepresented minority and other admits, shown in the left-hand graph in Figure 9, is an artifact of the change in the referral-pool process. For both groups, the total number of admits declined sharply as a result of the change, while the number of new enrollments remained relatively stable. But because the total number of admits is the denominator for calculating yield rates, it appears that yield has increased dramatically for both groups, when in fact this is not the case.

The lower yield rate among Black and Latino admits[10] necessarily produces a higher proportion of no-shows, as shown in the right-hand graph in Figure 9 above. Since 1998, the underrepresented minority share has grown from about 18 percent to almost a third of all no-shows. A higher yield rate among this group could do much to aid UC's efforts to reflect the diversity of California, where underrepresented minorities now account for over half of all high school graduates.

In addition to their diversity, no-shows also tend to be high achievers. Figure 10 below compares the distribution of Academic Index scores for no-shows vs. admitted students who enrolled at UC between 1994 and 2011. The index is a short-hand, summary measure of students' academic achievement that combines their grades in UC-required courses together with their SAT I or ACT-equivalent scores.[11] No-shows account for a greater proportion of students at the high end of the achievement distribution, with index scores above 8,000, although their mean index score, 6,720, is slightly below that for admitted students who enrolled, 6,773.

Figure 10

Distribution of Academic Index Scores
For No Shows vs. Admits Who Enrolled



Source: UC Corporate Student System data on California resident freshman applicants, 1994 to 2011.

If they had enrolled at UC, it is likely that the great majority of no-shows would have performed as well as admits who did attend. The 6-year graduation rate for admits who entered UC between 1994 and 2005 was 81 percent. Matching these students with those in the no-show group on several factors -- high-school GPA, SAT/ACT scores, campus admitted, and the year in which they applied to UC -- an out-of-sample prediction performed by the author suggests that 80 percent of no-shows also would have graduated within 6 years. While out-of-sample prediction cannot take account of all possible differences between admits who enrolled and those who did not, it is at least indicative of the strong academic profile of no-shows as a group.[12]

Since the 1990s, the no-show rate has grown much faster among admits at the bottom and middle of the UC applicant pool than at the top. There is an importance difference between individual campuses and the UC system in this regard. At the campus level, yield rates tend to be highest – and no-show rates therefore lowest – among admits with poorer high-school grades and standardized test scores. The opposite is true for the UC system as a whole. UC is its own biggest competitor, and campuses compete for the same students. Competition is keenest for top students, who typically receive admit offers from several campuses. The result is that campuses unwittingly dilute each other's yield rates, and the dilution is greatest among students with the strongest academic profiles. But when the numbers are unduplicated and each student is counted only once, the yield rate for the *UC system* is lowest – and the no-show rate highest – among admits in the middle and bottom

[10] One factor that likely contributes to lower yield rates among underrepresented minority admits at UC is student financial aid. After SP-1 and Proposition 209 took effect in 1998, many colleges and universities with which UC competes for students continued to practice affirmative action not only in admissions but financial aid, and UC could no longer match the financial aid packages that other institutions could offer top minority applicants. Perhaps as a result, the "no show" rate has been highest among minority admits in the top third of the UC applicant pool (Geiser & Caspary, 2005).

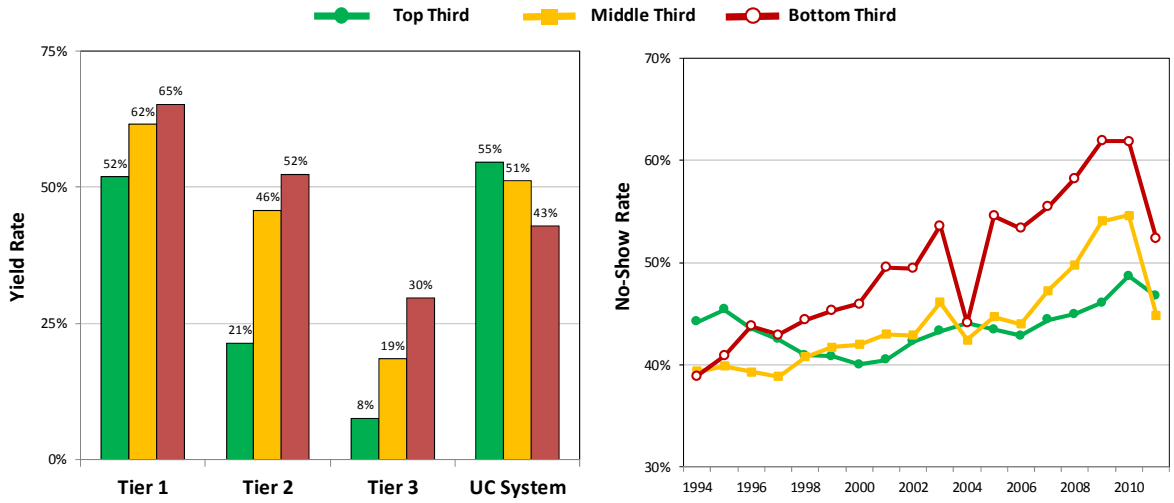
[11] See footnote 4 on page 6 for an explanation of how the Academic Index is calculated.

[12] See Appendix 2 for details of prediction methodology.

of the pool, as shown in the left-hand graph in Figure 11. Here is another illustration of how, as a system, UC admissions is more than the sum of its parts.

Figure 11

Yield and No-Show Rates for Admitted Students in Top, Middle, and Bottom Third of UC Applicant Pool, 1994 to 2011



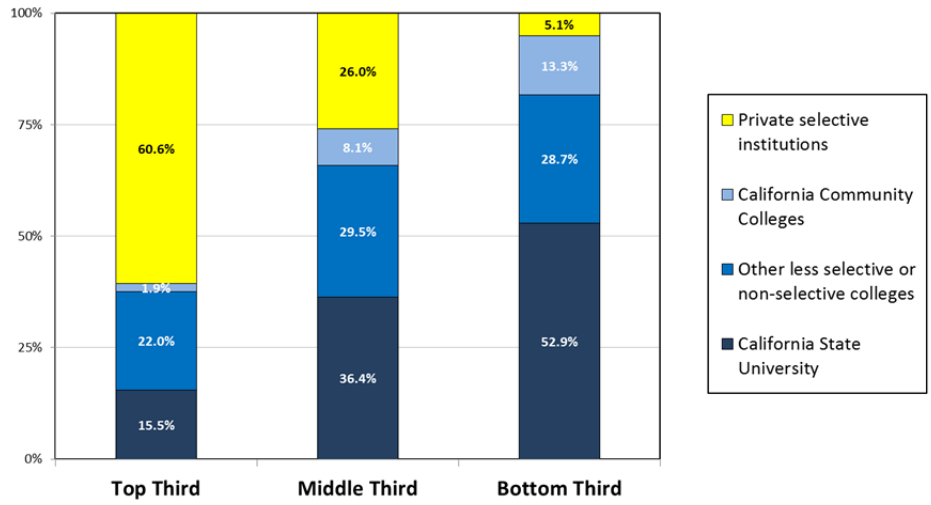
Source: UC Corporate Student System data for California resident freshman applicants, 1994 to 2011.
Top, middle, and bottom thirds are determined by applicants' combined HSGPA and SAT/ACT scores relative to other applicants in the same year.

Except for the downward spikes in 2004 and 2011 (artifacts of the sharply reduced number of admits in those years), no-show rates for admits in the bottom and middle of the UC applicant pool have grown much faster than among those at the top, as shown in the right-hand graph above. No-show rates for admitted students in the bottom and middle third of the pool peaked at 62 percent and 55 percent, respectively, in 2011, compared with a 49 percent no-show rate in that year for those in the top third.

The growing number of no-shows among High Flyers and other top applicants, while a loss for UC, is not necessarily a problem for the applicants themselves, who usually have many other good postsecondary options. Where the problem exists is with no-shows in the middle and bottom of the applicant pool, as previous research has shown:

Figure 12

College Destinations of No Shows in the Top, Middle, and Bottom Third of UC Applicant Pool, 2000 to 2002



Source: Adapted from Geiser & Caspary (2005: Appendix B).
Data are from National Student Clearinghouse and include only students whose college destinations were known.

No-shows in the middle and bottom of the UC applicant pool include many students in the Downstreamer and Cascader categories who are admitted only at their second- or third-choice campuses. These students have fewer postsecondary options and often attend institutions where their chances of completing a B.A. are significantly reduced. Among all no-shows admitted to UC between 2000 and 2002 whose college destinations were known, 74 percent of those in the middle third of the UC applicant pool enrolled at institutions that were less selective than UC. For no-shows in the bottom third of the pool, the proportion was 95 percent (Geiser & Caspary, 2005: 408-409).

INSTITUTIONAL SELECTIVITY AND COLLEGE COMPLETION: A NOTE ON RELATED RESEARCH

It might be argued that if students are admitted to UC and choose not to attend, they are no longer the university's concern. But the issue is not so simple. The high volume of no-shows at UC has important consequences for the productivity of California higher education as a whole.

A growing body of research shows that the selectivity of a college or university where a student initially enrolls is a powerful determinant of whether they will go on to complete a B.A. Moreover, institutional selectivity retains its power *even after controlling for differences in students' academic qualifications*. This point deserves special emphasis, since it is often assumed that higher rates of college completion at more selective institutions are simply a reflection of the fact that they enroll better qualified students. That assumption is mistaken.

The most comprehensive analysis of B.A. completion yet undertaken is Bowen, Chingos, and McPherson's 2010 book, *Crossing the Finish Line*. Based on a massive sample of students at 21 public flagship universities and four state university systems, Bowen and his colleagues examined the impact of a variety of factors on college completion after controlling for students' academic and socioeconomic characteristics. Institutional selectivity was consistently among the most important determinants:

> More selective universities, by definition, enroll students with stronger entering credentials who are more likely to graduate regardless of where they go to college. We find, however (somewhat to our surprise), that controlling for students' high school GPAs, SAT/ACT scores, and demographic characteristics reduces the differences in graduation rates across institutions only modestly. Substantial differences remain . . . [W]e suspect that they are due at least in part to peer effects (going to college with students more likely to graduate makes a student more likely to graduate) and the role of norms or expectations (at highly selective institutions with generally high graduation rates, there may be a widely shared expectation that essentially everyone will graduate) (Bowen, Chingos, & McPherson, 2010: 192, 196).

The finding that institutional selectivity has a powerful effect on B.A. completion, independent of student qualifications, leads to a surprising and counterintuitive conclusion: Academic qualifications being equal, students are likely to perform better at a highly selective college or university than at less selective 2-year or 4-year institutions.

This was another of the key findings of *Crossing the Finish Line*. Bowen and his colleagues found that large numbers of students were "undermatched," that is, they attended colleges that were less demanding than they were qualified to attend.[13] More than 40 percent of students whose qualifications would have placed them in the top ten percent of applicants at state flagship universities enrolled instead at less selective 4-year or 2-year institutions, and some did not attend college at all. The pattern was especially pronounced among low-income and underrepresented minority students. Counterintuitively, however, undermatched students had significantly *lower* completion rates than comparably qualified students who attended a flagship campus. This finding has important implications for higher education policy since, as the researchers conclude, the national rate of baccalaureate attainment could be substantially improved if undermatched students began at colleges and universities for which they are qualified:

> The extent of undermatching is especially troubling in light of the evidence of differences in educational outcomes – lower graduation rates and longer time-to-degree – associated with taking full advantage of the educational opportunities for which students were presumptively qualified. Efforts need to be made nationwide to improve the process by which

[13] Bowen, Chingos, and McPherson use the term "undermatching" to distinguish from "overmatching" – students attending colleges for which they are unqualified – a phenomenon often cited in the debate over affirmative action in college admissions. Bowen and his colleagues found little evidence of overmatching in their national sample, however, while undermatching was widespread (Bowen, *et al*., 2010: 100).

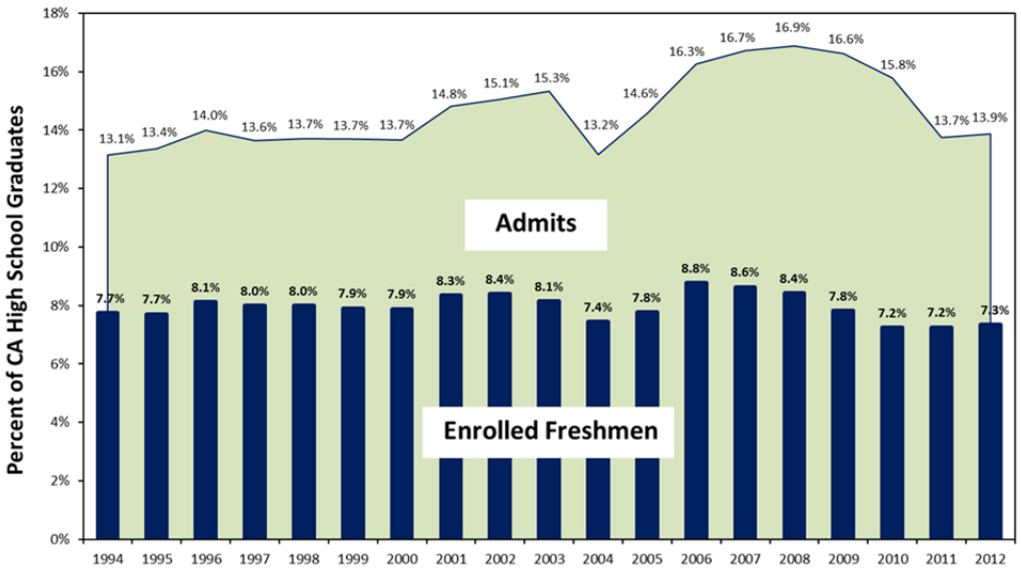
students are channeled (or channel themselves) into educational settings that too often fail to encourage them to realize their full potential (Bowen, Chingos, & McPherson, 2010: 110).

The national pattern of undermatching has special salience for California. Of all the states, California enrolls the smallest proportion of its college students in highly selective institutions and the largest proportion at less selective or non-selective campuses. Although it is not possible to estimate the fraction precisely, it is evident that a sizeable fraction of California college students are "undermatched," and it is not surprising, for that reason, that the state's postsecondary education system ranks near the bottom of the nation in B.A. completion per population 18-to-29 years old (Geiser & Atkinson, 2013). Many UC no-shows fall into the undermatched category and attend institutions where their chances of completing a 4-year college degree are greatly reduced. Since 1994, over 300,000 admits in the middle and bottom third of the UC applicant pool have been no-shows. The loss of so many admits at UC represents a significant loss of human capital for California.

MEASURING "ACCESS": ELIGIBILITY AND PARTICIPATION RATES

Because of the substantial increase in both the number of applicants not admitted and the number of admits who do not enroll, the UC *participation rate* among California high school graduates has fallen to its lowest level in 30 years. As shown in Figure 13, just 7.3 percent of the state's graduating high school seniors enrolled as freshman at UC in 2012.

Figure 13
New California Resident Admits and Enrolled Freshmen as a Percentage of California High School Graduates



Source: UC Corporate Student System (for CA resident admits and new freshmen), California Department of Finance Demographic Research Unit (for CA public high school graduates), California Postsecondary Education Commission (for CA private high school graduates from 1994 to 2009), and Western Interstate Commission on Higher Education (for CA private high school graduates from 2010 to 2012).

The "participation rate" may be an unfamiliar statistic to those more accustomed to the UC eligibility rate as the primary measure of "access," as the opportunity to attend college is often termed. The participation rate represents the number of new UC "resident" freshmen – graduates from California high schools, both public and private – divided by the total number of high school graduates in any given year. Historically, the UC participation rate has always been considerably below the 12.5% eligibility rate mandated by the Master Plan, since many eligible students choose not to apply or, if admitted, not to attend UC. From the early 1980s until 2009, UC participation rates averaged just over 8 percent of all California high school graduates.

The decline in participation rates over the last three years appears to be primarily a consequence of recent state budget cuts, which have limited budgeted enrollment capacity and thereby restricted new admissions. As a strategy for dealing with the budget shortfalls, UC has increased tuition for in-state students and begun enrolling larger numbers of non-resident freshmen, who pay much higher tuition, and those changes undoubtedly have had an impact on participation rates as well. It is virtually impossible, however, to measure the impact of those changes with the data at hand. For example, growth in non-resident admissions has limited the space available for California residents, but the higher tuition rate for non-residents has also generated additional revenues to support instruction and financial aid, thereby helping to maintain access.

Tuition increases for in-state students have likely increased the number of no-shows, especially among Downstreamers and Cascaders, for whom CSU and the community colleges may now become more attractive compared to their second- or third-choice UC campus. But the size of that effect is difficult to estimate. The only conclusion that can be drawn with any confidence is that the *proximate* cause of the decline in UC participation rates is the growing number of California applicants who are either denied or decline admission, and those trends ultimately reflect the steep budget cuts that UC has sustained in recent years, although it is not possible to disentangle the impact of the cuts themselves from measures taken to mitigate them. In each year since 2009, the UC participation rate among California high school graduates has fallen to lows not seen since the early 1980s (See Figure 12).[14]

The UC *eligibility rate* is the other main indicator of access. The disparity in eligibility rates across different racial/ethnic groups, for example, is often cited in discussions of UC admissions. Eligibility and participation rates measure two different dimensions of access: The former measures how many students qualify for UC, whether or not they apply, while the latter measures how many actually attend. In contrast to the participation rate, however, the eligibility rate is a much less straightforward measure and has a tangled and somewhat contentious history. Because of recent changes in UC's policy on eligibility, moreover, it appears that the eligibility rate is now higher than at any point in the history of the Master Plan, although the exact rate is unknown and only a rough estimate is possible. Some background is necessary.

Since 1960, responsibility for monitoring UC eligibility rates has rested with two state agencies, first the Coordinating Council for Higher Education and later its successor, the California Postsecondary Education Commission. The university's budget from the state is heavily enrollment-driven, and state policy makers have needed accurate information on eligibility rates in order to ensure that UC and CSU were not exceeding their Master Plan targets and were enrolling new freshmen from within their respective 12.5% and 33.3% "eligibility pools." But measuring eligibility rates has never been easy insofar as it involves evaluation of students' high school course-taking patterns, grade-point averages, and standardized test scores, among other factors. The details of the methodology have changed over time but the general approach has remained the same. A random sample of transcripts is drawn for graduating seniors in California public high schools (the Master Plan's 12.5% eligibility target for UC considers only *public* high school graduates), and the transcripts are matched with SAT and/or ACT data for the same students from the national testing agencies.

These data are then reviewed to determine how many students meet UC's "Eligibility Index," the offsetting scale of high school GPA and test scores that UC has used for many years to determine statewide eligibility.[15] Since the introduction of UC's top 4 percent plan in 2001, CPEC has also used students' class rank in high school to determine how many students in the sample are "eligible in the local context." Finally, the sample results are extrapolated to the population of California public high school graduates as a whole to produce an estimate of UC's overall eligibility rate. Historically, most "eligibility studies," as they are known, have found that UC's actual rate exceeded its prescribed 12.5% target, and such findings have prompted the university to tighten its eligibility requirements on a number of occasions. Since 1960, ten eligibility studies have been conducted, averaging one every five years, although the intervals between studies have been irregular. Figure 14 (next page) shows the results of the eight studies conducted since CPEC took over responsibility in 1974.

Because of its implications for UC's state-funded budget, estimates of the eligiblity rate have often been a bone of contention. In 1983, for example, CPEC's preliminary findings showed that only 7 percent of California public high school graduates appeared to be "demonstrably eligible" for UC, far below its Master Plan target. Another 6.2 percent were "potentially eligible": They had completed all the UC-required coursework and achieved a sufficient grade-point average but had not taken all of the required tests. At UC's insistence, CPEC counted potentially eligible students as part of the overall UC eligibility pool in its final report (CPEC, 1985). In 1990, however, CPEC found that 12.3 percent of graduates were fully eligible and another 6.5 percent potentially eligible, which together would have brought the overall pool to 18.8 percent. Again at UC's insistence, CPEC reversed course and counted only fully eligible students as part of UC's official eligibility rate, thereby deflecting criticisms from some in state government that UC's budgeted enrollment numbers were too high (CPEC, 1992).[16]

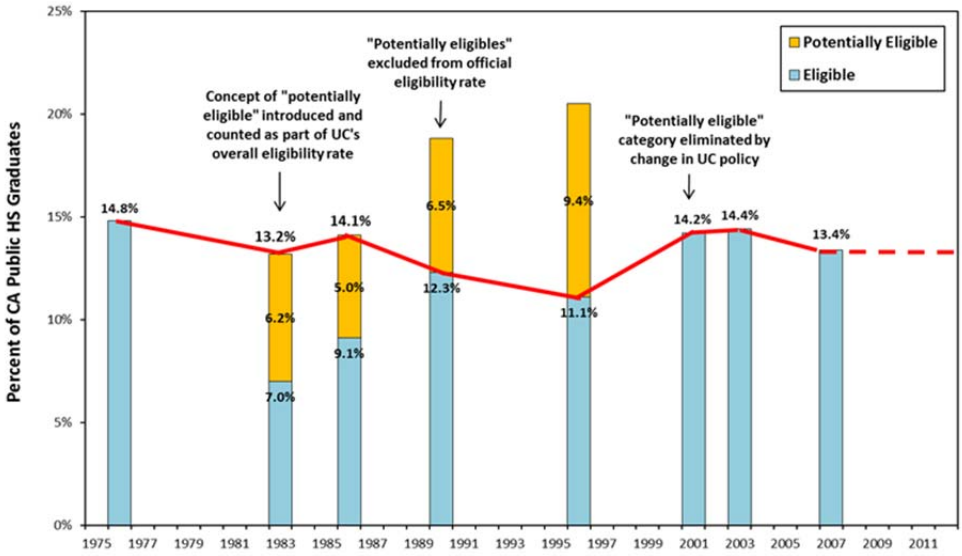
[14] Again, the numbers for 2004 in Figure 13 are an aberration, reflecting cuts in enrollment funding in UC's preliminary state-funded budget for that year. Nevertheless, UC participation rates since 2010 have fallen below even the 2004 rate and are lower than any year since 1982, when the rate was 7.3 percent.

[15] The Eligibility Index is an offsetting scale in which students with lower GPAs are required to have higher test scores, and vice versa. Traditionally, private high school graduates have been held to "equivalent levels" of eligibility as public graduates. Thus, while the Eligibility Index is based on surveys of public graduates, private graduates who meet the Index are also considered eligible. Private graduates historically have accounted for about 7 to 9 percent of all California high school graduates and 15 to 17 percent of UC first-time freshmen.

[16] The "potentially eligible" problem was resolved for good by a UC policy change in 2001, under a threat from the state to cut $11 million in enrollment funding from UC's budget. The source of the problem was that, while all applicants were required to take a battery of standardized tests in order to qualify for UC, scores on those tests were not counted in determining eligibility for students with high GPAs; applicants with GPAs above 3.3 had no minimum test-score requirement. The lack of a minimum test-score requirement for these students

The last CPEC study in 2007 estimated the overall eligiblity rate at 13.4 percent, plus or minus a percentage point, very close to UC's nominal Master Plan target.

Figure 14
History of UC Eligibility Rates



Source: California Postsecondary Education Commission.

Since 2007, two events have fundamentally altered the eligibility picture. First is the demise of CPEC. Describing the commission as "ineffective," Governor Jerry Brown eliminated funding for CPEC in a line-item veto in 2011. For the first time since the beginning of the Master Plan, no state apparatus exists to monitor UC or CSU compliance with its provisions. Of course, responsibility for measuring eligibility rates could be shifted to another state agency or even to UC and CSU themselves, although the latter shift would likely raise questions about the impartiality of the study findings.

The second event is is the introduction in 2012 of UC's new policy on freshman eligiblity, which involved several major changes: (1) Eligibility in the Local Context was expanded from the top 4 percent to the top 9 percent of graduating seniors in each California high school; (2) the statewide Eligibility Index was recalibrated to reduce the pool of those Eligible in the Statewide Context from 12.5 percent to 9 percent in order to offset in expansion of ELC; (3) a new pathway to eligiblity, "Entitled To Review," was introduced to allow campuses to admit two to three percent of the pool based on comprehensive review of applicants' qualfications, with no fixed eligibility requirements; and (4) the requirement that students submit scores on three SAT Subject Tests was eliminated.

By design, these changes were intended to expand the pool from which UC admits its students while at the same time adhering to the prescriptions of the Master Plan. Preliminary indications are that the changes has achieved the first of these two objectives. In the first year under the new policy, UC had the highest application rate at any point in its history save for the years immediately following World War II when returning veterans flooded UC under the GI Bill – in 2012, more than one out of every five California high school graduates applied for admission to UC.

The new policy – especially the new ETR pathway – represents a deliberate break from the past. Throughout most of the history of the Master Plan, student application patterns at UC have exhibited a high degree of *self selection*: Because UC eligibility requirements were relatively straightforward and allowed prospective applicants to determine whether they qualified, students tended to "sort" themselves, and for the most part only UC-eligible students tended to apply. The 2012 changes, on the other hand, have pushed UC in the direction of the admissions model employed at highly selective private institutions. That model involves no prior or separate assessment of whether students meet some minimum standard of eligiblity but invites a very large volume of applications from which a very small number are ultimately selected. By de-emphasizing the role of eligibility, the 2012 changes have moved the UC system as a whole, including less selective campuses as well as

resulted in a sizeable pool of "potentially eligible" students -- those with high GPAs who did not apply to UC and so did not sit for the required tests – who would have become eligible simply by taking the tests, no matter what their score. The solution to the problem was to introduce a minimum test-score requirement for applicants at *all* GPA levels, thereby eliminating the "potentially eligible" category.

highly selective ones, much closer to the private model. The advantage is that UC can select its students from a broader and presumably more diverse pool; the disadvantage is that many more applicants are now being rejected.

But with respect to its adherence to the Master Plan, the new policy has proven problematic: It is evident that UC's actual eligiblity rate is now far in excess of its 12.5% target rate. The problem stems from a miscalculation by the authors of the policy, who had believed that the new "9 by 9" eligiblity structure – 9 percent ELC and 9 percent Index eligible – would together capture a pool of only 10.5 percent of California public high school graduates due to projected overlap between the two groups. The projection turned out to be mistaken:

> [W]hen BOARS developed the details of the statewide index and ELC identification for the new eligibility policy, it projected that the 9-by-9 structure would identify as eligible about 10.5% of the California public high school graduating class, and that an additional 2% would be admitted under the ETR criteria, to bring UC to the 12.5% figure expected under the Master Plan. In its October 2012 report to the Regents on Comprehensive Review, BOARS noted that the current statewide admissions index for freshmen applicants was identifying too many students for statewide eligibility, and that a recalibration would be necessary.
>
> The data demonstrate vividly why BOARS came to this conclusion. In 2012, the statewide index identified 43,761 applicants from California public high schools as eligible, representing 10.5% of the 418,598 public high school graduates for that year. For the class entering as freshmen in 2013, the index identified 45,581 applicants from public high schools, or 11.1% of the total estimated number of public high school graduates. For both 2012 and 2013 then, UC had more applicants eligible in the statewide context than had been originally projected for the ELC and statewide index-eligible *combined* (BOARS, 2013c: 16; italics in original).

BOARS now estimates that 14.9 percent of California public high school graduates were admitted and presumably eligible under the new policy (BOARS, 2013c). This is already higher than the rate observed in any of ten previous eligibility studies. Moreover, as BOARS' report notes, the 14.9% figure excludes eligible California graduates who did not apply to UC, so that the true eligibility rate is actually higher. Based on historical experience with UC-eligible students who did not apply, it is likely that the rate is at least a percentage point higher – 16 percent or more of all public high school graduates – although the figure cannot be determined accurately without a full-scale eligibility study of the kind that CPEC previously conducted.[17]

In sum, the two key measures of "access" do not necessarily vary together and, indeed, appear to be moving in opposite directions. At a time when the UC eligibility rate has reached its highest mark in the history of the Master Plan, the participation rate – the proportion of California high school graduates who actually attend UC – has ebbed to lows not seen in three decades.

THE FUTURE OF ELIGIBILITY

The eligibility construct and the Eligibility Index, in particular, has long had its critics. The strongest criticism has been made on academic grounds: In evaluating students' academic preparation, formulaic measures such as the Index or high-school class rank are simply too blunt an instrument to decide who is qualified for UC and who is not:

> Whereas UC eligibility is supposed to be awarded to the "top 12.5%" of California high school graduates on the basis of achievement, the current policy is conferring the guarantee largely on the basis of mere coursework taken and test participation. Conversely, thousands of California students, despite presenting strong records of academic achievement that far surpass the current eligibility standards, are ineligible for minor technical reasons (BOARS, 2008:3).

This was the rationale for the new Entitled To Review category introduced in 2012. Its intent was to ensure that, at least at the margin of the UC eligibility pool, applicants would receive the benefit of a more comprehensive review of their qualifications.

Despite its obvious inadequacy as a comprehensive measure of academic qualifications, however, the Eligibility Index and related requirements have long served another purpose -- defining what has been called the "bright line" of eligiblity by which to monitor UC compliance with the Master Plan.[18] Under the policy framework that has been followed until now,

[17] BOARS has devised a new Eligibility Index intended to restrict statewide eligibility to the level originally envisioned by the "9 by 9" proposal. The new Index will take effect for applicants admitted in 2015.

[18] The "bright line of eligibility" is a term coined by former UC Provost C. Judson King, although he may not necessarily approve of the use made of the term here.

comprehensive review of student qualifications has been conducted as part of the admissions-selection process at each campus, whereas eligibility requirements set minimum standards for admission to the UC system. For the latter purpose, the Eligibility Index has provided a relatively straightforward alogorithm for CPEC to monitor statewide eligiblity rates in its periodic surveys of California high school graduates. Likewise, the use of class rank since 2001 as a measure of eligibility for UC's top 4% plan has provided another straightforward indicator for monitoring the ELC pool. In the three eligibility studies conducted over the past decade, the two indicators have enabled state officials to estimate the size of UC's overall eligibilty pool with a high degree of confidence.

The bright line of eligibility has also proved useful to students, who can easily determine for themselves whether they meet UC eligiblity requirements. Critics point out that the Eligibility Index may not be as simple and transparent as its seems because of the complexities of UC's course-taking requirements; students whose GPAs and test scores appear to qualify under the Index are sometimes declared ineligible as the result of technical deficiences in their course pattern. But there is little question that the Index and class rank provide students a better sense of their chances of admission than is the case for students entering via the new ETR category.

Not least, the bright line of eligiblity has served the interests of the university. Whereas the eligibility construct represents an enrollment *ceiling* for the state, it has served UC as an enrollment *floor*. This aspect of the eligiblity construct has been especially useful following recessionary periods in the past when UC sustained state budget shortfalls. By virtue of being able to identify applicants who were demonstrably eligible, the university has often been able later to recoup enrollment funding in instances where sizeable numbers of eligible applicants have been denied admission or, if admitted and enrolled, have not been funded at agreed-upon levels.

Nevertheless, many within the university chafe at the eligiblity construct, often viewing it as a constraint on campus authority over admissions decision-making. The future of eligibility has been a continuing topic of discussion in BOARS' monthly meetings over the last year as the committee, comprised of representatives from each campus, has struggled to cope with the flood of eligible applicants to UC following the 2012 policy changes. At one recent meeting, for example, the committee considered a proposal to give admissions preference for students who meet the new "9 by 9" eligibility requirements over students in the ETR category. The former group is already assured of a "guaranteed offer" via referral to UC Merced, while the ETR group is not, but the proposal would have established an admissions preference for the "9 by 9" group at campuses *other* than Merced. Those who achieve eligiblity by virtue of ranking in the top 9 percent of their high school class are more diverse than the ETR group, while the latter tend to earn better "holistic" scores under campus comprehensive-review procedures:

> Members expressed several concerns about a proposal that campuses admit all applicants with a 9x9 guarantee before turning to the ETR pool to meet an enrollment target. It was noted that campuses that admit large numbers of ETR students have comprehensive review procedures designed to capture students with the best chance of academic success, which often result in higher scores for ETR applicants compared to some applicants with a guarantee. Such a policy would also violate campus autonomy … (BOARS, 2013a: Part II: 4).

In a later discussion on the same topic, "One member suggested unlinking the guarantee from the concept of eligibility or abolishing the guarantee and allowing campuses to define who encompasses the top 12.5% of California high school graduates in the Master Plan based on holistic score" (BOARS, 2013b:4). The minutes of the meeting do not indicate whether this was a serious proposal or was merely offered in the spirit of brainstorming, as faculty committees are prone, but it at least suggests the general tenor of BOARS' thinking about the future of the eligibility construct.

In the spirit of brainstorming, it is useful to consider what might happen if eligibility were eliminated and campuses were allowed "… to define who encompasses the top 12.5% of California high school graduates in the Master Plan based on holistic score." Leaving aside any logistical problems (such as gaining campus agreement on a single holistic score for each applicant), assume for the moment that all UC applicants could be rank-ordered on their holistic scores. How would UC determine how many to admit? The answer may seem obvious at first blush – UC would admit the top 12.5 percent -- but on further reflection it is not. Were the university to admit a number equivalent to 12.5 percent of California high school graduates on the basis of their holistic scores, the state would be justified in claiming that UC was drawing from an overall pool considerably larger than 12.5 percent, since the university had failed to consider students who did not apply and would have had comparable holistic scores had they done so. This is by no means a theoretical problem but has practical implications for UC's state-funded budget.

Carrying the thought experiment further, the most likely consequence of eliminating the eligibility construct would be for the university and the state to negotiate an agreed-upon *participation rate* for determining UC enrollment targets. Historically, the Master Plan's 12.5% eligibility construct has yielded a participation rate of 7.5 to 8.5 percent in most years, so the state and UC might agree to maintain enrollment levels within that same range going forward. Each year UC would admit that number of applicants necessary to yield the agreed-upon participation rate among California high school graduates.

These are uncharted waters, and it is impossible to know whether such an approach would serve the interests of the university as well as the eligibility construct has in the past. But the danger should be evident. Untethered from the Master Plan and lacking any independent academic standard by which to judge the pool of students who qualify for UC, the danger is that enrollment funding could become even more of a political football than it is now.

There may well come a time when UC is forced into a decision about the eligibility construct, but the time is not yet. In the first place, much of the problem is self-inflicted. The 2012 policy changes have boosted the UC eligibility rate far above 12.5 percent, thereby placing great strain on UC's capacity to honor the admissions "guarantee" for all eligible students. At the very least, the university needs to bring the eligibility rate back down to its Master Plan target before making any decisions about the future of the eligibility construct.

Second, projections of future California high school graduates suggest that there may be some breathing room before any final decision need be taken. Demographers at the California Department of Finance project the number of graduates will actually decrease between now and 2017 before resuming growth in the following decade (California Department of Finance, 2013). This will moderate demand and ease the volume of applications to UC in the near to medium term.

Last, the eligibility construct has often proven helpful to UC following recessionary periods in the past when state revenue growth has resumed. Abandoning the construct now, just when California is finally beginning to show signs of recovery from the Great Recession, would seem precisely the wrong time for such a move.

AN ALTERNATIVE PATH FOR GROWTH

The choice whether to maintain or discard the traditional Master Plan construct of eligibility for undergraduate admission is also a choice about the future of the UC system. "To Grow or Not to Grow?" is the titular question posed in a recent essay by John Aubrey Douglass (2013), succinctly framing the fundamental choice now facing the university. There are strongly held views on both sides of the question.

On one hand, a good case can be made for "right sizing" -- restraining growth in undergraduate enrollments to a level commensurate with available resources. The case for right sizing is made with special force by those at UC's most highly selective campuses, where the impulse to preserve and consolidate their hard-earned position of academic excellence is strongest. Advocates of right sizing point out that state funding now accounts for only about 11% of UC's overall $25 billion budget, and that the historic link between state appropriations and undergraduate enrollment has been almost completely severed since 2009. Rather than accept further erosion in student/faculty ratios and other indices of academic quality, they advocate restricting enrollment growth unless and until the state provides a more reliable revenue stream, even if this means breaking with the Master Plan.

Critics of right sizing, on the other hand, argue that if undergraduate enrollments fail to keep pace with population growth in California, UC risks even greater erosion of state support in the future. They note that while state funding may represent only a small share of the university's overall budget, it still accounts for a significant share of core instructional expenditures at UC's undergraduate campuses; most faculty salaries continue to be paid from state general funds. Were the university to break with the Master Plan and restrict enrollment growth while CSU and the California Community Colleges did not, critics fear that UC's share of public postsecondary funding would decline in favor of the other segments. Moreover, UC admissions would become more selective and less representative of the state's demographics, feeding the perception of UC as an "elitist" institution and leading to further erosion of state support. The result, in short, would be even greater "state disinvestment" in UC in the future.

Yet a growth scenario also presents obvious problems. Historically, UC has accommodated enrollment growth either by building new general campuses or expanding existing ones. After Berkeley and UCLA, most of the "newer" UC general campuses were established in the 1950s and 1960s – Riverside (1954), Davis (1959), San Diego (1960), Irvine and Santa Cruz (1964) – in anticipation of Tidal Wave I, the demographic bulge of "baby boomers" that began in the 1960s and peaked in the mid-1970s. Merced is the only new UC general campus in 50 years. For most of the Master Plan era, UC has relied

primarily on expansion of existing campuses to accommodate additional enrollments. The strategy has sufficed until now mainly because growth in the number of California high school graduates moderated after 1975 and remained relatively flat until the mid-1990s.

The arrival of Tidal Wave II has placed increasing strain on the physical capacity of the UC system. From 1996 to 2012, the number of California high school graduates grew from 286,000 to 451,000 -- an even larger increase than Tidal Wave I. That growth has been compounded, moreover, by the general increase in UC participation rates from the 1960s until now, as a greater proportion of the state's graduating high school seniors have sought a place at UC. The upshot is that the UC system is nearing the limits of its physical capacity. Even with the expansion of Merced, UC will soon run out of space on existing campuses to accommodate growth in the number of high school graduates that is projected to resume after 2020. In the normal course of events, therefore, planning for a tenth undergraduate campus would need to commence fairly soon for UC to prepare sufficient space for the next generation of Californians ("Title Wave III"?) who will be reaching college age over the next 20 years.

At a time when the mature campuses have barely begun to recover from the effects of the Great Recession, however, the idea of a new UC general campus is plainly a non-starter. Even if financial support could be secured, the established campuses would justifiably view a new campus as a diversion of resources needed to restore the damage to their academic programs and infrastructure. Nor is a new campus necessarily a good idea from an admissions perspective. As with Merced, the likely outcome would be a reprise of the referral-pool experience, with very low yield rates at the new campus and a declining participation rate for the UC system. This is perhaps the most compelling argument for discarding the eligibility construct and breaking with the Master Plan. Under present circumstances, diverting resources to build another new general campus is a prescription for weak growth and a slow but inexorable decline in academic quality across the university as a whole.

But there are alternatives to the growth pattern that UC has followed in the past. The need now is to restore resources at mature campuses where the threat to academic quality has been greatest. Given that those campuses are at their physical capacity, an alternative that suggests itself is a model followed in several other states: creation of *two-year university branch campuses.*

At least 18 states have established two-year university branches as part of their higher education systems.[19] Under this model, two-year campuses operate as lower-division satellites of state universities. The model is superficially similar to a traditional community college insofar as instruction is offered exclusively at the lower-division level, but it differs in three crucial respects: (1) admissions requirements are the same as for freshmen at the parent campus; (2) instruction is fully equivalent to that at the parent campus, and branch faculty are members of the university faculty (at Ohio State, for example, branch faculty are tenured and considered part of the main campus departments at Columbus); and (3) students transition from the branch to the parent campus without the need for a transfer-admissions process. At Penn State, as another example, students can complete lower-division work in over 160 baccalaureate majors at 14 branch campuses located throughout the state. Students then transition to the main campus at University Park to complete their major, a process known as "change of assignment" since transfer, in the traditional sense, is eliminated (Pennsylvania State University, 2014).

The University of California would do well to consider such a model as an alternative path for enrollment and resource growth.[20] Creation of two-year branches at high-demand campuses would enable UC to continue to grow with the population of California while at the same time focusing new resources where the damage to academic programs and infrastructure has been most severe. Infusion of new funding for enrollment growth could provide a welcome lift at campuses that have not seen significant increases in workload funding in some time.

Two-year university branches are also a low-cost option. Lower-division instruction is less expensive than upper-division and graduate-level instruction, so that accommodating enrollment growth by means of the two-year branch model would be far less costly than building a new UC general campus.[21] Costs could also be contained through judicious use of information

[19] The National Center for Educational Statistics stopped collecting separate branch campus statistics in 1986, so that precise data are unavailable. Part of the problem is defining precisely what is meant by a "branch" campus, which may include 4-year as well as 2-year institutions. Under any definition, though, it is clear that expansion of branch campuses in the U.S. has been considerable (Schuman, 2009).
[20] The two-year university branch model has also been suggested by former UC provost C. Judson King (2006) and UC president emeritus Richard C. Atkinson (Geiser & Atkinson, 2013).
[21] Expansion of lower-division enrollments at branch campuses also implies changes in the ratio of lower- to upper-division enrollments at the parent campus in order to accommodate additional students at the upper-division level. But the parent campus need not become

technology. The branch model is well suited for distance learning as well as electronic access to library facilities and administrative services at the parent campus (Fonseca & Bird, 2007).

Finally, from an admissions perspective, the branch model would enable UC to expand capacity at highly selective campuses where student demand is greatest. Rather than repeat the referral-pool experience, a greater proportion of applicants could be admitted at their first-choice campus, the number of "no shows" reduced, and UC participation rates among California high school graduates might return to, and perhaps even exceed, their historical norm. From a variety of perspectives, then, creation of lower-division branches at high-demand campuses makes sense as a strategy for accommodating future enrollment growth while preserving and enhancing academic quality.[22] Growth need not be the enemy but the ally of quality, as amply demonstrated throughout most of the Master Plan era.

The university has been profoundly shaken by the events of the past five years. The funding model that has sustained it through most of the first 50 years of the Master Plan is broken, and a new model is needed if UC and the State of California are to renew their "social contract" for the 21st century.

In seeking a new funding model, however, the original Master Plan concept of *eligibility* for UC remains as relevant today as it was in 1960 as a foundation upon which to rebuild. Though some have called for amending the Master Plan,[23] there are dangers to such a renegotiation – one may end up with something worse. If the university is to continue to grow, the traditional eligibility construct provides an essential platform for UC to keep pace with California's population and, as the state's economy also resumes growth, to expand its state-revenue base in the future. Tradition has its uses, and the university would be wise to leverage that tradition going forward.

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exclusively upper-division, and other state universities that have implemented this model have maintained robust lower-division programs at their flagship campuses.

[22] There are also a number of variations of the branch model that are worth exploring. Another option would be to convert some of California's community colleges into UC or CSU branches, which could be more cost-effective than building new branch campuses from scratch. While cost-effective, however, it would also be administratively and politically difficult, since the three segments operate under different authority structures and funding models. Still another option is the "university center" model, adopted in about 20 other states. Under this model, universities and community colleges collaborate to offer upper-division coursework at 2-year campuses, enabling students to complete all or most of their 4-year degree program there. The model is superficially similar to the so-called "community college baccalaureate" but differs insofar as the senior institution actually awards the degree. These and other "hybrid" models involving collaborative arrangements between 4-year and 2-year campuses have become increasingly common in other states over the past two decades. For an extended discussion, see Geiser & Atkinson (2013).

[23] In a well-regarded paper, Hans Johnson of the Public Policy Institute of California recently has made a strong case for amending the Master Plan to increase eligibility targets for both UC and CSU by 20 percent as a way to expand the number of high school graduates who enter 4-year universities directly from high school and thereby improve California's poor record of college completion (Johnson, 2010). Yet it is possible to achieve the same goal – improving UC and CSU *participation rates* – without necessarily altering eligibility targets or amending the Master Plan. The university branch model described here would require no alteration of the Master Plan.

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APPENDIX 1: SUPPORTING DATA FOR GRAPHICS

Supporting Data for Figure 1

Number of Applicants

	Admitted and Enrolled	No Shows	Not Admitted
1994	21,443	15,032	6,914
1995	21,999	16,177	7,538
1996	23,188	16,847	8,550
1997	23,681	16,744	8,605
1998	24,876	17,866	9,559
1999	25,970	19,047	10,385
2000	26,825	19,699	9,785
2001	28,704	22,305	8,738
2002	29,916	23,770	9,217
2003	30,349	26,868	9,557
2004	27,973	21,524	14,355
2005	30,083	26,422	9,346
2006	33,540	28,674	8,797
2007	33,577	31,511	9,421
2008	34,481	34,770	10,778
2009	32,468	36,637	12,008
2010	31,897	37,636	12,808
2011	32,114	28,819	24,254
2012	33,065	29,462	30,933

Source: Annual UCOP applicant-flow reports.

Supporting Data for Figure 2

Admit Rates

	UC System	Tier 1: UCB, LA, SD	Tier 2: UCI, SB, D	Tier 3: UCSC, R, M
1994	84.1%	58.5%	81.8%	83.4%
1995	83.5%	54.1%	81.0%	84.4%
1996	82.4%	48.3%	79.4%	83.6%
1997	82.4%	48.6%	75.6%	86.1%
1998	81.7%	44.0%	70.5%	82.5%
1999	81.3%	40.3%	66.1%	84.6%
2000	82.6%	39.1%	64.2%	86.6%
2001	85.4%	41.7%	65.8%	87.0%
2002	85.3%	39.8%	65.1%	85.1%
2003	85.7%	35.5%	62.1%	85.8%
2004	77.5%	36.6%	62.1%	72.2%
2005	85.8%	38.7%	65.2%	84.6%
2006	87.6%	39.2%	67.8%	87.9%
2007	87.4%	36.7%	63.4%	89.0%
2008	86.5%	34.0%	57.2%	87.1%
2009	85.2%	32.0%	54.0%	86.3%
2010	84.4%	31.0%	51.9%	84.4%
2011	71.5%	28.6%	50.7%	75.6%

Source: Sample database on CA resident freshman applicants, 1994 to 2011.

Supporting Data for Figure 5

Number of Applicants

	High Flyers	Upstreamers	Downstreamers	Mid Flyers	Cascaders	Low Flyers
1994	4,840	14,932	7,840	5,574	1,957	1,332
1995	5,050	14,337	9,324	5,615	2,475	1,375
1996	5,256	13,663	11,848	4,855	3,100	1,313
1997	5,162	13,982	10,986	4,630	4,337	1,328
1998	5,106	13,581	12,616	4,084	6,080	1,275
1999	4,359	13,772	12,968	3,777	8,851	1,290
2000	3,413	14,689	12,974	3,558	10,570	1,320
2001	3,137	17,267	13,552	3,735	11,875	1,443
2002	2,960	17,816	14,717	3,542	13,289	1,362
2003	2,489	17,112	16,464	3,398	16,446	1,308
2004	2,265	17,095	15,545	3,261	10,291	1,040
2005	2,437	18,173	15,646	4,027	14,860	1,362
2006	2,403	20,448	17,931	4,339	15,623	1,470
2007	2,466	19,890	18,117	3,856	19,109	1,650
2008	2,197	19,886	18,053	3,646	23,991	1,478
2009	2,033	18,612	17,190	3,603	25,927	1,740
2010	1,921	18,391	17,049	3,363	27,211	1,598
2011	1,967	17,727	18,112	3,574	18,229	1,324

Source: Sample database on CA resident freshman applicants, 1994 to 2011.

Supporting Data for Figure 6

All New Freshmen

	High Flyers	UpStreamers	DownStreamers	Mid Flyers	Cascaders	Low Flyers
1994	10.4%	47.7%	21.0%	13.7%	3.9%	3.3%
1995	10.4%	44.3%	24.5%	13.1%	4.6%	3.1%
1996	10.7%	40.6%	29.5%	10.9%	5.4%	3.0%
1997	10.3%	40.8%	27.2%	10.6%	8.0%	3.1%
1998	9.9%	39.1%	29.3%	8.7%	10.1%	2.9%
1999	8.1%	38.3%	31.1%	8.3%	11.6%	2.6%
2000	6.1%	39.3%	30.0%	7.8%	14.1%	2.7%
2001	4.9%	42.7%	28.8%	7.4%	13.4%	2.8%
2002	4.7%	41.6%	30.2%	6.5%	14.4%	2.6%
2003	3.7%	39.1%	32.5%	6.2%	16.3%	2.3%
2004	3.5%	41.2%	31.9%	6.0%	15.5%	2.0%
2005	3.7%	41.3%	31.3%	7.4%	14.4%	2.0%
2006	3.3%	41.6%	32.2%	7.0%	13.8%	2.0%
2007	3.3%	39.8%	32.1%	6.1%	16.5%	2.1%
2008	2.8%	38.9%	30.8%	5.6%	20.1%	1.8%
2009	3.0%	38.4%	30.4%	6.1%	20.3%	1.9%
2010	2.7%	37.0%	30.3%	5.5%	22.7%	1.8%
2011	2.7%	36.7%	32.3%	5.5%	21.2%	1.6%

New Underrepresented Minority Freshmen

	High Flyers	UpStreamers	DownStreamers	Mid Flyers	Cascaders	Low Flyers
1994	14.5%	49.1%	13.2%	14.4%	4.5%	4.4%
1995	12.0%	47.9%	17.1%	12.9%	6.6%	3.5%
1996	13.2%	46.5%	18.6%	11.4%	6.6%	3.6%
1997	11.9%	44.8%	20.8%	11.7%	6.7%	4.2%
1998	8.8%	31.1%	32.1%	9.3%	14.2%	4.5%
1999	8.0%	32.5%	30.0%	9.4%	15.7%	4.4%
2000	5.3%	35.3%	28.3%	8.2%	18.7%	4.2%
2001	4.0%	35.8%	31.1%	7.5%	17.6%	3.9%
2002	4.0%	37.9%	28.6%	5.8%	19.8%	3.9%
2003	2.8%	35.5%	29.6%	6.8%	22.0%	3.3%
2004	3.5%	34.9%	32.5%	6.6%	19.7%	2.8%
2005	3.2%	35.4%	29.7%	8.4%	19.7%	3.6%
2006	2.7%	33.4%	31.5%	8.0%	20.8%	3.6%
2007	2.8%	32.5%	31.7%	7.4%	21.9%	3.7%
2008	2.2%	31.1%	30.3%	6.6%	26.6%	3.1%
2009	2.0%	30.5%	29.3%	6.8%	27.8%	3.7%
2010	1.9%	28.7%	28.5%	6.4%	31.5%	3.0%
2011	2.0%	30.7%	29.4%	6.6%	28.7%	2.6%

Source: Sample database on CA resident freshmen applicants, 1994 to 2011.
Note: Underrepresented minorities include only Black and Latino freshmen.

Supporting Data for Figure 7

Percent of Applicants

	Cascaders	Not Admitted
1994	4.5%	15.9%
1995	5.4%	16.5%
1996	6.4%	17.6%
1997	8.8%	17.6%
1998	11.6%	18.3%
1999	16.0%	18.7%
2000	18.8%	17.4%
2001	19.9%	14.6%
2002	21.1%	14.7%
2003	24.6%	14.3%
2004	16.1%	22.5%
2005	22.6%	14.2%
2006	22.0%	12.4%
2007	25.6%	12.6%
2008	30.0%	13.5%
2009	32.0%	14.8%
2010	33.0%	15.6%
2011	21.4%	28.5%

Top Applicants Not Admitted

	Number	% of Apps
1994	324	2.3%
1995	383	2.6%
1996	507	3.2%
1997	600	3.7%
1998	560	3.3%
1999	607	3.4%
2000	498	2.7%
2001	533	2.4%
2002	614	2.6%
2003	743	3.0%
2004	1,004	4.1%
2005	711	2.8%
2006	661	2.4%
2007	618	2.2%
2008	531	1.8%
2009	643	2.1%
2010	579	1.9%
2011	2,113	6.6%

Source: Sample database on CA resident freshman applicants, 1994 to 2011.

Supporting Data for Figure 8

Number of Applicants

	No Shows	Admitted and Enrolled
1994	15,032	21,443
1995	16,177	21,999
1996	16,847	23,188
1997	16,744	23,681
1998	17,866	24,876
1999	19,047	25,970
2000	19,699	26,825
2001	22,305	28,704
2002	23,770	29,916
2003	26,868	30,349
2004	21,524	27,973
2005	26,422	30,083
2006	28,674	33,540
2007	31,511	33,577
2008	34,770	34,481
2009	36,637	32,468
2010	37,636	31,897
2011	28,819	32,114
2012	29,462	33,065

Source: UCOP Applicant Flow Reports, 1994 to 2012.

Number of No Shows

	High Flyers	Upstreamers	Downstreamers	Mid Flyers	Cascaders	Low Flyers
1994	2,610	4,696	3,331	2,642	1,120	633
1995	2,769	4,589	3,936	2,726	1,469	688
1996	2,777	4,253	5,015	2,334	1,849	619
1997	2,727	4,309	4,552	2,122	2,451	583
1998	2,648	3,853	5,322	1,915	3,576	552
1999	2,260	3,816	4,904	1,620	5,841	606
2000	1,776	4,154	4,914	1,477	6,778	600
2001	1,725	5,023	5,275	1,608	8,022	652
2002	1,565	5,363	5,695	1,601	8,968	578
2003	1,369	5,249	6,610	1,519	11,505	616
2004	1,272	5,580	6,634	1,575	5,969	494
2005	1,335	5,753	6,223	1,811	10,541	759
2006	1,286	6,498	7,118	1,997	10,991	784
2007	1,352	6,512	7,328	1,822	13,554	943
2008	1,227	6,485	7,420	1,714	17,068	856
2009	1,071	6,138	7,322	1,630	19,344	1,132
2010	1,059	6,594	7,369	1,595	19,986	1,033
2011	1,103	5,955	7,742	1,811	11,409	799

Source: Sample database on CA resident freshman applicants, 1994 to 2011.

Supporting Data for Figure 9

Yield Rates

	Non-URM Admits	Non-URM Enrollees	Non-URM Yield Rate	URM Admits	URM Enrollees	URM Yield Rate
1994	29,175	17,150	58.8%	7,300	4,293	58.8%
1995	30,443	17,622	57.9%	7,733	4,377	56.6%
1996	32,661	19,091	58.5%	7,374	4,097	55.6%
1997	33,129	19,633	59.3%	7,296	4,048	55.5%
1998	35,871	21,189	59.1%	6,871	3,687	53.7%
1999	37,701	21,981	58.3%	7,316	3,989	54.5%
2000	38,590	22,514	58.3%	7,934	4,311	54.3%
2001	41,841	23,984	57.3%	9,168	4,720	51.5%
2002	43,718	24,758	56.6%	9,968	5,158	51.7%
2003	46,118	24,916	54.0%	11,099	5,433	49.0%
2004	39,800	22,971	57.7%	9,697	5,002	51.6%
2005	44,886	24,522	54.6%	11,619	5,561	47.9%
2006	48,690	26,987	55.4%	13,524	6,553	48.5%
2007	50,234	26,459	52.7%	14,854	7,118	47.9%
2008	52,117	26,478	50.8%	17,134	8,003	46.7%
2009	51,180	24,658	48.2%	17,925	7,810	43.6%
2010	50,579	23,566	46.6%	18,954	8,331	44.0%
2011	42,475	22,575	53.1%	18,458	9,539	51.7%

No Shows

	Total	URM	URM %
1994	15,032	3,007	20.0%
1995	16,177	3,356	20.7%
1996	16,847	3,277	19.5%
1997	16,744	3,248	19.4%
1998	17,866	3,184	17.8%
1999	19,047	3,327	17.5%
2000	19,699	3,623	18.4%
2001	22,305	4,448	19.9%
2002	23,770	4,810	20.2%
2003	26,868	5,666	21.1%
2004	21,524	4,695	21.8%
2005	26,422	6,058	22.9%
2006	28,674	6,971	24.3%
2007	31,511	7,736	24.6%
2008	34,770	9,131	26.3%
2009	36,637	10,115	27.6%
2010	37,636	10,623	28.2%
2011	28,819	8,919	30.9%
2012	29,462	9,575	32.5%

Source: Annual UCOP applicant-flow reports.
Note: URM category includes only Black and Latino admits and enrollees.

Supporting Data for Figure 11

Yield Rates for Admits in Top, Middle, and Bottom of App Pool

	Top Third	Middle Third	Bottom Third
1994	44.2%	39.4%	38.9%
1995	45.4%	39.9%	40.9%
1996	43.6%	39.3%	43.8%
1997	42.5%	38.9%	42.9%
1998	40.9%	40.8%	44.4%
1999	40.8%	41.7%	45.3%
2000	40.0%	42.0%	45.9%
2001	40.5%	43.0%	49.5%
2002	42.3%	42.9%	49.4%
2003	43.3%	46.1%	53.6%
2004	44.1%	42.4%	44.1%
2005	43.5%	44.7%	54.6%
2006	42.8%	44.0%	53.4%
2007	44.4%	47.2%	55.5%
2008	44.9%	49.8%	58.2%
2009	46.1%	54.0%	61.9%
2010	48.7%	54.6%	61.8%
2011	46.7%	44.9%	52.3%

Source: Sample database for CA resident freshmen applicants, 1994 to 2011.

Supporting Data for Figure 13

	Public HS Grads	Private HS Grads	Total HS Grads	CA Resident Admits	Resident Admit Rate	CA Resident Freshmen	Participation Rate
1994	253,083	24,301	277,384	36,475	13.1%	22,156	8.0%
1995	260,474	25,152	285,626	38,176	13.4%	23,055	8.1%
1996	259,071	26,998	286,069	40,035	14.0%	23,188	8.1%
1997	269,071	27,209	296,280	40,425	13.6%	23,681	8.0%
1998	282,897	28,835	311,732	42,742	13.7%	24,876	8.0%
1999	299,221	29,388	328,609	45,017	13.7%	25,970	7.9%
2000	309,866	30,596	340,462	46,524	13.7%	26,825	7.9%
2001	316,124	28,093	344,217	51,009	14.8%	28,704	8.3%
2002	325,895	30,694	356,589	53,686	15.1%	29,916	8.4%
2003	341,078	32,084	373,162	57,217	15.3%	30,349	8.1%
2004	343,481	32,459	375,940	49,497	13.2%	27,973	7.4%
2005	355,217	32,474	387,691	56,505	14.6%	30,083	7.8%
2006	349,114	33,376	382,490	62,214	16.3%	33,540	8.8%
2007	356,641	32,561	389,202	65,088	16.7%	33,577	8.6%
2008	376,393	33,755	410,148	69,251	16.9%	34,481	8.4%
2009	382,950	32,765	415,715	69,105	16.6%	32,468	7.8%
2010	405,087	35,366	440,453	69,533	15.8%	31,897	7.2%
2011	410,476	32,682	443,158	60,933	13.7%	32,114	7.2%
2012	418,598	32,098	450,696	62,527	13.9%	33,065	7.3%

Source: CA Department of Finance (for CA public HS grads); CPEC (for CA private HS grads from 1994 to 2009);
Western Interstate Commission on Higher Education (for CA private HS grads from 2010 to 2012);
and annual UCOP applicant-flow reports (for CA resident freshman admits and enrollments).

APPENDIX 2

STATA documentation for out-of-sample prediction of probability of 6-year graduation for “no shows”:

```
. ** Calculate 6-year graduation rate for all UC admits who matriculated between 1994 and 2005
.
. summarize  hasgrad600 if show==1 & yearapply<=2005

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
  hasgrad600 |    311571    .8093597    .3928067          0          1



. ** For matriculants, regress 6-year graduation on HSGPA, SAT/ACT scores, year applied, and
campus admitted
.
. logit  hasgrad600  hsgpa_calc  satc_aaa  yearapply appadm1 appadm2 appadm3 if show==1 &
yearapply<=2005

Iteration 0:   log likelihood = -150391.98
Iteration 1:   log likelihood = -141750.47
Iteration 2:   log likelihood = -141428.37
Iteration 3:   log likelihood = -141427.92
Iteration 4:   log likelihood = -141427.92

Logistic regression                               Number of obs   =     309391
                                                  LR chi2(6)      =   17928.13
                                                  Prob > chi2     =     0.0000
Log likelihood = -141427.92                       Pseudo R2       =     0.0596

------------------------------------------------------------------------------
  hasgrad600 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  hsgpa_calc |   1.092075   .0146022    74.79   0.000     1.063455    1.120695
    satc_aaa |   .0012181    .000032    38.06   0.000     .0011554    .0012808
   yearapply |   .0289898   .0014232    20.37   0.000     .0262004    .0317792
     appadm1 |   .1595214   .0120547    13.23   0.000     .1358946    .1831481
     appadm2 |   .2083992   .0112647    18.50   0.000     .1863207    .2304777
     appadm3 |   .0015851   .0106186     0.15   0.881    -.0192269    .0223971
       _cons |  -62.19979   2.835773   -21.93   0.000    -67.75781   -56.64178
------------------------------------------------------------------------------


.
. ** Predict probability of 6-year graduation for no-shows using observed coefficients for
shows
.
. predict xb if noshow==1 & yearapply<=2005
(option p assumed; Pr(hasgrad600))
(904134 missing values generated)



. ** Summarize predicted probability of 6-year graduation for no-shows
.
. summarize xb if noshow==1 & yearapply<=2005

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          xb |    239913    .7979043    .0997912   .2345855   .9627651
```