Is “race-neutral” really race-neutral?: Adverse impact towards underrepresented minorities in the UC System.

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Is “Race-Neutral” Really Race-Neutral?: Disparate Impact Towards Underrepresented Minorities in Post-209 UC System Admissions

After the implementation of California’s ballot initiative Proposition 209 and the University of California’s (UC) Board of Regents SP-1, which eliminated consideration of race in the admissions process, a precipitous and well-publicized drop in the number of underrepresented minorities (URMs) gaining admission to and enrolling at the UC system at both the undergraduate and graduate levels occurred (Pusser, 2001; Robinson et al., 2003). Despite this decline, the UC Regents state its admissions goals as follows: “the University shall seek out and enroll, on each of its campuses, a student body that demonstrates high academic achievement or exceptional personal talent, and that encompasses the broad diversity of backgrounds characteristic of California” (University of California, Office of the President [UCOP], 2002, p. 1).

In the decade since the passage of 209, the university has taken a number of steps to increase the enrollment of URMs at UC through efforts such as expanded outreach and comprehensive admissions review (Laird, 2005; Timar, Ogawa, & Orillion, 2004). Believing that 10 years is the optimal time lapse to evaluate the direct and indirect effects of a policy (Sabatier, 1999), this paper seeks to determine the impact of the elimination of racial consideration in the admissions process and if the.
university is meeting its stated mission of crafting a student body representative of the state it serves. In short, the purpose of this paper is to examine the proportion of URM undergraduate applications, admissions, and enrollments preceding, during, and after Proposition 209 while accounting for the relative growth in University of California eligibility for underrepresented minorities (URMs).

**Background**

Immediately after the implementation of California’s Proposition 209, URM freshman applicants and matriculates in the UC system fell dramatically and have yet to return to pre-209 levels (Pusser, 2004). These numbers remain low even after the initial “cooling effect” whereby schools eliminating affirmative action programs and prior to implementation of new programs are seen as unwelcoming to minority candidates (Orfield, 1998). The numbers have risen modestly since 1999 with concerted efforts to increase outreach efforts as well as implementing a process of comprehensive review² (UCOP, 2003) that includes an evaluation of student achievement in the context of opportunity available in schools. While these programs are not a substitute for affirmative action, they appear to partially stem the flow of URMs away from the UC system.

The number of African American, Chicano, and Latino freshman students entering the UC system dropped between 1995 and 1998. In contrast, the number of White and Asian American students increased during the same time period (see Table 1). In 2002, the freshmen enrollment counts of African Americans and Latinos recovered to their approximate levels in 1995 and the number of Chicano students increased by 734. However, between 1995 and 2002 the size of the resident UC undergraduate student body greatly increased by nearly 8,000 students (all UC-recognized ethnic groups are not included in Table 1), indicating that the proportion of African American, Chicano, and Latino students declined (see Table 1).

In addition, the demographics for the state of California have been shifting over the past decade with Latina/os comprising a substantially larger proportion of the college-aged population. Thus, it follows that the rebound in numerical representation for Chicano students is, in large part, due to their increased proportional representation in the state’s population (Laird, 2005).

Table 1 also includes the freshman enrollment counts for the two most selective UC flagship campuses: Berkeley and Los Angeles (UCLA). At both institutions, the number of entering African American, Chicano, and Latina/o freshmen did not recover to 1995 levels by 2002, despite the total number of freshmen growing by 10% during the same time

---

### Table 1

<table>
<thead>
<tr>
<th>UC System</th>
<th>Berkeley</th>
<th>Los Angeles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>2,463</td>
<td>113</td>
</tr>
<tr>
<td>1998</td>
<td>2,211</td>
<td>76</td>
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<td>2002</td>
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<tr>
<td>1995</td>
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<td>113</td>
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<td>1998</td>
<td>6,979</td>
<td>76</td>
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<tr>
<td>2002</td>
<td>9,200</td>
<td>32</td>
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<td>1995</td>
<td>8,179</td>
<td>113</td>
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<td>1998</td>
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<td>76</td>
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<tr>
<td>2002</td>
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<td>32</td>
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<td>1995</td>
<td>896</td>
<td>113</td>
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<td>1998</td>
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<td>2002</td>
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<td>1995</td>
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</tr>
<tr>
<td>2002</td>
<td>161</td>
<td>32</td>
</tr>
</tbody>
</table>

Source. Data compiled from the University of California Office of the President (2003) report Undergraduate access to the University of California after the elimination of race-conscious policies.

Note. Figures in parentheses represent the proportional representation of the total. The figures do not sum to the total because certain categories were not presented in this table such as “Other” and “Unknown.”
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<thead>
<tr>
<th></th>
<th>UC System</th>
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<td>945</td>
<td>739</td>
<td>936</td>
<td>202</td>
<td>122</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>(4.30)</td>
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<td>(3.13)</td>
<td>(6.67)</td>
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<td>Asian American</td>
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<td>6,979</td>
<td>9,200</td>
<td>1,009</td>
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<td></td>
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<td>(30.75)</td>
<td>(33.26)</td>
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<td>289</td>
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<tr>
<td></td>
<td>(11.20)</td>
<td>(10.69)</td>
<td>(10.69)</td>
<td>(13.22)</td>
<td>(5.70)</td>
<td>(8.73)</td>
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<tr>
<td>Latino</td>
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<td>463</td>
<td>113</td>
<td>76</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>(4.40)</td>
<td>(2.96)</td>
<td>(3.43)</td>
<td>(3.72)</td>
<td>(2.28)</td>
<td>(3.26)</td>
</tr>
<tr>
<td>White</td>
<td>8,179</td>
<td>8,257</td>
<td>10,577</td>
<td>896</td>
<td>939</td>
<td>940</td>
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<td></td>
<td>(37.18)</td>
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<td>29,916</td>
<td>3,034</td>
<td>3,333</td>
<td>3,209</td>
</tr>
</tbody>
</table>

Source. Data compiled from the University of California Office of the President (2003) report *Undergraduate access to the University of California after the elimination of race-conscious policies*. Note. Figures in parentheses represent the proportional representation of the total. The figures do not sum to the total because certain categories were not presented in this table such as “Other” and “Unknown.”
period. The enrollment data at Berkeley and UCLA suggests that Proposition 209 had a larger impact on the most selective campuses than the system as a whole.

In addition to the changing demographics of California, a number of policies were enacted designed to stem the flow of URMs away from the UC System. In addition to comprehensive review, the UC System invested $137.1 million from 1998 to 2001 toward new outreach efforts coupled with increased spending on programs such as the Early Academic Outreach Program (EAOP) and Mathematics, Science, Engineering, Achievement (MESA) program (Laird, 2005, pp. 163–166). While it is likely that these investments increased the numbers of URMs eligible and applying to the UC campuses, it is a non-permanent solution. Outreach programs are some of the first to be dismantled during budgetary shortfalls, and these budgets were slashed by 50% in the 2003–04 budgetary cycle due to California’s booming deficit (Laird, 2005, p. 168).

The second major policy change was the implementation of Eligibility in a Local Context (ELC) for the entering freshman class of 2001. ELC was created with the understanding that UC eligibility requirements (A–G, SAT, and SAT II) were not equitably available to all students, and this inequality cut across racial/ethnic lines. ELC established policy such that if students completed 11 A–G approved classes (15 for regular eligibility) and ranked in the top 4% of their high school class, the students were automatically eligible for UC admissions, although not to the campus of their choice (Laird, 2005). According to the California Master Plan, the UC System is supposed to serve the top 12.5% of students in the state (Pusser, 2004), and thus, “the number of students who would not have been UC-eligible under existing criteria but who will now be UC-eligible under ELC is therefore likely to be small” (Laird, 2005, p. 155). While it increased access for rural students, it did little for URMs because percentage plans require high levels of high school segregation (Laird, 2005). They do not account for within-school segregation and tracking that systematically disadvantages URM high school students (Oakes et al., 2006).

All of these programs, comprehensive review, ELC, and increased outreach, are meant to address different stages in the college choice process. Concurrent with these policy changes, there has been research specifically examining where in this process URMs are leaving within the UC-pipeline.

**Previous Research on Proposition 209**

Previous research on the impact of Proposition 209 beyond enrollment declines has focused almost exclusively on specific parts of the
college selection process. For example, two studies investigated the effects of Proposition 209 by examining the institutions that SAT-takers choose to send their exam scores as a proxy for the institutions where students would ultimately apply and enroll (Card & Krueger, 2004; Long, 2004). Long found significant changes in the score report decisions of Californians after Proposition 209. The general trend showed that Whites and Asian Americans sent their score reports to higher quality colleges and universities, while the converse occurred for URMs. Long found, as expected, that the probability of acceptance significantly increased with an increased number of score reports sent, after controlling for academic fit. His research indicates that URMs reduced the number of score reports sent to top-tier colleges and universities, thereby, indirectly leading to their attending lower quality institutions.

Card and Krueger (2004) also used SAT score reports, but focused on highly qualified minority applicants before and after Proposition 209. In contrast to Long’s conclusions, Card and Krueger found that the elimination of affirmative action in California had little or no effect on the score reporting behaviors of highly qualified minorities to selective institutions. Moreover, they found no tendency by highly qualified minorities to send more scores to lower quality institutions or to institutions with a larger proportion of minority applicants.

In addition to studies that examined differences in behavior by ability, other studies have focused on the effects of Proposition 209 by race/ethnicity. Martin, Karabel, and Jaquez (2005) argued that high schools with large Latino populations tended to have very low UC application rates, thus, their students were not enrolling. In contrast, schools with significant African American student bodies tended to have comparable UC application rates with majority White high schools; yet fewer students enroll due to low admissions rates.

Another study examined how UC’s undergraduate admissions policies changed after the implementation of Proposition 209, as a function of the differing admissions criteria among the selectivity of UCLA, UC Davis, and UC Riverside (Contreras, 2005). The study found that highly and moderately selective UC campuses have increasingly competitive admissions standards as determined by the significance of GPA and SAT on predicting admissions. While these criteria disadvantage URMs, those students from higher socioeconomic backgrounds were able to partially mitigate their circumstances at UCLA or Davis, the more selective institutions studied. The competitive advantage of students from higher socioeconomic backgrounds is attributed to their access to a relevant college curriculum and expanded educational support systems (Contreras, 2005).
defines selectivity as follows: UCs Berkeley and Los Angeles are referred to as “hyper-selective” as they are able to admit only about one-quarter of their UC-eligible applicants. In recent years, UC Santa Cruz selects from among its eligible applicants, and currently admits about three-quarters of its eligible applicants. Also, in recent years, UC Riverside has come very close to the selectivity threshold, and consequently has conducted a comprehensive review process in anticipation of becoming fully selective. UC Merced is currently able to admit all UC-eligible applicants that apply. UCs San Diego, Irvine, Santa Barbara, and Davis select for admission between 40% and 60% of their eligible applicants (BOARS, 2007).

Further research has showed that the final college destinations of the most academically prepared UC applicants varies by race (Geiser & Caspary, 2005). While the enrollment rate of all students to the system has consistently hovered above 60% in recent years, top underrepresented applicants increasingly enroll at selective private institutions. The UC enrollment gap between URMs and majority top applicants denied admission to Berkeley or UCLA during the period studied was nearly 60% (Geiser & Caspary, 2005).

These studies are instructive but they tend to treat the admissions process as a monolithic entity with a focus on one or two segments of the college choice process. Our research is relatively unique because it specifically addresses disparate impact towards URMs at multiple levels from taking an application to enrollment during the following years: 1995, 1998, and 2002. The aforementioned studies are informative, yet they only scratch the surface in determining this policy’s impact on college admissions and there are many questions left unanswered. Is there a differential impact on URM applicants if they come from different SES backgrounds? Are the talented URM students simply leaving the state? What is the magnitude of the difference between URM applicants and non-URM applicants to the UC system? What is the magnitude of the difference between URM and non-URM admission and enrollment rates? Overall, if public resources are financing public higher education, are minority communities reaping the direct benefits for their investment or are they only subsidizing majority education?

**Theoretical Framework**

In the following sections we will outline the model of college selection to provide additional depth to the complexities of enrolling a diverse student body. We will then outline disparate impact theory as a means of analyzing where in the college choice process the system is breaking down in a post-209 environment.
Proposition 209 and Disparate Impact

Conceptual Model of College Choice for the University of California

When a student chooses a college, they progress through three phases: predisposition, search, and choice (Hossler & Gallagher, 1987). These phases help students winnow down the thousands of potential colleges and universities to a single set of institutions from which the student ultimately chooses.

In the case of a student wishing to attend a UC campus, the student must complete a number of defined tasks or admissions criteria throughout the three phases. First, the student must graduate from high school with an academic record demonstrating ability to undertake college-level course work at a UC campus. In California, this step is defined as UC eligibility, which encompasses standards of academic performance (grade point average) and coursework that are clearly articulated by the university (Robinson et al., 2003). To achieve UC eligibility, all students must complete a series of prescribed courses commonly approved by UC that meet A–F requirements for college admission in specific academic areas (modified to include more areas and called A–G since 2003). Additionally, all students are required to take a series of standardized tests: the SAT I reasoning test or ACT, and three SAT II subject tests. (For the incoming class of 2006, students must take two SAT II subject tests as a result of the incorporation of a writing component in SAT I for the incoming class of 2006, and students must also take the writing portion of the ACT). However, students simply have to take the required tests to be eligible, and by far the most important predictor of UC performance is the GPA in required A–G courses (Geiser & Studley, 2002).

Next, a student must apply to the UC campus(es) that satisfies his or her preference. After applying, the campus admissions office will decide whether the student is admissible to the campus of choice. If an eligible student is not admitted to any UC campus, since 1988, the system has offered the student admission at a campus with available space. Once admitted, the applicant must declare intent to enroll and ultimately arrive on campus at the beginning of the term.

In this process, two critical time points influence the institution the student will ultimately attend. The first time point, during the search phase, occurs when the student selects which institution(s) to apply. The other time point is in deciding which institution the student will attend, the choice phase, at steps five and six. At both of these time points, the perceptions of the student will influence the choice of institutions in which to apply to and to enroll in.

We posit that the end of affirmative action at the University of California affected the perceptions of URMs, ultimately affecting their deci-
sion to apply and to enroll at UC campuses. Additionally, we hypothe-
size that the implementation of Proposition 209 altered UC admissions
criteria, disproportionately aiding majority students. These two events
contributed to the decreased number of underrepresented students in the
freshman classes at the UC system and its campuses. To test these hy-
potheses we apply disparate impact theory.

Disparate Impact Theory

The underpinnings of disparate impact theory are traced to the
Supreme Court’s 1971 holding in *Griggs v. Duke Power Co.* (Baldus &
Cole, 1980; Welch, 1991). In *Griggs*, the court held that facially-neutral
hiring requirements, but having a discriminatory impact not “reasonably
related” to job performance, violated Title VII of the Civil Rights Act of
1964. Specifically, Duke Power required employees to possess a high
school degree or to pass a general intelligence test despite these criteria
not being related to job performance. As African Americans were less
likely to possess a high school degree and averaged lower scores on ap-
titude tests, African Americans were selected for positions at the com-
pany at a significantly lower rate than Whites.

The theory ignores the intent of an employer, rather focusing on the
outcome of a policy (Rutherglen, 1987). The only way for an organiza-
tion to justify a disparate outcome is by demonstrating that a policy or
requirement is reasonably related to job performance. In short, disparate
impact theory places the onus on organizations to remedy any discrimi-
nation inherent in a selection process whether created by the organiza-
tion or society—it forces administrators of selection processes to
examine how protected groups may be negatively impacted by facially-
neutral selection criteria.

Higher Education and Disparate Impact Analysis

Higher education institutions are subject to disparate impact analyses
under Department of Education regulations mandated under Title VII
(Perez, 2004). Recently, the Supreme Court has dismantled the legal
remedies available to individuals in selection processes through the dis-
no longer have a private right to action to remedy disparate impacts under
departmental regulations; therefore any legal remedy currently must be
undertaken by a federal department. Despite its legal background, dis-
parate impact can be applied as a means of evaluation by institutions of
higher education. Thus, *Alexander v. Sandoval* should be irrelevant.

Two higher education studies have applied disparate impact theory
and adverse impact techniques. Approximately thirty years ago, admin-

istrators at UC Berkeley’s Graduate Division examined sex bias in the graduate admissions process (Bickel, Hammel, & O’Connell, 1975). In the analysis of aggregate level data, large adverse impacts against women were found. However, after disaggregating the data by academic department, only a few departments were found to make admissions decisions outside of what was predicted by statistical tests. This finding led the authors to caution against drawing false conclusions from aggregate level data.

In a recent analysis, Jackson (2006) examined the hiring of African American males in academic leadership positions. Jackson concluded that an adverse impact exists when the hiring of African American males for academic leadership positions is compared to White males, despite the increasing representation of African American males over time. We employ a similar method to examine URMs in the UC pipeline pre and post 209.

Using the disparate impact theoretical framework as a foundational guide, the following research questions and testable hypotheses were developed and pursued:

1. Are the UC application, admissions, and enrollment rates for URMs and non-URMs significantly different? Note: In the Method section we operationalize what “significant” in this context means.
2. How do these application, admissions, and enrollment rates change before, during, and after the implementation of Proposition 209?

Method

Research Design

This study uses publicly available data from the UCOP and California Postsecondary Education System. Notably it uses three time points to reflect pre- and post-209 time periods: academic years 1995, 1998, and 2002. We chose academic year 1995 to capture the effect of a pre-209 college selection process, 1998 to capture the potential “cooling” effect of the implementation of 209, and 2002 to measure the effects after 209. Our intent is to compare URMs against non-URMs for the three time points and different stages in the enrollment process in order to determine disparate impact and the magnitude of the effect of Proposition 209. While every admissions cycle is subject to policy-related fluctuations in rates of application, admission, and enrollment, there are observable trends in the pre- and post-209 time periods. Prior to the implementation of SP1 and
Proposition 209, UC URM rates of application, admissions, and enrollment, were relatively stable with dramatic declines occurring during the implementation of these two policies, and there have been modest rebounds in the subsequent years. Each of these time periods (1995, 1998, and 2002) is generally representative of these three trends (UCOP, 2003, p. 15).

Within each year (1995, 1998, and 2002) we examine three phases of the college selection process: application, admission, and enrollment rates. We begin our step analysis by selecting those students in California who are eligible to apply to the UC system as defined by the UC eligibility standards. Despite a number of criteria, such as GPA and SAT, we operationalized eligibility as those students who completed the A–G requirements because A–G completion is by far the single largest eligibility criterion that eliminates URMs from UC consideration (Board of Admissions and Relations with Schools, 2007; Oakes, 2006; Oakes et al., 2006). The limited access URMs have to A–G requirements stems from both limited course offerings in majority-minority schools coupled with differential class access within schools along racial lines (Oakes, 2006; Oakes et al. 2006). We understand that using A–G completion as a proxy for eligibility in some cases will yield a liberal estimate for those students who complete their coursework, but do not meet GPA or SAT requirements. Conversely, it also produces a conservative estimate for those students who may not complete A–G requirements, but earn ELC; a common phenomenon in California high schools with high URM populations (Oakes et al, 2006). Of primary concern in this study is the effect of Proposition 209 on URM access to the UC system, and therefore, we feel these trade-offs justify the use of A–G as a suitable, baseline criteria for UC eligibility.

Next, we analyze the proportion of URMs who applied and was actually admitted. Finally, we examine what proportion of URMs who was admitted actually enrolled. Within this conceptualization of eligibility we compute three sets of ratios for each step. This design feature allows us to determine whether or not disparate impact exists, the magnitude, and in what phase of the college selection process. The following equations are mathematical representations of each phase: application, admission, and enrollment rates are represented by equations 1, 2, and 3, respectively.

\[
\text{Application Rate}_{\text{URM}} = \frac{\text{URMs}_{\text{Applied}}}{\text{URMs}_{\text{Eligible}}} \quad 1
\]
To determine adverse impact in selection rates towards URMs, we first calculate an impact ratio for URMs as *prima facie* evidence that disparate impact may be occurring. Second, we test for significant differences in selection rates between non-URMs and URMs using a Standard Deviation Test both UC-wide and for the individual campuses at the selected years.

The general form for tests of adverse impact are as follows: (a) Compute the rate at which a particular protected group (URMs) was selected for a step in college selection; and compute the rate at which the corresponding comparison group (non-URMs) was selected for the same step; and (b) Compare the two selection rates to determine whether a significant disparity between the rates of selection exists (PRI Associates, 1996). Impact Ratio Analysis Test (not a statistical test) evaluates whether or not the protected group is selected at a rate that is less than 80% the rate of the corresponding comparison group. The Impact Ratio general form:

\[
\text{Admitted Rate}_{URM} = \frac{\text{URMs}_{\text{Admitted}}}{\text{URMs}_{\text{Applied}}} \quad 2
\]

\[
\text{Enrollment Rate}_{URM} = \frac{\text{URMs}_{\text{Enrolled}}}{\text{URMs}_{\text{Admitted}}} \quad 3
\]

If the result or “impact ratio” is less than 80%, it establishes *prima facie* evidence that adverse impact has occurred and calls for further analysis using statistically valid tests.

In contrast to the Impact Ratio Analysis Test, the Standard Deviation Test is an empirical test of statistical significance. It is used by the Office of Federal Contracts and Compliance Programs (OFCCP) to determine whether statistically significant disparities exist between the group of people in question and group of people not in question (i.e., comparison group). If rather than being a measure of dispersion from the mean, the common application of standard deviation analysis measures the dispersion of the group of people in question’s application rate from the comparison group’s application rate. If the deviation in application rates is less than –2 SDs, an adverse impact is indicated and a claim of disparate impact can be argued. The Standard Deviation Test general form:
Where,

\[ N_1 = \text{URMs UC} \]
\[ N_2 = \text{Non-URMs UC} \]
\[ N = \text{Total UC eligible} \]
\[ X = \text{Actual URM applied} \]
\[ Y = \text{Actual Non-URM applied} \]
\[ n = \text{Total applied} \]

and, distribution is normally distributed.

Assuming a normal distribution of the sample, a result of less than –2 SDs and –3 SDs indicates that a significant adverse impact towards URMs at the \( p \leq 0.05 \) and \( p \leq 0.005 \) levels, respectively, exists.

**Results**

As outlined in the Method section, we first calculated impact ratios for the UC system. We then calculated impact ratios for the individual UC campuses for the three aforementioned college selection phases. Finally, this process was repeated for the Standard Deviation Test.

Impact ratios (URM vs. non-URM) were calculated for the UC System application, admissions, and enrollment rates in 1995 (pre-209), 1998 (implementation of 209), and 2002 (post-209). They produced the results shown on Table 2:

The application impact ratio\(^7\) after the implementation of Proposition 209 dropped below the 80% threshold\(^8\) (1998, \( i.r. = 0.65 \); 2002, \( i.r. = 0.73 \)) suggesting a disparate impact on applications from potentially eligible students that occurred due to the ballot initiative. While the admissions and enrollment ratios favor non-URM students in post-209 college

### TABLE 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Application Ratio</th>
<th>Admission Ratio</th>
<th>Enrollment Ratio</th>
</tr>
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<td>1995</td>
<td>0.80</td>
<td>0.96</td>
<td>0.98</td>
</tr>
<tr>
<td>1998</td>
<td>0.65</td>
<td>0.87</td>
<td>0.91</td>
</tr>
<tr>
<td>2002</td>
<td>0.73</td>
<td>0.88</td>
<td>0.91</td>
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selection cycles, both did not drop below the 80% threshold. Using the same test on the eight individual UC campuses provided the following results shown in Table 3:

All but one of the individual campuses in 1995 showed a disparate impact in the application process; the exception being UC Riverside (1995, i.r. = 0.95). There were no campuses in admissions or enrollment that dropped below 0.80 in 1995. This changed in 1998 when three adverse impacts occurred during the admissions process of the three most academically selective institutions (Berkeley, i.r. = 0.65; Los Angeles, i.r. = 0.68; San Diego, i.r. = 0.67). There were still no adverse impacts experienced during the enrollment phase at any of the eight campuses.

In 2002, the adverse impact in the application process remained at the seven campuses, but the admissions adverse impact changed. Berkeley and UCLA did not show adverse impacts during the admissions process (although UCLA’s was extremely close at i.r. = 0.80), UC Irvine (2002, i.r. = 0.73), and UC San Diego (2002, i.r. = 0.79) both had adverse impacts during this cycle. The enrollment impact ratios still showed no adverse impacts at any of the institutions. These results are a necessary and meaningful exploratory analysis, however, they are not sufficient in providing statistically significant evidence of disparate impact and the magnitude of such impact.

To address this, we subsequently ran the Standard Deviation Test for the UC System. Table 4 reveals that all but one result in the enrollment phase were statistically significant: 1995 enrollments (SD = –1.44), indicating that campuses successfully kept yield rates of admitted URMs equivalent at that time.

Most importantly, URMs experienced disparate impacts throughout the application process in the pre-, during, and post-209 periods (1995, SD = –29.1; 1998, SD = –56.1; 2002, SD = –48.6). These trends increased substantially in 1998 with the implementation of Proposition 209 and decreased in the post-209 era; however, they are still significantly greater in magnitude than the pre-209 era.

While the disparate impact URMs experience during the admissions phase is being gradually reversed after 209 (1998, SD = –56.1; 2002, SD = –48.6), the adverse impact grew greater in magnitude between these two time points within the admissions (1998, SD = –24.8; 2002, SD = –30.1) and enrollment phases (1998, SD = –8.60; 2002, SD = –9.39). While the overall admissions process at UC resulted in an adverse impact towards URM students during and after the implementation of Proposition 209, a disparate impact towards URMs existed prior to 209 and affirmative action only partially mediated the overall disparate impact inherent throughout the UC admissions process.
TABLE 3
Impact Ratios for Individual UC Campus URM Applications, Admissions, and Enrollments

<table>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkeley</td>
<td>0.71</td>
<td>1.49</td>
<td>0.91</td>
<td>0.59</td>
<td>0.65</td>
<td>1.00</td>
<td>0.64</td>
<td>0.92</td>
<td>0.92</td>
</tr>
<tr>
<td>Davis</td>
<td>0.55</td>
<td>1.16</td>
<td>0.96</td>
<td>0.47</td>
<td>0.94</td>
<td>1.07</td>
<td>0.51</td>
<td>0.90</td>
<td>0.83</td>
</tr>
<tr>
<td>Irvine</td>
<td>0.72</td>
<td>0.91</td>
<td>0.80</td>
<td>0.54</td>
<td>0.87</td>
<td>0.97</td>
<td>0.68</td>
<td>0.73</td>
<td>0.81</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>0.83</td>
<td>1.30</td>
<td>1.16</td>
<td>0.63</td>
<td>0.68</td>
<td>1.12</td>
<td>0.74</td>
<td>0.80</td>
<td>1.14</td>
</tr>
<tr>
<td>Riverside</td>
<td>0.95</td>
<td>0.97</td>
<td>1.27</td>
<td>0.89</td>
<td>0.88</td>
<td>1.23</td>
<td>1.00</td>
<td>0.89</td>
<td>1.41</td>
</tr>
<tr>
<td>San Diego</td>
<td>0.55</td>
<td>0.89</td>
<td>0.74</td>
<td>0.46</td>
<td>0.67</td>
<td>1.06</td>
<td>0.58</td>
<td>0.79</td>
<td>0.85</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>0.70</td>
<td>0.91</td>
<td>0.96</td>
<td>0.59</td>
<td>0.95</td>
<td>1.18</td>
<td>0.66</td>
<td>0.95</td>
<td>1.18</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>0.84</td>
<td>1.01</td>
<td>0.96</td>
<td>0.63</td>
<td>0.90</td>
<td>0.99</td>
<td>0.68</td>
<td>0.88</td>
<td>0.99</td>
</tr>
</tbody>
</table>

To better understand where in the UC System these adverse impacts were occurring, we conducted the same analysis for the eight individual campuses (see Table 5).

Adverse impacts occurred at all eight campuses during the application phase in 1995 (low Riverside, $SD = -2.14$; high San Diego, $SD = -36.15$), and these trends worsened in 1998 (low Riverside, $SD = -5.64$; high San Diego, $SD = -50.94$). While all institutions experienced increases in the magnitude of their application phase adverse impacts between 1995 and 1998, the trend was not as linear in 2002.

The changes that occurred in the 2002 application process saw a decreasing adverse impact at Berkeley (1998, $SD = -36.06$; 2002, $SD = -34.94$), Los Angeles (1998, $SD = -36.04$; 2002, $SD = -29.10$), and San Diego (1998, $SD = -50.94$; 2002, $SD = -49.15$). This trend among the three most selective schools was the opposite of some less selective UCs such as Davis (1998, $SD = -42.30$; 2002, $SD = -47.33$), Santa Barbara (1998, $SD = -33.57$; 2002, $SD = -34.37$), and Santa Cruz (1998, $SD = -21.25$; 2002, $SD = -25.90$). The least selective institutions experienced application trends similar to those of the most selective UCs as the disparate impact lessened in magnitude at both Irvine (1998, $SD = -34.66$; 2002, $SD = -29.94$) and Riverside (1998, $SD = -5.64$; 2002, $SD = -0.02$).

At the admissions phase in 1995, half of the campuses had disparate impacts towards URMs even while using affirmative action. These tended to occur at the less selective schools of Irvine (1995, $SD = -7.34$), Riverside (1995, $SD = -2.45$), and Santa Barbara (1995, $SD = -10.63$). Joining this list was also San Diego (1995, $SD = -10.63$). This changed in 1998 when all eight universities created adverse impacts through the admission process with the three most academically selective institutions, Berkeley (1998, $SD = -14.68$), Los Angeles (1998, $SD = -15.68$), and San Diego (1998, $SD = -19.20$) having the largest demonstrated bias against URM applicants. The trends regarding these disparate impacts changed in 2002.
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<table>
<thead>
<tr>
<th>Year</th>
<th>Application Ratio</th>
<th>Admission Ratio</th>
<th>Enrollment Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>-29.1</td>
<td>-8.98</td>
<td>-1.44</td>
</tr>
<tr>
<td>1998</td>
<td>-56.1</td>
<td>-24.8</td>
<td>-8.60</td>
</tr>
<tr>
<td>2002</td>
<td>-48.6</td>
<td>-30.1</td>
<td>-9.39</td>
</tr>
</tbody>
</table>
TABLE 5
Standard Deviation Test Results for Individual UC Campus URM Applications, Admissions, and Enrollments

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Applications</td>
<td>Admissions</td>
<td>Enrollment</td>
<td>Applications</td>
<td>Admissions</td>
<td>Enrollment</td>
<td>Applications</td>
<td>Admissions</td>
<td>Enrollment</td>
</tr>
<tr>
<td>Berkeley</td>
<td>-22.03</td>
<td>20.34</td>
<td>-2.87</td>
<td>-36.06</td>
<td>14.68</td>
<td>-0.10</td>
<td>-34.94</td>
<td>3.29</td>
<td>-2.43</td>
</tr>
<tr>
<td>Davis</td>
<td>-32.21</td>
<td>12.09</td>
<td>-0.95</td>
<td>-42.30</td>
<td>-4.48</td>
<td>1.72</td>
<td>-47.33</td>
<td>8.18</td>
<td>-4.70</td>
</tr>
<tr>
<td>Irvine</td>
<td>-17.80</td>
<td>-7.34</td>
<td>-5.17</td>
<td>-34.66</td>
<td>-9.17</td>
<td>-0.64</td>
<td>-29.94</td>
<td>22.21</td>
<td>-5.15</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>-13.67</td>
<td>15.74</td>
<td>5.20</td>
<td>-36.04</td>
<td>15.68</td>
<td>3.36</td>
<td>-29.94</td>
<td>22.21</td>
<td>-5.15</td>
</tr>
<tr>
<td>Riverside</td>
<td>-2.14</td>
<td>-2.45</td>
<td>4.76</td>
<td>-5.64</td>
<td>-12.11</td>
<td>4.90</td>
<td>-0.02</td>
<td>-17.08</td>
<td>10.40</td>
</tr>
<tr>
<td>Santa Barbara</td>
<td>-20.88</td>
<td>10.63</td>
<td>-0.98</td>
<td>-33.57</td>
<td>-3.63</td>
<td>4.36</td>
<td>-34.37</td>
<td>3.87</td>
<td>4.69</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>-7.83</td>
<td>1.17</td>
<td>-0.71</td>
<td>-21.25</td>
<td>-9.22</td>
<td>-0.27</td>
<td>-25.90</td>
<td>-17.71</td>
<td>-0.28</td>
</tr>
</tbody>
</table>

As was the case with applications, the admissions disparate impact numbers improved in 2002 for the three most selective campuses: Berkeley (1998, SD = –14.68; 2002, SD = –3.29), Los Angeles (1998, SD = –15.68; 2002, SD = –9.83), and San Diego (1998, SD = –19.20; 2002, SD = –14.61). Despite these improvements, all three campuses created disparate impacts against URMs in their 2002 admissions processes.

Even more troubling was the results from the other five campuses that increased the magnitude of their admissions disparate impacts during this time period: Davis (1998, SD = –4.48; 2002, SD = –8.18), Irvine (1998, SD = –9.17; 2002, SD = –22.21), Riverside (1998, SD = –12.11; 2002, SD = –17.08), Santa Barbara (1998, SD = –3.63; 2002, SD = –3.87), and Santa Cruz (1998, SD = –9.22; 2002, SD = –17.71). The results from the admissions cycle of 2002 indicates that the implementation of comprehensive review partially mediated the disparate impact against URMs at the most selective UC campuses; however, we have yet to explain the dramatic increases in the magnitude of disparate impact at the other five institutions. It may well be that campuses employ different methods of comprehensive review, some of which rely on more formulaic criteria while the most selective have attempted to employ a broader range of criteria in the review processes.

Finally, examining the enrollment phase presents some analytical challenges. Students can apply and gain acceptance to multiple campuses, and non-URM students tend to apply to more campuses and also receive more acceptances than their URM counterparts (UCOP, 2003). Within the UC System analysis, applicants to multiple campuses were not double counted, but in the campus-specific analysis they were (e.g., a student who applies to UC Berkeley and UCLA is counted in both institutional application rates but this person counts only once for the UC System application rate). The enrollment adverse impact numbers at individual campuses are thus artificially low because students can only enroll in one university. Nonetheless, the combined results of the system in the aggregate and the individual institutions indicate that URM students are leaving the UC system at higher rates than their majority counterparts.

Despite the noted analytical challenge, there were three institutions where adverse impact towards students occurred during the 1995 enrollment phase: Berkeley (1995, SD = –2.87), Irvine (1995, SD = –5.17), and San Diego (2002, SD = –6.12). These decreased during the 1998 cycle, as no institution within the UC system had a disparate impact during the enrollment cycle. Evidently, those URMs who were able to gain admissions also enrolled. Four years later, half of the UCs experienced Proposition 209 and Disparate Impact

11
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adverse impacts in the enrollment phase of the college selection process: Berkeley (2002, $SD = -2.43$), Davis (2002, $SD = -4.70$), Irvine (2002, $SD = -5.15$), and San Diego (2002, $SD = -4.04$), indicating more difficulty in attracting their admitted URM students.

Discussion

The results are alarming both in terms of the adverse impact experienced by URM students throughout the college selection process and the generally increasing nature of this adverse impact. While these numbers worsen in the wake of Proposition 209, it is important to note that even while using affirmative action, URM students were still adversely impacted by UC admissions requirements, the application, and the admissions decision processes.

The application results from 1995 produced a significant, adverse effect on URM students. This trend considerably worsened in 1998 and made a modest improvement by 2002. A possible explanation for the modest recovery by 2002, compared to 1998, is due in some part to UC targeted outreach, which may have helped stem the tide of qualified applicants who were not applying; however, the decline experienced in 1998 could have been the result of the “chilling effect” generated by the negative publicity surrounding Proposition 209 (Orfield, 1998). Future research needs to examine the application adverse impact trend in the wake of current outreach budgetary cuts to see if the adverse impact increases or decreases. An increasing adverse impact would speak to the efficacy of the outreach programs.

This rebound by 2002 in applications was not experienced by all campuses. While UC Berkeley, UCLA, UC Riverside, and UC San Diego improved, UC Davis, UC Santa Cruz, and UC Santa Barbara actually increased the magnitude of the adverse impact at the application phase. This could imply that part of the rebound experienced by the more academically prestigious and selective UC campuses came at the expense of the less academically prestigious and perhaps ones with fewer resources. UC Riverside, however, is a confounding factor in this hypothesis.

Those URM students who did apply experienced an adverse impact in the admissions decisions as well. UC System-wide, there was an aggregate adverse impact during the 1995 admissions phase when affirmative action was allowed. This adverse impact, as expected increased in magnitude after the implementation of Proposition 209 as evidenced by the 1998 standard deviation test results.

After the loss of affirmative action, the UCs implemented comprehensive review in an attempt to counter the impact of Proposition 209 on the
admissions process (Pusser, 2004). Contrary to expectations, the elimination of racial considerations resulted in an increased disparate impact on URM applicants between 1998 and 2002 at the system level. However, the disparate impact results declined for the three most selective UC campuses between 1998 and 2002. This indicates that the various implementations of comprehensive review at the campus level have served to minimize the disparate impact in the admissions process. While comprehensive review may have aided URMs in the admissions phase at the UC Berkeley, UCLA, and UC San Diego campuses, it is not a substitute for race-conscious policies as the data indicate that there remains some level of disparate impact. In short, these facts suggest that more has to be done as comprehensive review has only somewhat mitigated the decline.

This trend in the aggregate admissions data was consistent among the individual campuses. The 1995 admissions processes at four of the eight campuses resulted in disparate impacts (UC Irvine, UC Riverside, UC San Diego, and UC Santa Barbara); however, all eight indicated disparate impact by 1998. This was expected with the dismantling of affirmative action, and all institutions that produced adverse impacts in 1995 saw these adverse impacts increase in magnitude. Just like the UC aggregate data, the adverse impact occurring at all eight campuses in 2002 illustrates that comprehensive review is insufficient to counter the loss of affirmative action.

There was also disparate impact in the post-209 enrollment phase of the college selection process. Those URMs who did gain UC admissions attended other institutions at significantly higher rates than their majority counterparts and this trend is growing. This reinforces Geiser and Caspary’s (2005) findings, and is cause for concern as the UCs are losing students to both their private competitors and out-of-state schools. That is, campuses have not been as successful in terms of enrolling the talented students they have admitted. This indicates a need for race-sensitive admissions financial aid as a recruitment incentive that can allow the UCs to compete for this talent pool. In the absence of this tool, the UC system is at a competitive disadvantage for talented students.

We believe this is an important indication as we know that students in their selection for college are affected by myriad of issues and costs net of aid that are important factors. Financial aid is important to the college choice process (Hossler, 2000; Hossler, Braxton, & Coopersmith, 1989; Hossler, Schmidt, & Vesper, 1999; McDonough, 1997) and has been shown as particularly relevant to student preference when choosing between first and second choice institutions. Some of the differences that
were found in these studies can also be attributed to applicants’ responses to changes in higher education costs (Heller, 1997; Leslie & Brinkman, 1987).

As previously illustrated, the disaggregated enrollment standard deviation scores provide some analytical challenges, but they are still informative. The adverse impacts that resulted from the 1995 enrollments disappeared by 1998. Given the increased barriers to URM students making it to the enrollment decision in a post-209 environment, this makes intuitive sense. The preparation necessary to gain admissions is so rigorous that those who made it through at this phase generally chose to enroll. However, the enrollment adverse impacts reappeared in 2002 specifically at some of the most selective schools in the UC System—UC Berkeley, UC Davis, and UC San Diego.

This reinforces the argument that talented students are either being filtered to less selective UCs in addition to leaving the system in favor of private and out-of-state schools (Geiser & Caspary, 2005). The sifting to less selective UCs, however, is not the dominant feature of the system because, as previously discussed, the entire UC System revealed a disparate impact in 2002 enrollments. Therefore, those URM students who do make it through the entire system are frequently choosing to enroll elsewhere. As URM students are choosing alternatives to the UC System, these institutions stand to erode their competitive edge as talented students are being lured by other schools.

Implications

Throughout the three phases of the college selection process after the implementation of Proposition 209, URM students experienced adverse impacts. Those who undertook a college preparatory curriculum tended not to apply; those who applied were generally admitted at lower rates than their majority counterparts; and those who were granted admissions frequently declined UC’s offer and left the system. Moreover, even when race was a consideration in the admissions process, URM students experienced adverse impacts when applying and in admission at UC indicating that racial considerations were able to ameliorate the disparate impact that occurs in the admissions process but not eliminate unequal access. The narrow inference suggested by our findings is that the need to institutionalize the value of diversity whereby all phases of the college selection process become race-conscious exists. An individual program as was the case of affirmative action, is insufficient to address this massive challenge. Instead, the broader inference that can be drawn from our findings is that the need exists for the entire system to adopt a broader
Comprehensive review and targeted outreach grew out of the elimination of affirmative action, but, as previously indicated, they are insufficient substitutes for race-conscious admissions. This does not imply, for example, that comprehensive review and affirmative action are mutually exclusive components of creating institutional diversity. Rather, they can both be mutually reinforcing entities; especially considering that affirmative action alone was also insufficient in eliminating the UC adverse impacts in a Pre-209 admissions environment.

These results indicate that the elimination of affirmative action was associated with a downturn in the application rate of traditionally underrepresented students to the University of California system. Similar declines in application rates at University of Texas at Austin after the Hopwood case and subsequent to the Supreme Court’s finding of the University of Michigan’s undergraduate admissions system broadly indicates that the removal of or a negative legal action towards affirmative action may imply to students that a particular campus is not welcoming to all racial/ethnic backgrounds. Therefore, the lack of or a threatened affirmative action program may dissuade African American and Hispanic students from applying.

We recommend that UC undertake significant, visible, public actions to demonstrate the university’s commitment to diversity specifically towards members of the groups most impacted by the implementation of Proposition 209. Also recommended are increased outreach efforts to cultivate a larger number of UC-eligible underrepresented students applying, largely dismantled due to the state and university’s budgetary crisis. Finally, we recommend that the university reexamine its eligibility and admissions requirements and standards not “reasonably related” to educational success in order to eliminate disparate impact towards specific racial or ethnic groups.

It is imperative that this issue be addressed immediately because California is a minority-majority state where White and Asian students by themselves cannot maintain California’s current levels of economic prosperity. If talented African American, Latina/o, and American Indian students are leaving the state, California’s economy will continue to suffer due to a “brain drain” as other universities across the nation are eager to siphon off California’s abundant talented pool of URMs. In short, if California increased its minority students’ participation in college to the same percentage as that of white students, it is estimated that it would create an additional $73 billion in GDP (Carnevale & Fry, 2000).
In addition, the UCs represent the best public higher education system in the world, and it remains that way through large public subsidies. If segments of California’s population are systematically excluded from participation in the UC system (e.g., African Americans, Latina/os, and Native Americans), this hurts both the students as well as the communities that lose their next generation of doctors, lawyers, and teachers. In effect this redistributive system takes money from low-income, communities of color to support affluent, generally White communities. This creates a “Reverse Robin Hood“ system whereby taxes from minority communities support a system from which they generally do not benefit, as represented by their low proportional enrollment numbers relative to their proportional representation in the state (Hansen & Weisbrod, 1969; Heller, 2005).

Whether a person takes a utilitarian economic or social justice rationale, increasing diversity in the UC system is justifiable and necessary. This entails valuing diversity at all phases of the college selection process through tangible actions (e.g., targeted outreach). This is also insufficient if the students are not graduating, thus, diversity must be institutionalized in all facets of the university: from application through graduation. Affirmative action is only one, yet significant part of the strategy of keeping these students and developing them into educated, productive members of society.

Suggestions for Future Research

Given the consistent disparate impact among URMs found in this undertaking prior and after Proposition 209, the next step is to identify the policies or eligibility requirements that are causing the adverse impact. In the application time point, one current UC policy that may be causing a disparate impact is the substantial standardized testing requirements of taking the ACT or SAT I and two SAT II subject tests, which require considerable financial resources to complete. Similarly, the UCs strict reliance on standardized testing in determining eligibility for all but the top 4% of students per high school, and the racial inequities inherent in standardized testing (Jencks & Phillips, 1998) indicate that this requirement may direct academically capable students, measured through weighted course work, away from the UC system.

A final policy that may possibly cause a disparate impact is the university’s early application filing period for fall admissions which lasts from November 1st to 30th for the class of 2007. This narrow and early application period disadvantages high schools without resources to handle a large volume of college applications in a narrow time frame, espe-
cially given California’s abhorrent student to counselor ratio of about 1000 to 1 when the recommended ratio is 100 to 1 (McDonough, 2004).

In addition to the policies potentially causing an adverse impact at the application decision point, the admissions criteria used internally by each institution consistently caused adverse impacts after the implementation of Proposition 209. One possible cause of disparate impact in the admissions decision process is the overreliance on formulaic admissions criteria to achieve efficiency in the review process. For example, at UC San Diego over a quarter of the total possible points a student can receive in application evaluation are based on standardized testing (Comeauz & Watford, 2006), while the College Board, owner of the tests required by UC, specifically warn against an over-reliance on test scores (College Board, 2002).

While the over-reliance on test scores in the UC admissions process may be one possible cause of disparate impact, the advantages given to students with the availability of Advanced Placement (AP) courses could be an additional cause. The UC admissions process awards bonus GPA points for students who enroll in AP classes (Solorzano & Ornelas, 2002). This feature of the admissions process is most troubling as the system’s own research indicates that GPAs unweighted for AP and honors coursework is a better predictor of academic success than weighted GPAs (Geiser & Santelices, 2007).

Another possible cause of disparate impact is reader bias. There exists variability as to compensation of readers. For example, UC Berkeley pays its readers while UCLA recently began to pay its readers. Such readers along with some volunteer readers are used in the admissions process to evaluate applicants. UCs Berkeley and San Diego claim to recruit readers from a variety of backgrounds each year; however UCLA discourages reader turnover, which may result in a more biased grouping of admissions readers (Comeauz & Watford, 2006). Additionally, UCLA has a large percentage of its readers from private schools, which may not reflect the tremendous diversity of the Los Angeles area and ultimately could result in a bias towards the demographic of students who attend private high schools.

The URM students who survive the admissions process opt for colleges outside the UC system at rates significantly larger than their majority peers. Most likely, this is due to the competitive advantage private and out of state public institutions possess, as they are able to offer scholarships with racial considerations. However, the “chilly” campus climate perceived by URMs may contribute to their increased departure rates from the UC system; it is a matter of further investigation by recent study groups on diversity (BOARS, 2008).
Notes

1URMs are American Indian, African American, or Chicano/Latino as defined by the UCOP report, on Undergraduate Access to the University of California after the Elimination of Race-Conscious Policies. Report commissioned in 2003.

2Comprehensive review ensures applications are read in their entirety in order to give consideration for multiple measures of academic and personal accomplishments, life experiences such as work that may depress traditional definitions of merit (i.e., grades and SAT scores), as well as performance in the context of different opportunities available to students in differently resourced high schools. For a full explanation of eight specific comprehensive review guidelines please see “Guidelines for Implementation of University Policy on Undergraduate Admissions” at http://www.ucop.edu/sas/adguides.html.

3A–G requirements consist of the following subject areas: (a) history/social sciences; (b) English; (c) mathematics; (d) laboratory science; (e) language other than English; (f) visual performing arts; and (g) college-preparatory electives. For a comprehensive understanding of the requirements see: http://www.universityofcalifornia.edu/admissions/undergrad_adm(paths_to_adm/freshman/subject_reqs.html

4For the remainder of this paper, when we refer to, for example, “academic year 1995” or “1995,” we are referring to those students who applied during the 1994–95 admissions cycle and were enrolled as first-time, full-time freshmen during the 1995–96 academic year.

5The OFCCP accepts the standard deviation test as a method to prove or disprove the likelihood of adverse impact. The regulations (41 CFR § 60-2.17) require federal contractor’s to analyze their “personnel activity (including but not limited to applicant flow, hires, terminations, and promotions) to determine whether there are selection disparities.” “However, it is important to note that the regulations do not provide guidance on how to analyze this information. This is usually left to the discretion of the contractor. In this case the contractor is the UC and the flows we refer to are the selection rates at various stages of the application process.

6This conservative test at 2 SDs has been used in court and is generally accepted by the federal Office of Contracts and Compliance.

7Impact ratio test results are denoted by the abbreviation i.r. For sample sizes used in calculating the impact ratios please see original samples in UCOP (2003).

8We selected 80% as this is a commonly selected threshold for the federal government’s Office of Federal Contracts and Compliance known as the 80% rule or 4/5ths rule widely adhered to by employers with 50 employees or more.

9For this analysis, we did not include UC Merced or UC San Francisco because the former was not in existence during the implementation of Proposition 209 and the latter is a graduate only institution.

10The Standard Deviation Test results are denoted by the abbreviation SD.

11If a student is accepted at five UCs and attends one, they have an enrollment rate of 1/5 or 0.2 whereas a student who applies to two and enrolls in one has an enrollment rate of 1/2 or 0.5. URM tended to apply to, and are therefore accepted at, fewer UC institutions than their majority counterparts. Thus, the lack of adverse impacts in the enrollment phase is an artifact of this trend.

12For African Americans and Latinos alone the equalization in participation rates could lead to an additional $58 billion in GDP.

References


Proposition 209 and Disparate Impact


University of California, Office of the President. (2003). *Undergraduate access to the University of California after the elimination of race-conscious policies.* Oakland: University of California.
