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A Student Experience in the Research University (SERU) Project Research Paper*

**The Poor and the Rich:
A Look at Economic Stratification and Academic Performance Among
Undergraduate Students in the United States**

October 2008

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ABSTRACT

A number of national studies point to a trend in which highly selective and elite private and public universities are becoming less accessible to lower-income students. At the same time there have been surprisingly few studies of the actual characteristics and academic experiences of low-income students or comparisons of their undergraduate experience with those of more wealthy students. This paper explores the divide between poor and rich students, first comparing a group of selective US institutions and their number and percentage of Pell Grant recipients and then, using institutional data and results from the University of California Undergraduate Experience Survey (UCUES), presenting an analysis of the high percentage of low-income undergraduate students within the University of California system — who they are, their academic performance and quality of their undergraduate experience. Among our conclusions: The University of California has a strikingly higher number of low-income students when compared to a sample group of twenty-four other selective public and private universities and colleges, including the Ivy Leagues and a sub-group of other California institutions such as Stanford and the University of Southern California. Indeed, the UC campuses of Berkeley, Davis, and UCLA each have more Pell Grant students than all of the eight Ivy League institutions combined. However, one out of three Pell Grant recipients at UC have at least one parent with a four-year college degree, calling into question the assumption that “low-income” and “first-generation” are interchangeable groups of students. Low-income students, and in particular Pell Grant recipients, at UC have only slightly lower GPAs than their more wealthy counterparts in both math, science and engineering, and in humanities and social science fields. Contrary to some previous research, we find that low-income students have generally the same academic and social satisfaction levels; and are similar in their sense of belonging within their campus communities. However, there are some intriguing results across UC campuses, with low-income students somewhat less satisfied at those campuses where there are more affluent student bodies and where lower-income students have a smaller presence.

An imbalance between rich and poor is the oldest and most fatal ailment of all republics — Plutarch

There has been a growing and renewed concern among scholars of higher education and policymakers about increasing socioeconomic disparities in American society. Not surprisingly, these disparities are increasingly reflected

* The SERU Project is a collaborative study based at the Center for Studies in Higher Education at UC Berkeley and focused on developing new types of data and innovative policy relevant scholarly analyses on the academic and civic experience of students at major research universities. For further information on the project, see <http://cshe.berkeley.edu/research/seru/>

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in the enrollment of students in the nation's cadre of highly selective, elite private universities, and increasingly among public universities. Particularly over the past three decades, "brand name" prestige private universities and colleges have moved to a *high tuition fee and high financial aid model*, with the concept that a significant portion of generated tuition revenue can be redirected toward financial aid for either low-income or merit-based scholarships. With rising costs, declining subsidization by state governments, and the shift of federal financial aid toward loans versus grants in aid, public universities are moving a low fee model toward what is best called a *moderate fee and high financial aid model*— a model that is essentially evolving.

There is increasing evidence, however, that neither the private nor the evolving public tuition and financial aid model is working. Students from wealthy families congregate at the most prestigious private and public institutions, with significant variance depending on the state and region of the nation, reflecting the quality and composition of state systems of higher education. A 2004 study by Sandy Astin and Leticia Oseguera looked at a number of selective private and public universities and concluded that the number and percentage of low-income and middle-income families had declined while the number from wealthy families increased. "American higher education, in other words, is more socioeconomically stratified today than at any other time during the past three decades," they note. One reason, they speculated, may be "the increasing competitiveness among prospective college students for admission to the country's most selective colleges and universities" (Astin and Oseguera 2004).

A more recent study by Danette Gerald and Kati Haycock (2006) looked at the socioeconomic status (SES) of undergraduate students at a selective group of fifty "premier" public universities and had a similar conclusion – but one more alarming because of the important historical mission of public universities to provide broad access, a formal mandate or social contract. Though more open to students from low-income families than their private counterparts, the premier publics had declined in the percentage of students with federally funded Pell Grants (federal grants to students generally with family incomes below \$40,000 annually) when compared to other four-year public institutions in the nation. Ranging from \$431 to a maximum of \$4,731, Pell Grants, and the criteria for selection of recipients, has long served as a benchmark on SES access. Pell Grant students have, on average, a family income of only \$19,300. On average, note Gerald and Haycock, the selected premier publics have some 22% of their enrolled undergraduates with Pell Grants; all public four-year institutions have some 31% with Pell Grants; private institutions have an average of around 14% (Gerald and Haycock 2006).

But it is important to note that there are a great many dimensions in understanding equity and access among private and public higher education institutions (HEIs). For one, there is a need to disaggregate types of institutions, for example, private versus public, university versus community college. Public and private institutions, and particularly highly selective universities and colleges, tend to draw from different demographic pools, with public universities largely linked to the socioeconomic stratification of their home state.

Second, there are the factors related to rising tuition and increasingly complicated and, one might argue, inadequate approaches to financial aid in the U.S. With the slow down in the US economy, the US Department of Education recently estimated that demand for Pell Grants was exceeded projected demand by some 800,000 students; total applications for the grant program are up 16 percent over the previous year. This will require an additional \$6 billion to the Pell Grant's current budget of \$14 billion next year.¹ Economic downturns tend to push demand up for access to higher education among the middle and lower class, although most profoundly at the community college level. This phenomenon plus continued growth in the nation's population, and in particularly in states such as California, Texas and Florida, means an inadequate financial aid system, where the maximum Pell Grant award has remained largely the same for the last decade when adjusted for inflation, will be further eroded. But in light of the uncertainty in the economy and the lack of resolve at the federal level to support higher education, it is not clear the US government will fund the increased demand – it may cut the maximum award.

And third, there are larger social trends, such as increased disparities in income and the erosion of public services, declines in the quality of many public schools, the stagnation and real declines for some socioeconomic groups in high school graduation rates; and the large increase in the number of part-time students, most of whom must work to stay financially solvent.

This paper examines low-income, and upper income, student access to the University of California and how low-income access compares with a group of elite privates (specifically Ivy League institutions) and selective publics. Using data from the University of California's Undergraduate Experience Survey (UCUES) and institutional data, we discuss what makes UC similar and different in the SES and demographic mix of students. Because the maximum Pell Grant is under \$5,000, the cost of tuition alone is higher in the publics, and much higher in our group of selective privates, the percentage and number of Pell Grant students at an institution provides evidence of its resolve, creativity, and financial commitment to admit and enroll working and middle-class students.

We then analyze the undergraduate experience of our designation of *poor* students (defined for this analysis as Pell Grant recipients) and *rich* students (from high-income families, defined as those with household incomes above \$125,000 and no need-based aid).² While including other income groups, we use these contrasting categories of wealth to observe differences in the background of students, their choice of major, general levels of satisfaction, academic performance, and sense of belonging at the university. There is very little analytical work on the characteristics and perceptions of low-income/Pell Grant students, and an assumption, for example, that they are mostly first-generation college students with difficulties in assimilation into the larger, and more wealthy, student body at the institution to which they have matriculated (Richardson and Skinner 1992; Engle, Bermeo, and O'Brien 2006). Finally, we ponder the future for lower-income students at these highly selective institutions that are, in essence, growing more.

1. Comparing UC With Other Selective Universities

For middle and lower-income students, public institutions remain the primary entry point to higher education. And although selective or "brand-name" private institutions are working to expand access to low-income and other disadvantaged groups, offering increasingly generous financial aid packages and now tuition discounts to offset their considerably higher tuition rates when compared to the publics, as noted, there is evidence of continued actual decline in enrollment by these lower-disadvantaged and middle income students over the past decade.³ Public institutions remain the most viable path upward, thus far, and understanding that the forces of privatization within the publics (largely to gain additional financial resources, including raising tuition and fees) may diminish their key role in promoting access and equity.

Previous studies on the trends related to SES, along with race and ethnicity, in America's selective institutions have tended to lump public and private institutions. As noted, however, there is a real need to disaggregate — by public and private, by state, even in many cases by region — to gain a fuller understanding of the changing landscape of this major institution. As part of a larger public system of higher education, attempting to meet its social contract within the largest state in the Union with perhaps the greatest demographic mix in the nation, including the largest number of actual and recent immigrants, the University of California system offers a case example to more fully analyze both issues related to access and, using UCUES, students' actual experience.

For an initial analysis of the different patterns of access and enrollment of lower-income students, we offer data on the eight undergraduate campuses of the University of California (hence, not including the new UC Merced campus which was just beginning to enroll students or the graduate and professional degree programs at the UC San Francisco campus). We also offer data from the eight Ivy League campuses; nine private universities and colleges, including seven in California to help examine regional versus national effects; and, finally, a sample of six major public universities.

Sample Group of Universities

University of California UG (8)

Berkeley
Davis
Irvine
Los Angeles
San Diego
Santa Barbara
Riverside
Santa Cruz

US Private – Ivy (8)

Brown University
Columbia University
Cornell-Endowed
Dartmouth University
Harvard University
Princeton University
University of Pennsylvania
Yale University

US/California Private (10)

CalTech
Claremont McKenna College
Harvey Mudd College
MIT
Pitzer College
Pomona College
Stanford University
University of Southern California
University of Chicago
Washington University

US Public (6)

University of Texas
University of Illinois
University of Michigan
University of North Carolina
University of Virginia
University of Wisconsin

Figure 1.
Number of Pell Grant Student Enrollment at 32 Public and Private Selective Universities and Colleges: 2006

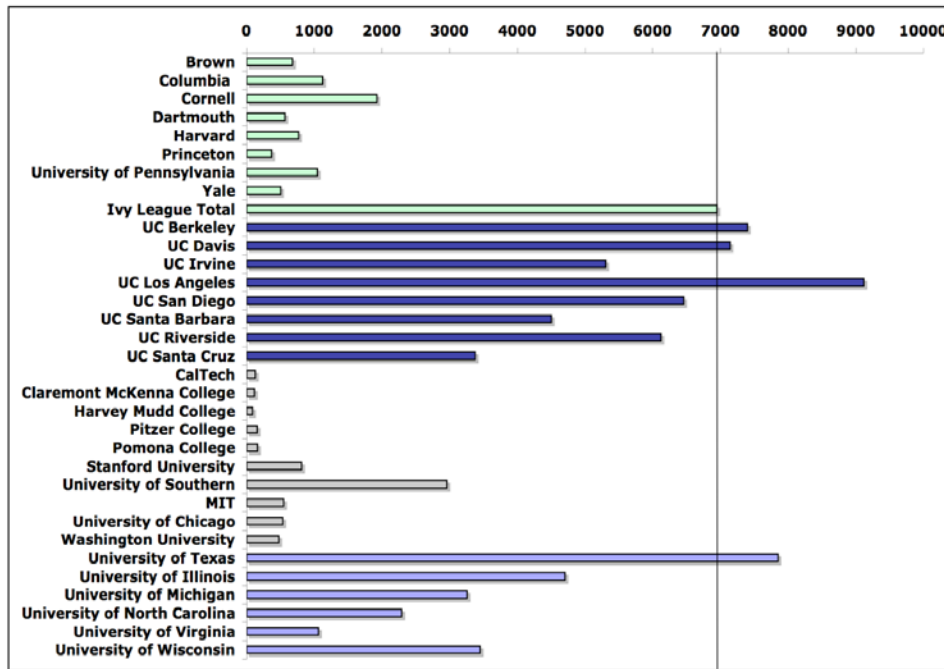
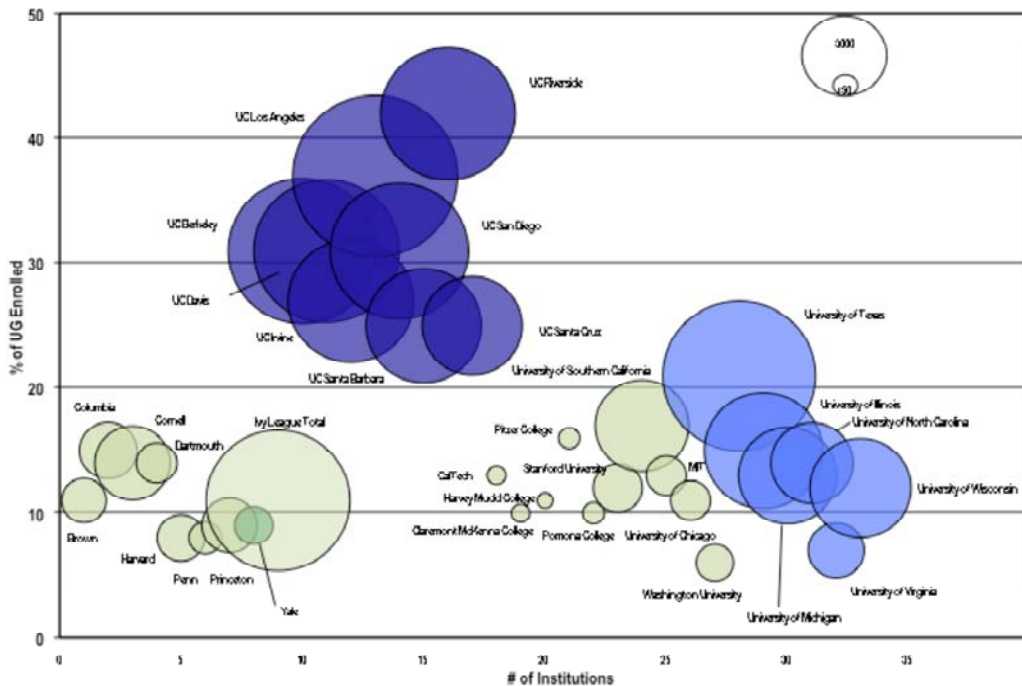


Figure 2.
Percentage and Number of Pell Grant Student Enrollment at 32 Public and Private Selective Universities and Colleges: 2006



As shown in Figure 1 and 2 (the same data, one showing actual numbers of enrolled Pell students, the other arraying these numbers by percent of all enrolled students), each UC campuses has a significant number of Pell Grant (PG) students in 2005-06. In total, the eight UC campuses enrolled over 49,000 PG students, or 30.5% of all undergraduate students. In comparison, the Ivy League institutions enrolled some 6,946 PG students. Important here

is the scale of UC's enrollment – there are nearly 172,000 undergraduates (counting UC Merced) enrolled in 2006. As the state of California grows in population, UC will continue to grow as part of its mandate to accept all students who are in the top 12.5 percent of the state's high school graduating class (around 7.6 percent actually enroll).

But there remains a stark difference between a relatively highly selective University of California (with UCLA, Berkeley, and San Diego being the most selective, and similar in the percentage of students accepted with most of the privates in our sample group) and the Ivy League institutions. On average, PG students represent only 11% of all undergraduate enrollment the Ivy League in 2006, with the highest percentage at Columbia (15%), Cornell (14%, a quasi-private and public institution), and Dartmouth (14%), and the lowest at Harvard and Princeton (both at 8%). Indeed, the Berkeley campus alone exceeds the number of PG students enrolled in the entire Ivy League.

Both UCLA, with the largest number of PG students and representing the largest campus in the UC system, and UC Davis also each enroll on their campuses more Pell Grant students than all of the Ivies. The difference in scale is significant: For example, Harvard had only 636 Pell Grant recipients in 2000-01 and grew to only 763 in 2005-06, despite a large publicity campaign to encourage more low-income students to apply for admission; Princeton, which was the first private to announce it would not charge tuition to low-income students, grew at an anemic pace: 321 in 2000-01, 367 in 2005-06, 415 in 2007 -- with a possible decline in 2008. (Postsecondary Ed Opportunity 2007)

How to explain this large difference in access rates, at least as defined by Pell Grant recipients? We offer three interrelated reasons that relate to culture, price sensitivity, and demographic pools.

1a. Culture and Social Caste Perceptions:

There are the major differences in the socioeconomic classes that have traditionally gone to this group of selective privates versus the much more egalitarian, public purpose-driven nature of the University of California — although with many caveats and limitations, as will be described. Both private and public institutions project an aura, both real and imagined, for lower-income and wealthy students alike regarding the institutions' socioeconomic environment and role in society.

Privates add to this mightily, which influences the SES composition of their student body, by retaining "legacy" admissions status: for example, approximately 20% of those admitted to Harvard are the relatives of alumni or of those who have given financial donations to the institution. Legacy admission has existed, and apparently still does, at some selective publics, but probably on a miniscule scale; the University of California has a formal policy against it, and practiced it marginally over its history (Douglass 2007).

Although there is a real lack of information on the perceptions of low-income students at major elite private universities and colleges, and some publics, we suspect that lower income students, irrespective of racial or ethnic background, sense that they do not belong in institutions that are predominantly populated by upper-income students. There is also, we think, a strong pattern among many racial and ethnic groups, particularly recent immigrants with relatively high social capital (a knowledge of how to navigate society and bureaucracies) to find paths to low-cost, high-quality and, in the case of some public universities, high-prestige public resources.

We suspect that there is substantial gaming going on by families with high social capital to not only get their children into low-cost and high-prestige public universities, but to also qualify for low-income grants and loans. There are no good studies on this possible phenomenon, only anecdotal evidence of families, poor, rich, and middle class, seeking to shift liquid assets to gain maximum access to subsidized financial aid resources. This may have a marginal influence on the number of Pell Grant students at UC, for example; but we don't know for sure. Institutions also create financial aid offices that are skilled at matching low-income students to subsidized and non-institutionally-derived financial aid.

1b. Costs Real and Perceived:

There remain significant differences in tuition and related costs between virtually all selective public universities and their private counterparts. The Ivy League institutions, and most selective private institutions, have an entrance price of, on average, \$32,000 in 2007-08; UC's tuition and fees at Berkeley, and approximately for all

the undergraduate campuses, was \$6,650 for in-state students. As a marker of the forces of privatization, in 2007 Berkeley charged \$25,300 for out-of-state and international students – but they represent only about 5% of all undergraduate enrollment.

Price sensitivity remains, we suspect, very high among most low- and even middle-income students and their families. Private institutions do offer substantial tuition breaks, largely via grants and scholarships to lower-income students. The tuition rate, or sticker price, is not what a low-income, PG-eligible student will ultimately pay to enroll (leaving out the additional costs of room and board and other expenses). But such a high price at the privates, and escalating prices at the publics, do create a perceived barrier to lower-income and disadvantaged groups, and the process of applying for federal grants and institutional grants-in-aid and discounts is formidable – a subject that the Obama campaign for the presidency says must be addressed in the next presidential administration.

Reacting to perceived price sensitivity, and following the lead of Princeton, a few highly selective private universities and colleges — including Harvard, Yale, Stanford, Penn, and Cornell — recently launched upfront tuition breaks for low- and middle-income students. Beginning in the academic year 2008-09, students with family incomes below \$60,000 will have no tuition fee, for instance, at Stanford. In part, elite privates want to improve access to lower- and even middle-class students; but they are also acting in response to pressure by federal lawmakers to use their large endowments for tuition breaks – to essentially act more like a nonprofit. Even with the belated moves to provide a form of progressive tuition by wealthy private universities and colleges, it is our sense that the income profiles of new students to Ivy league and many other selective privates will not change much in the near future. In part, that is because of the cultural explanation offered previously, and because of our third and related explanation of differential access rates.

1c. Demography and Regional Characteristics:

There are significantly different demographic pools from which most public and private institutions have drawn from and will likely draw from in the near future. Lower-income students are much less likely to travel far to attend a higher education institution because of the real and perceived costs, and because of their perceived community and, perhaps, their sense of where they belong – a public university with perceived lower costs, versus a private elite institution. All of the private institutions included in our sample group largely draw their undergraduates from a national pool; most of the publics, and UC in particular, draw from a regional and statewide pool.

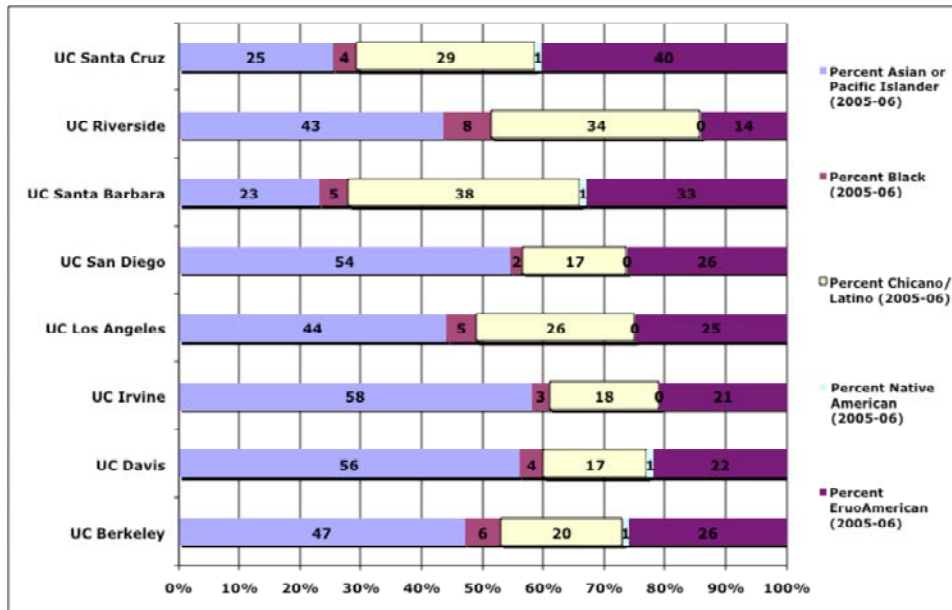
Hence, as California's demographic shifts go, to some degree so goes the composition of the UC undergraduate population. In California, over half the current population is either foreign-born or has at least one immigrant parent. Many of these new residents, but certainly not all, have low socioeconomic status and low education attainment levels. California also continues to grow: from 30 million in 2000, to an estimated 38 million in 2008, a projected 40 million in 2012, and 50 million in 2032.

In the midst of this burgeoning demographic explosion, state lawmakers have repeatedly lowered public investment in education relative to costs. In part, this reduction is a reaction to rising competition for limited tax dollars to fund prisons (a recent study shows that 1 out of 99 U.S. adults is incarcerated), Medicare, and other entitlements, a squeeze now made even more pronounced with the economic downturn of 2007-08.

How do these demographic shifts translate into access and enrollment of lower-income and disadvantaged groups at UC? The expansion in immigrant groups (including first- and second-generation) has brought a remarkable growth in immigrant students at all of the UC campuses. As discussed more fully in a previous research paper, in 2006 more than 60% of all undergraduates at UC's campuses have at least one parent who is foreign-born; at UC Irvine and UC Riverside the percentage was nearly 70% each; at Berkeley 64% (Douglass, Roebken, and Thomson 2007). Certain immigrant groups who enroll at UC also tend to contain a high percentage with Pell Grants; many ethnic groups also are concentrated in one or more of the UC campuses.

Figure 3 provides the composition of Pell Grant recipients at the University of California by five racial and ethnic groupings that help illustrate the regional draw of each of the campuses and the concentration of groups. Each UC campus has a mandate to draw from throughout the state *and* to seek an undergraduate student body that “reflects” the ethnic, racial, and socioeconomic composition of the state’s high school graduating class – what has been termed a parity model which, in fact, is nearly impossible to achieve (Douglass 2007).

Figure 3.
Composition of Pell Grant Recipients by Five Racial/Ethnic Groups: University of California 2006



Berkeley, for example, draws a sizable number of its lower-income students from increasingly diverse Asian and Asian-Pacific ethnic groups. Of the over 7,390 PG recipients at Berkeley (representing 31% of all undergraduates), 47% identify themselves Asian and Asian-Pacific (mindful that we currently lack good information on those who are multi-racial); only 6% are black and 20% Chicano/Latino; Euro-Americans, many with immigrant backgrounds from the former Eastern Bloc a number from rural areas of California, account for 26% of the PG students. For a variety of reasons, including the strong desire of immigrants for access to one of the more prestigious UC campuses, Berkeley draws heavily from a Bay Area and Los Angeles area-centered Asian-American community. Similarly, UC Irvine, which has the highest number of Asian-American students as a percentage of its student body, draws extensively from a burgeoning Asian community in and around its Orange County environs.

UC Santa Barbara, Riverside, and Santa Cruz, followed by UCLA, have the highest percentage of Pell Grant students with Chicano/Latino backgrounds, reflecting, in some form, their regional draw from the large Chicano/Latino community in the immediate Los Angeles Area – although it is important to note that UC Santa Barbara also has one of the lowest numbers of PG students within the UC system. Not surprisingly, students of Euro-American background (40% out of a total of 3,375 PG students) comprise most of the low-income students at UC Santa Cruz, the least diverse of the UC campuses and one with one of the smallest number and percentage of PG students.

We do not have comparable racial and ethnicity data for Pell Grant recipients for the Ivy League institutions, or from the other members of our public and private sample group. But we can look at the overall composition of these different institutions and infer the role of Pell Grants in shaping the diversity of a campus’s student body.

Figure 4 compares the composition of UC San Diego, UC Los Angeles, and UC Berkeley (currently the most selective UCs in admissions), and UC Riverside (one of the most diverse UC campus), with the Ivy League institutions. Euro-Americans compose a high of 68% (Cornell) to a low of 63% (University of Pennsylvania) of all

undergraduates. None of the Ivy League universities have more than 10% of students from African-American or Chicano/Latino backgrounds; Asian-Americans reach 20% of the undergraduates only at the University of Pennsylvania and Columbia. Given that Euro-Americans form the majority of all students at these non-UC schools, they probably comprise the largest group of lower-income students at these elite private institutions as well.

Figure 4. Composition of Undergraduates by Five Racial/Ethnic Groups: Four University of California Campuses and the Ivy League, 2006

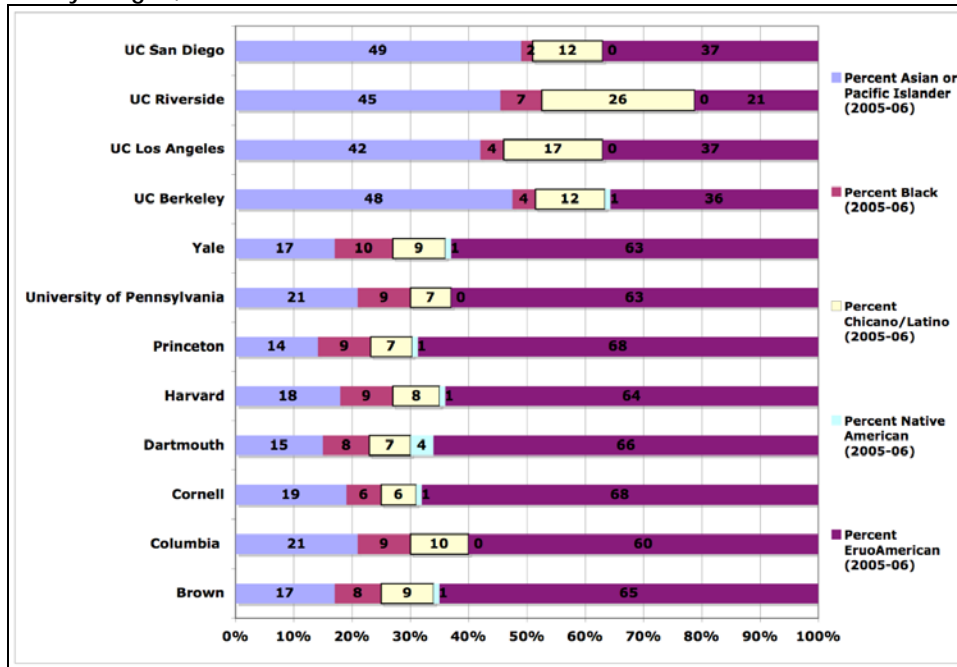
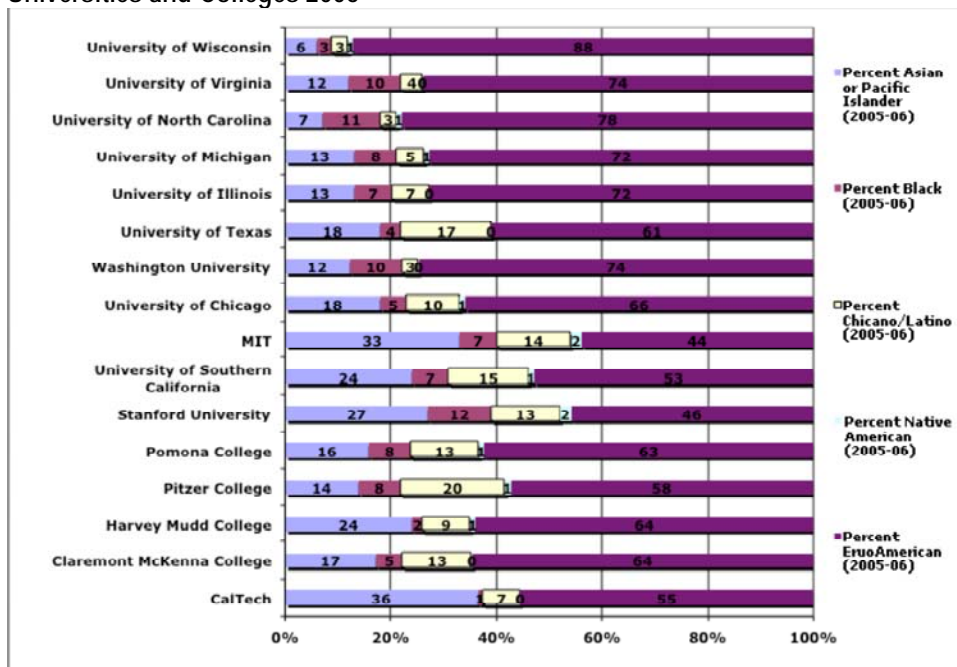


Figure 5. Composition of Undergraduates by Five Racial/Ethnic Groups: Sample Group of Public and Private Universities and Colleges 2006



There are, of course, limitations to this analysis on the presence and composition of lower-income students. Depending on the institution, some lower-income students may not receive Pell Grants but do receive some form of institutional aid and scholarships. One might also speculate that California, and the University of California system, is not representative of most other selective universities, public and private. Two variables are at work: the dramatic demographic differences between states, and the fact that most (but not all) public universities enroll students from their state and sometimes multi-state region.

Figure 5 shows the racial and ethnic composition of students at the other public and private institutions in our comparative sample group, including a group of California institutions as a barometer of the California and West Coast market for low-income students. With the exception of the University of Texas, students at the six publics represented in our sample group are 72% to 88% (Wisconsin) Euro-American; referring back to Figure 2, none of these selective publics have more than 17% of their undergraduates from low-income families, with a startling low of only 9% at the University of Virginia with Pell Grants and 12% at the University of Michigan – both are the institutions that have been the most aggressive at privatization, including increased tuition fees and recruiting out-of-state students to enhance revenue generation.

Within the collection of private California-based universities and colleges (USC, Stanford, Pomona, Pitzer, Harvey Mudd, Claremont McKenna, and CalTech) there is a modestly greater ethnically and racially diverse grouping of students than in the public non-UC comparisons, reflective in some measure of the California institutions' continued draw of students from California and other western states. Most, including Stanford, still draw around 40% of their students from California communities; yet they also enroll relatively few PG students overall. The two largest institutions within the California privates, Stanford and the University of Southern California, both of a similar total enrollment size, enrolled 808 and 2,956 PG students respectively in 2006; Pitzer College had the second-largest percentage of PG students among this group (16%), but that equals only 152 students.

Figure 6.
Net Increase or Decrease in Pell Grant Students: 2000-01 through 2005-06

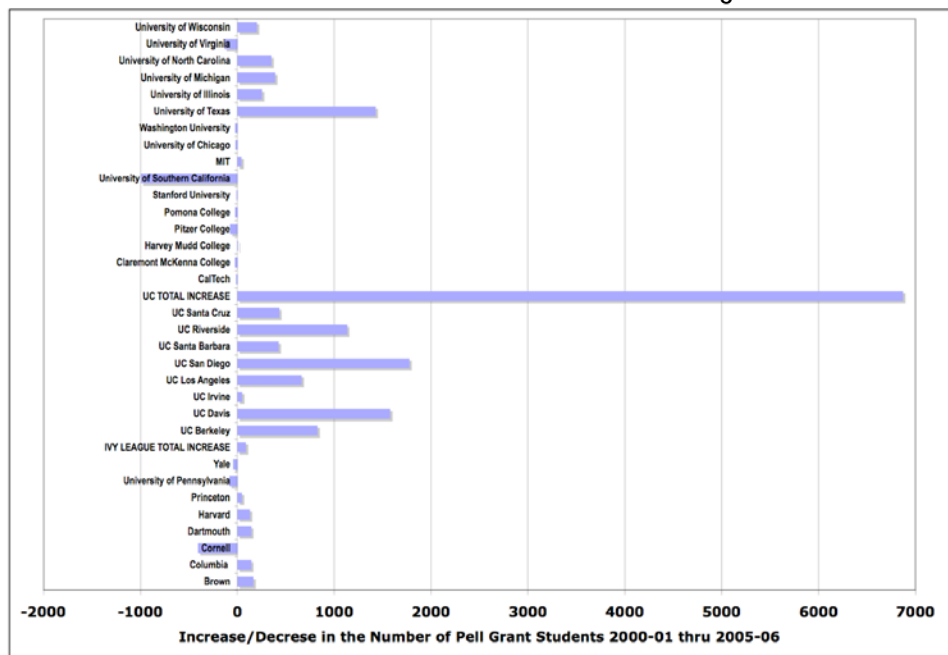


Figure 6 displays the dramatic impact that the University of California has had on the increased access to higher education for low-income students compared to other selective colleges and universities. With the exception of UC Irvine, all UC undergraduate campuses have significantly increased the numbers of enrolled Pell Grant recipients from 2000/01 to 2005/06. Other selective public research universities, in particular the University of

Texas, have also shown some increase in the number of Pell students (though the University of Virginia declined by 135 PG students). However, for the private schools in our study, given their much smaller total enrollments, any increases in the actual number of PG students have been extremely modest. Moreover, Cornell and the University of Southern California, the private schools with the highest percentage of PG students in 2000/01, actually had fewer PG students enrolled in 2005/06, 30% fewer for USC.

2. The Pattern of Economic Stratification at the University of California

The economic stratification of University of California undergraduates can be looked at in greater detail by using institutional financial data to divide financial aid recipients into two groups: Pell Grant recipients and those who do not qualify for Pell Grants but do qualify for need-based financial aid. Using the family income item from the University of California Undergraduate Experience Survey (UCUES), students who do not qualify for need-based financial aid are divided into those with family income under \$125,000 and those with family income of \$125,000 and higher. These four groups (Pell Grant recipients; non-Pell need-based; non-need under \$125,000; non-need \$125,000 and up) comprise about 30%, 19%, 33%, and 19% of UC undergraduates, respectively.

Not surprisingly, as shown in Table 1, the economic stratification of UC undergraduates is correlated with race and ethnicity. At the two extremes, Euro-Americans (and Decline to State) are 25% of Pell Grant recipients but 61% of the \$125,000 plus group, while underrepresented minority students are 30% of the PG students but only 7% of the wealthiest category. Asian students are 45% of the PG students, but equally striking is the economic variation within (e.g., Chinese) and across (e.g., Vietnamese versus South Asian) Asian subgroups.

Table 1.
Racial and Ethnic Composition of the *Poor* and the *Rich*: University of California 2006

| | Pell Recipients | Non-Pell Need- Based | Non-Need Under 125K | Non-Need 125K and up |
|---|-----------------|-------------------------|------------------------|-------------------------|
| American Indian | 0.5% | 0.6% | 0.6% | 0.6% |
| African American | 5% | 3% | 1% | 1% |
| Chicano | 19% | 14% | 5% | 4% |
| Latino | 5% | 4% | 2% | 2% |
| Chinese | 17% | 13% | 20% | 14% |
| Japanese | 1% | 2% | 3% | 3% |
| Korean | 8% | 5% | 4% | 2% |
| Filipino | 3% | 7% | 6% | 4% |
| Pacific Islander | 0.4% | 0.5% | 0.4% | 0.4% |
| South Asian | 2% | 3% | 3% | 4% |
| Vietnamese | 10% | 4% | 3% | 2% |
| Other Asian | 4% | 2% | 2% | 2% |
| EuroAmerican | 19% | 35% | 42% | 53% |
| Decline to State/Other | 6% | 7% | 8% | 8% |
| | 100.0% | 100.0% | 100.0% | 100.0% |
| Sub-Total - UNDERREPRESENTED MINORITY | 30% | 22% | 10% | 7% |
| Sub-Total - ASIAN | 45% | 36% | 41% | 32% |
| Sub-Total EUROAMERICAN & DECLINE TO ST. | 25% | 42% | 50% | 61% |

Also not surprisingly, economic stratification at the University of California is correlated with immigrant generation as shown in Table 2 below. Some 77% of all Pell Grant are either first-generation (not born in the United States) or second-generation (at least one parent not born in the United States) compared to 44% for the \$125,000 and higher income group. Differences across the UC campuses reflect the overall campus demographic patterns, so, for example, at UC Irvine 86% of all Pell recipients are either first or second-generation immigrant but at UC Santa Cruz the figure is only 59%.

Table 2.
Percent of Undergraduates Who Are First- or Second-Generation Immigrants by Campus and Financial Status: University of California 2006

| | Pell Recipient | Non-Pell Need-Based | No Need Under 125K | No Need 125K & Up | TOTAL |
|---------------|----------------|---------------------|--------------------|-------------------|-------|
| Irvine | 86% | 71% | 66% | 57% | 70% |
| Riverside | 81% | 66% | 63% | 56% | 70% |
| UCLA | 84% | 66% | 61% | 47% | 67% |
| Merced | 78% | 61% | 56% | 30% | 63% |
| San Diego | 81% | 59% | 56% | 46% | 62% |
| Berkeley | 75% | 61% | 58% | 48% | 62% |
| Davis | 77% | 54% | 48% | 36% | 56% |
| Santa Cruz | 59% | 37% | 33% | 30% | 40% |
| Santa Barbara | 64% | 40% | 31% | 25% | 39% |
| Total | 77% | 58% | 53% | 44% | 60% |

In Table 3 below we examine the relationship of economic stratification to family education and how this is mediated by race and ethnicity. Here the results of our study are dramatic: **Nearly one in three of all Pell Grant recipients enrolled at the University of California has at least one parent with a four-year college degree.** In other words, the assumption that low-income or “economically-disadvantaged” students at the University of California are also educationally-disadvantaged is not true for large numbers of UC undergraduates. In fact, for a number of racial/ethnic groups (Euro-American, Japanese, Korean, Filipino, and South Asian) fewer than half of the Pell Grant recipients are from families without a parent with a four-year degree. At the other extreme, for Chicano and Vietnamese PG students this is the case 92% and 88% of the time.

Table 3.
UC Undergraduates With Low Educational Capital*: Students Without a Parent With a College Degree: University of California 2006

| | Pell Recipient | Other UG Receiving Need Based Aid | UG Receiving No Need Based Aid | Total |
|------------------------|----------------|-----------------------------------|--------------------------------|-------|
| Chicano | 92% | 76% | 46% | 77% |
| Vietnamese | 88% | 62% | 37% | 72% |
| Other Latino | 82% | 61% | 28% | 59% |
| Other Asian | 74% | 41% | 20% | 49% |
| African American | 72% | 48% | 24% | 53% |
| Chinese | 72% | 49% | 18% | 41% |
| Pacific Islander | 68% | 53% | 33% | 48% |
| American Indian | 61% | 49% | 27% | 41% |
| Decline to State/Other | 61% | 37% | 16% | 31% |
| EuroAmerican | 48% | 35% | 14% | 24% |
| International | 47% | 25% | 34% | 34% |
| Japanese | 45% | 30% | 11% | 19% |
| Korean | 42% | 34% | 24% | 34% |
| Filipino | 39% | 26% | 13% | 21% |
| South Asian | 39% | 24% | 10% | 19% |
| ALL UC UNDERGRADUATES | 68% | 44% | 19% | 38% |

* Without at least one parent with a four-year college degree

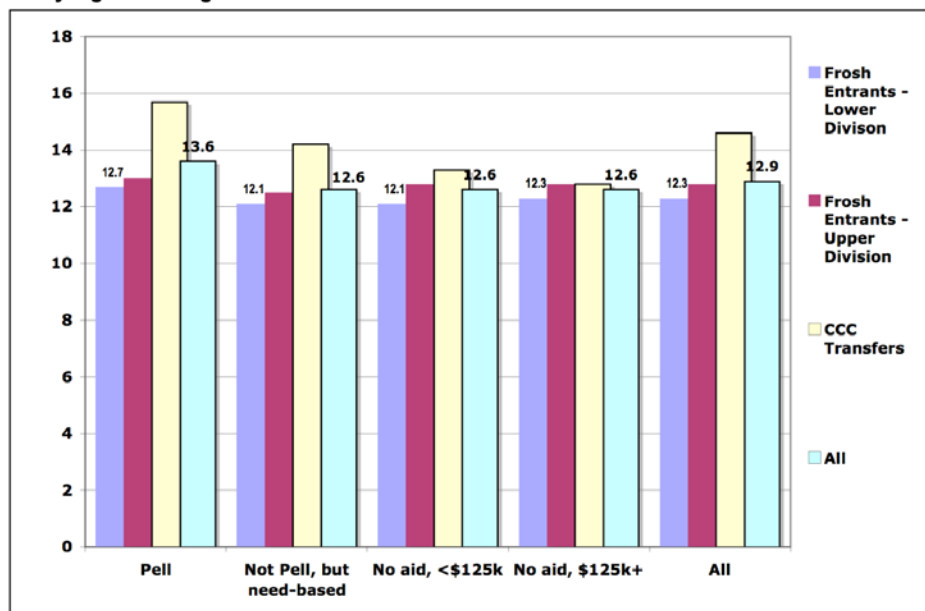
These findings, to our knowledge not formally reported in previous research, have profound implications for our understanding of access and social mobility at the University of California. In an earlier paper (Douglass, Roebken and Thomson, 2007) highlighting the high percentage of students of recent immigrant origin at the University of California, we discussed different kinds of “capital.” There is not only economic capital (family income) and educational capital (educational attainment level of a student’s immediate family), but also “social capital” — essentially behavioral knowledge on how to understand the workings and manners of society and its institutions and to navigate bureaucracies. There is also “cognitive” capital and “aspiration” capital.⁴ We can now postulate that Pell Grant recipients at the University of California, while sharing relatively high levels of cognitive and aspiration capital, vary significantly in terms of educational and social capital. Of particular interest for further study, given the high degree of immigrant origins of University of California students, is the level of parental educational attainment for immigrant parents in their country of origin versus in the United States and its relationship to Pell Grant status and student success at UC.

3. Economic Stratification and the Undergraduate Experience at the University of California

We now examine the relationship between economic stratification and the undergraduate experience at the University of California as reported by students on the 2006 University of California Undergraduate Experience Survey (UCUES). As documented in Brint et al. (2007), more than 55,000 or 36% of all enrolled UC undergraduates completed UCUES, including approximately 15,000 Pell Grant recipients, 10,000 non-Pell need-based financial aid recipients, 20,000 non-need-based aid students with family incomes under \$125,000, and 10,000 with family incomes of \$125,000 and higher. We are particularly interested in how “poor” students (Pell Grant recipients) fare compared to “rich” students (family incomes of \$125,000 and up). An earlier study (Thomson & Kunitz, 2007) looked at student economic stratification just at the Berkeley campus, and the current student uses the design developed for that study, i.e., distinguishing between lower division freshman entrants, upper division freshman entrants and community college transfers. Almost 40% of community college transfers (versus under 30% for freshman entrants) are Pell Grant students.

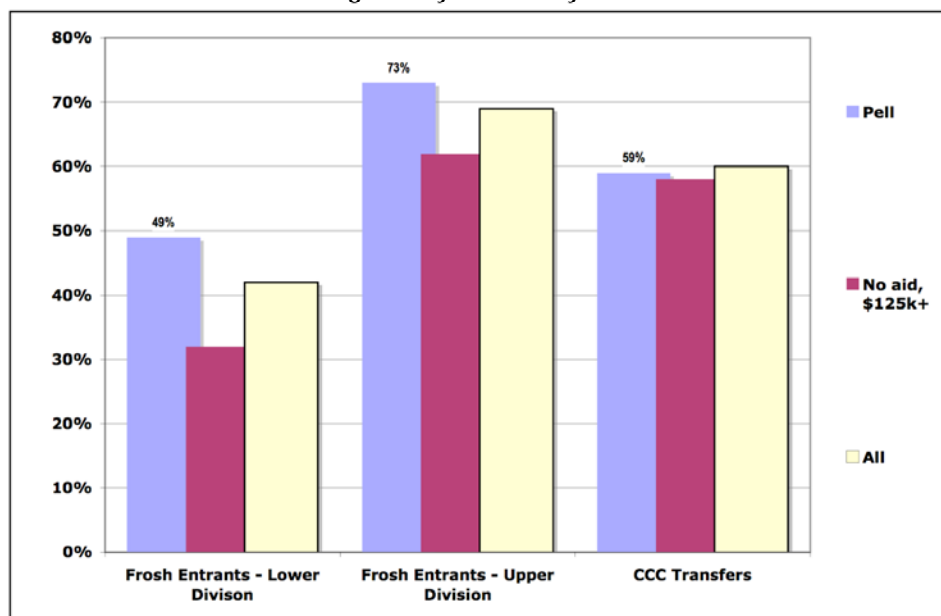
Figure 7 displays the self-reported hours per week studying. Pell Grant students average about an hour more per week studying than the other three groups, but this reflects the primary finding here: community college transfers report studying more hours per week than freshman entrants with the difference more pronounced the “poorer” the student category

Figure 7.
Studying - Average Hours Per Week and Other Class-Related Academic Activities: 2006



We expected to find PG students more likely to take up part-time work for pay than the upper-income students, and are more likely to work more hours as well, but the differences are not as dramatic as commonly believed. Figure 8 shows that a substantial number of students, no matter what their family income level (at least among our rather limited four economic capital categories) work during their undergraduate years. Lower-division students, however, have the lowest percentage of students taking up part-time work – less than half of Pell Grant students take up work, compared to an average of 42% for all lower division undergraduates, and just over 30% for *rich* students.

Figure 8.
Percent Poor and Rich Working for Pay: University of California 2006



Upper division students, whether they are PG or *rich*, have a higher percentage working part-time – over 60%, and more on average than community college transfers. And while Pell Grant students tend to work more hours (13.6 hours per week) on average than their more wealthy cohorts, the difference is not large: *rich* students who do work average 12.6 hours per week, and all undergraduates average 12.9 hours. Community college students, however, have the highest average: transfer students with Pell Grants average 15.7 hours per week, and all transfer students (*rich* and *poor*) average 14.6.

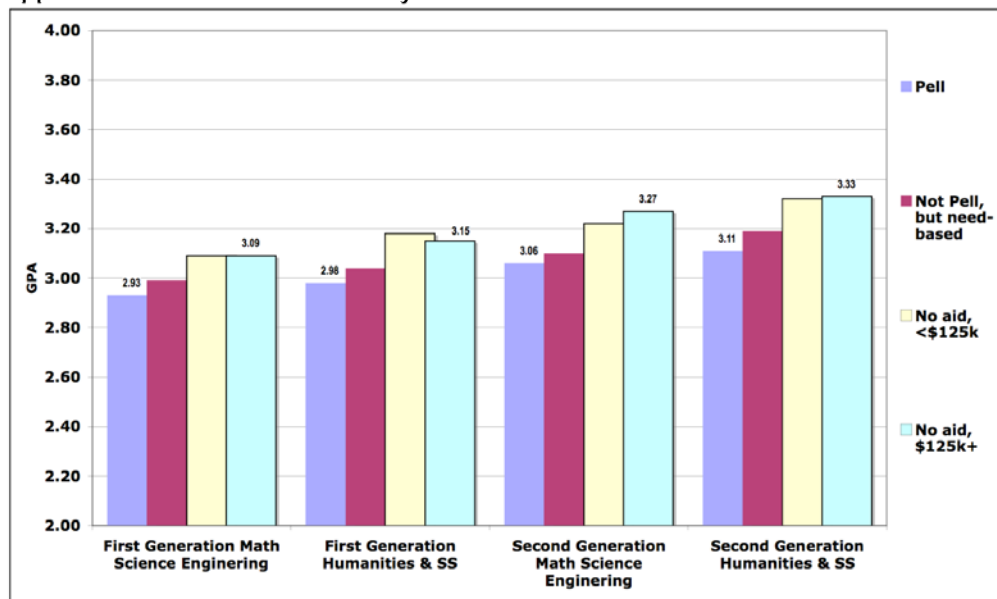
We also find far smaller differences in academic performance by economic stratification than expected. Table 4 displays the average University of California GPA by economic group, educational generation, and college status. Our analysis indicates predicted but only modest differences in the academic performance of these various subgroups, and particularly between our designated *poor* and *rich* students: Out of a 4-point GPA scale, the difference is only .33 among lower division first generation students, and .29 among second+ generation college students; at the upper division level, the *poor* and *rich* GPA separation is slightly lower, at .20 and .23 respectively. Among transfer students (almost invariably upper division students) there is virtually no difference in the academic performance between the *poor* and the *rich*: less than .1 for both first- and second-generation students.

Figure 9 provides additional evidence of marginal differences in academic performance, this time by controlling for broad field of study: math, science, and engineering (MSE), and humanities and social sciences (HSS). While there is, on average and across the eight UC undergraduate campuses, a difference between *poor* and *rich* students, and between MSE and HSS (with HSS GPA tending to be higher), the more significant observation is that second+ generation students, whether they are Pell Grant or upper income students, tend to have slightly better GPAs.

Table 4.
Mean Cumulative UC GPA by Educational Capital, Admission Status, and Financial Status: 2006

| | First Generation | Second+ Generation |
|-------------------------------------|------------------|--------------------|
| Lower Division Frosh Entrant | | |
| Pell | 2.75 | 2.94 |
| Not Pell, but need-based | 2.85 | 3.03 |
| No aid, <\$125k | 2.98 | 3.18 |
| No aid, \$125k+ | 3.08 | 3.23 |
| Gap between poor and rich | -0.33 | -0.29 |
| Upper Division Frosh Entrant | | |
| Pell | 2.95 | 3.08 |
| Not Pell, but need-based | 3.01 | 3.16 |
| No aid, <\$125k | 3.12 | 3.28 |
| No aid, \$125k+ | 3.15 | 3.31 |
| Gap between poor and rich | -0.20 | -0.23 |
| Community College Transfer | | |
| Pell | 2.96 | 3.06 |
| Not Pell, but need-based | 2.98 | 3.05 |
| No aid, <\$125k | 3.10 | 3.16 |
| No aid, \$125k+ | 3.05 | 3.09 |
| Gap between poor and rich | -0.09 | -0.03 |

Figure 9.
Educational Capital (First- or Second-Generation College Student) by Broad Field of Study and Mean GPA for Upper Division Students: University of California 2006



This trend is found in all of the UC campuses in our study, with only minor variances among the campuses. Table 5 shows a difference of only .18 in the GPA of more wealthy students when compared to a PG student in MSE fields for both first- and second-generation college students. At Berkeley, and among first-generation students, PG students gain slightly higher GPAs in these fields than do *rich* students; at Riverside, there is no difference between *poor* and *rich* students in the GPAs of second-generation students.

Table 5.
Difference in GPA Between *Poor* (Pell Grant) and *Rich* Students (>\$125K Family Income) for First and Second+ Generation Students by Major and Campus: University of California 2006

| | Second Generation - Poor and Rich Math Science Engineering | |
|------------------|--|--|
| | First Generation Poor and Rich Math Science Engineering | Second Generation - Poor and Rich Math Science Engineering |
| UC Berkeley | -0.05 | 0.22 |
| UC Davis | 0.29 | 0.21 |
| UC Irvine | 0.13 | 0.11 |
| UC Los Angeles | 0.17 | 0.16 |
| UC San Diego | 0.02 | 0.27 |
| UC Santa Barbara | 0.35 | 0.22 |
| UC Riverside | 0.25 | 0.00 |
| UC Santa Cruz | 0.27 | 0.28 |
| UC Average | 0.18 | 0.18 |

Table 6.
Percent of Upper Division Majors in Math, Science, and Engineering by Campus, and by Freshman and Community College and Financial Status: 2006

| | <i>The Poor</i> | | | | | | <i>The Rich</i> | | | | | |
|---------------|-----------------|-------|------------|---------------------|-------|------------|---------------------|-------|------------|--------------------|-------|------------|
| | Pell Recipients | | | Non-Pell Need-Based | | | No Need, Under 125K | | | No Need, 125K & Up | | |
| | Frosh | CA CC | CC - Frosh | Frosh | CA CC | CC - Frosh | Frosh | CA CC | CC - Frosh | Frosh | CA CC | CC - Frosh |
| ALL UC | 36% | 34% | -2% | 37% | 28% | -9% | 43% | 29% | -14% | 40% | 21% | -19% |
| San Diego | 46% | 51% | 5% | 45% | 42% | -3% | 52% | 43% | -9% | 47% | 37% | -10% |
| Davis | 46% | 49% | 3% | 46% | 47% | 1% | 51% | 43% | -8% | 47% | 37% | -10% |
| Irvine | 42% | 34% | -8% | 38% | 26% | -12% | 45% | 26% | -19% | 41% | 17% | -24% |
| Berkeley | 37% | 32% | -5% | 40% | 21% | -19% | 46% | 26% | -20% | 45% | 25% | -20% |
| UCLA | 31% | 28% | -3% | 37% | 19% | -18% | 44% | 19% | -25% | 42% | 9% | -33% |
| Riverside | 30% | 28% | -2% | 31% | 21% | -10% | 39% | 35% | -4% | 30% | 21% | -9% |
| Santa Barbara | 24% | 16% | -8% | 26% | 14% | -12% | 30% | 13% | -17% | 26% | 10% | -16% |
| Santa Cruz | 20% | 31% | 11% | 22% | 24% | 2% | 27% | 29% | 2% | 28% | 22% | -6% |

While GPAs are relatively consistent across the campuses in math, science, and engineering fields, we do observe interesting differences in the percentage of *poor* students who are majoring in these fields by campus. As shown in Table 6, the San Diego and Davis campuses have the highest concentration of Pell Grant recipients who pursue STEM (science, technology, engineering, and math) related fields, followed by, in order of descending percentages, Irvine, Berkeley, UCLA, Riverside, Santa Barbara, and Santa Cruz. Two other observations are offered:

- a) For students who enter as freshmen: Pell students are *least* likely to be STEM majors, while the "middle income" [no need, under 125K] are most likely to be STEM majors.
- b) The pattern for California community college transfers is dramatically different: Among CCC transfers, Pell recipients are the *most* likely to be STEM majors; they are actually a little less likely to be STEM majors than their freshman entrant counterparts, but the big difference for community college transfers is the sharp decline in STEM majors as financial status goes up.

UCUES also offers information on the satisfaction of undergraduate students with their academic and social experience, and their sense of belonging at a highly selective research university – an indicator of campus climate. Figure 10 provides five measures, including satisfaction with GPA, their social experience on campus, their academic

experience, their sense of belonging at a campus, and if they would choose UC again. The sense of belonging is a general question asked of students on UCUES: "I feel I belong at this campus."

Generally, Pell Grant students score only slightly lower than more wealthy students in each measure (with the exception of their satisfaction with their GPAs which are, in fact, somewhat lower).

Figure 10.
Measures of Satisfaction with Undergraduate Experience Between the Poor and the Rich: University of California 2006

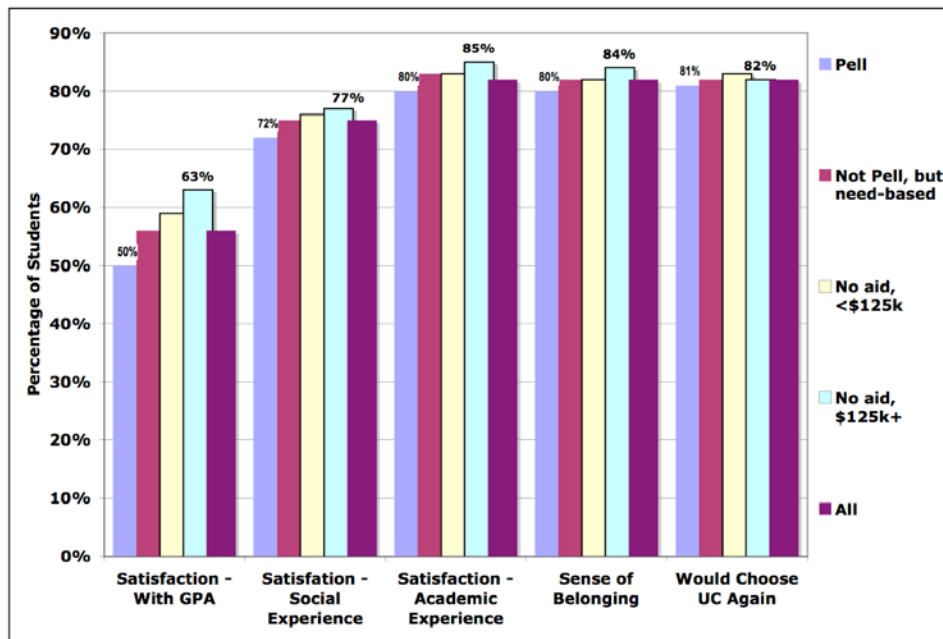


Table 7 provides a comparison by individual UC campus of *poor* and *rich* students and the difference in their responses to our measures of satisfaction (this time also including their sense of the value of UC for the cost of attending), and their sense of belonging and if, given a choice, they would chose their particular campus again. Interestingly, the difference between rich and poor students is less at the less affluent campuses (as measured by the relative family income levels of students) such as Riverside and Irvine and in the case of Riverside, poor students are actually more positive than rich students in their ratings of social experience, value for price, sense of belonging, and whether they would attend again (5% higher for both).

Table 7.
Measures of Satisfaction with Undergraduate Experience Between the Poor and the Rich: University of California by Campus 2006*

| | Satisfaction With | | | | Sense of Belonging | Would Choose Campus Again |
|---------------|-------------------|-------------------|---------------------|-----------------|--------------------|---------------------------|
| | UC GPA | Social Experience | Academic Experience | Value for Price | | |
| Santa Barbara | -16% | -9% | -6% | -11% | -9% | -5% |
| Davis | -16% | -8% | -7% | -10% | -4% | -3% |
| Berkeley | -13% | -5% | -5% | -7% | -6% | -1% |
| UCLA | -16% | -7% | -4% | -9% | -4% | -1% |
| San Diego | -14% | 0% | -7% | -16% | -4% | 1% |
| Santa Cruz | -9% | -5% | -2% | -3% | -2% | 1% |
| Irvine | -10% | -1% | -4% | -1% | 0% | 1% |
| Merced | -13% | 6% | -5% | -14% | 0% | 12% |
| Riverside | -6% | 1% | 0% | 1% | 5% | 5% |
| TOTAL | -13% | -5% | -5% | -8% | -4% | -1% |

* Negative represents higher level of satisfaction for rich over poor students; positive represents higher level of satisfaction for poor over rich students.

Table 8.
Difference Between *Rich* and *Poor* Students: Satisfaction with Academic Advising at University of California 2006
 (% Satisfied *Rich* minus *Poor*)

| | Faculty | Peer | College | Academic Dept | AVERAGE |
|-----------------|-----------|-----------|------------|---------------|-----------|
| Berkeley | -2% | -2% | -7% | -2% | -3% |
| UCLA | -2% | -4% | -5% | -1% | -3% |
| Santa Cruz | 1% | -2% | -6% | 0% | -2% |
| Irvine | -1% | -1% | -2% | -3% | -2% |
| San Diego | 2% | 1% | -4% | 1% | 0% |
| Santa Barbara | 3% | 1% | 1% | -1% | 1% |
| Davis | 2% | 0% | 4% | 3% | 2% |
| Riverside | 5% | 4% | 4% | 2% | 4% |
| Merced | 10% | 10% | 0% | 1% | 5% |
| UC TOTAL | 1% | 0% | -2% | 0% | 0% |

Table 8 displays the difference in satisfaction with various sources of advising between rich and poor students by campus. We include data from Merced in this table, but it is important to note that enrollment on this, the newest campus in the UC system, is very small – the campus will graduate its first class in spring 2008. Continued administration of UCUES will provide fascinating information on how students fare at and experience this new and important campus that will experience rising enrollment, as most of the UC campuses now receive many more applications from UC-eligible students than they have places for. Both Riverside and Merced are vital routes for continued access to UC, and are, in themselves and because of their high concentration of lower income and minority students, great experiments in educating California’s increasingly diverse and multi-racial population. Early results from UCUES show high levels of student satisfaction relative to the other campuses.

The literature on the student experience suggests that lower-income and first-generation students feel that faculty and staff advisors do not relate to them as well as do rich students. While “*poor*” students are less satisfied on some other measures, the results for satisfaction with advising do not support the conventional wisdom. Across the UC system there are essentially no differences in satisfaction with academic advising between *rich* and *poor*; indeed, at Berkeley and UCLA Pell students are slightly more satisfied than their *rich* counterparts.

In summary, then, our initial analysis of UCUES responses suggest that Pell Grant recipients at the University of California fare remarkably well compared to their more affluent peers. Future research will move beyond this positive snapshot to examine the experience of poor and rich students over time, and focus on student retention, graduation rates, and other outcome measures.

4. The Future for Low-Income Students

From the analysis in this paper, we can speculate that lower income students do well academically and only less so, on average, when compared to their wealthy counterparts; they also generally have high levels of satisfaction and are engaged in the academic civic life of the institutions they are enrolled in. At least, that is the case at the University of California, and we return to the question of whether UC is a peculiar case, and a peculiar institution in light of the dearth of information at other highly selective institutions.

With evidence of marginal but real declines in the presence of *poor* students in recent years among many private and public institutions, the net effect is lower-income students may have been pushed into less competitive institutions, or they may delay the entry into postsecondary education – we have no good data on the alternative paths taken. Arguably, the presence of low-income students, or absence, is a barometer of the how well public institutions are meeting their broad social mandates and the biases of their admissions practices.

Private elite institutions have, in general, been much less accommodating for lower income students – though many have moved toward more robust need-based aid, broadened their consideration of lower SES students in the admissions process, and, just recently, established differentiated tuition rates – essentially, offering a discount on tuition for lower- and middle-income families. These have made national headlines and, to some degree, offer a counterpoint to increased concern by lawmakers over the huge size of endowments of a small number of private elites, and a handful of publics, that are juxtaposed with rising tuition prices.

An important public policy question is whether lower-income students, and their middle-class counterparts, will grow or possibly shrink as a percentage of the undergraduate student body among our selected sample group of public and private universities, and more generally other highly selective institutions. We speculate that access to these elite and semi-elite institutions will be influenced by a confluence of factors that will shape enrollment of *poor* and *rich* students, including:

- a) Increasing tuition price sensitivity.
- b) Inadequate increases in federal and institutional grants in aid, and real and perceived debt burdens – in short, only a major new federal initiative to increase substantial financial aid will expand access to low-income and middle-income students – an initiative that needs commitments by universities and colleges to constrain their costs and further commitment their resources to making college affordable.
- c) Increased competition for students to get accepted into these universities that include two confluences: one, the applicant pool keeps increasing as the US population grows, while most private and public elite and semi-elite universities and colleges are not growing; the yet unbroken desire of most institutions to increase the SAT profile of their student bodies.
- d) Demographic, cultural, and region-specific dynamics in which, for example, lower-income students see a more readily achievable public institution as more attainable than distant prestige institutions – private or public.
- e) The health and vitality of regional and national public school systems, where the vast majority of low-income students graduate from and then seek entrance into a university or college.
- f) Larger socioeconomic factors related to disparities in income and opportunities for *poor* students.

The very recent, and long-delayed, effort of some elite privates to increase their numbers of lower-income students may provide greater access. But any increases will be, in the end, probably marginal in relationship to the growing pool of students within the US market as the nation's population grows, and the projected corresponding increase in the pool of students from lower-income families. For example, the fifty "best" (read: most selective) liberal arts colleges in the US enroll collectively less than 0.6% of all Pell Grant enrollments in 2006. The U.S.'s total population is estimated to grow by some 50 million over the next twenty years. It is probable that the public sector will grow in its overall share of the higher education market, as the vast majority of selective privates will choose not to grow at all (Douglass 2007). Public higher education, in all its forms, is and will become even more so the most important route for socioeconomic mobility.

Hence, it is not an exaggeration to say that the health of America's economy and the character of social stratification will remain dependent on the vibrancy of its public higher education institutions. With the recent debacle in financial markets and long-term downward pressure on the economy, disparities in wealth may further be extenuated. For middle- and lower-income students, public institutions will remain the primary entry point. Students from wealthy families congregate at the most prestigious private and public institutions, with significant variance depending on the state and region of the nation, reflecting the quality and composition of state systems of higher education.

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NOTES

¹ Sam Dillon and Tamar Lewin, "Pell Grants Sid to Face A Shortfall of \$6 Billion," *New York Times*, September 18, 2008, A19.

² There are generally three ways in which data has been collected at the University of California regarding the economic capital of undergraduate students. Like other institutions, students are asked to state their family income after taxes voluntarily in their application for admission; a sub-cohort also provide information on income via their application for federal grants (like Pell) and loans. Both are decent sources of information, but have a number of constraints. For one, data gathered in the admission process is incomplete – many students do not fill out the information on family income, perhaps because they do not know their parents' actual income, perhaps more because of a fear that it will be used in the admission process. At the same time, those who apply for federal aid and institutional aid (most institutions use the

Free Application for Federal Student Aid, or FAFSA) are a self-selected group, good for assessing the number of low and middle income students, but not more wealthy students.

With a census survey, administered regularly, we have gained a more continuous source of information on family background, removed from the admission process and applications for financial aid, and that we can correlate with those data sources to help validate UCUES responses. Still, data on income should be seen only as an indicator of economic capital. UCUES not only asks students what their family income level is, but also asks for their perception of the economic class they and their family belong in. The 2006 administration of the survey provided results that indicate that 21.4% of undergraduates at the University of California are from families with incomes below \$35,000; 20.1% earn from \$35,000 to nearly \$65,000; 22.1 percent from \$65,000 to nearly \$100,000; 21.8% from \$100,000 to \$149,000; and 14.7% earn more than \$150,000. Hence, some 41% earn below \$65,000 (low-income and working class). Yet only 31.6% of the students responded that they viewed themselves as lower-income and working class. As shown below, most wealthy students also tended to see themselves as upper middle class and professional.

Perceived Economic Class Reported by Survey Respondents

| Social Class | Percent |
|---------------------------|---------|
| Low-income | 10.8% |
| Working Class | 21.6% |
| Middle Class | 37.2% |
| Upper Middle/Professional | 28.5% |
| Wealthy | 1.9% |

The extent to which affluent students do not characterize themselves as “wealthy” is illustrated by focusing on their responses:

Perceived Economic Class Reported by Survey Respondents Who Report Family Incomes of \$125,000 and up

| Social Class | Percent |
|---------------------------|---------|
| Low-income | 1% |
| Working Class | 3% |
| Middle Class | 21% |
| Upper Middle/Professional | 67% |
| Wealthy | 8% |

See Alexander W. Astin and Leticia Oseguera, “The Declining ‘Equity’ of American Higher Education,” *The Review of Higher Education* 27, no. 3 (Spring 2004): 321-41; see also Michael McPherson and M. O. Schapiro, *An Overview of Trends and Patterns in Participation and Financing in US Higher Education* (Paris: OECD, 1998); Michael S. McPherson and Morton O. Schapiro, *Reinforcing Stratification in American Higher Education: Some Disturbing Trends*, National Center for Postsecondary Improvement, Stanford University, 1999.

⁴ For a discussion on the different types of human capital and how the influence admissions and enrollments at major universities and colleges, see John Aubrey Douglass, *The Conditions for Admissions* (Stanford University Press, 2007) pp. 284-289.