Access without equity: Longitudinal analyses of

institutional stratification by race and ethnicity, 1972-2004

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Abstract

Institutional stratification describes differentiation in the U.S. system of postsecondary education by colleges and universities' missions, admissions selectivity, and returns to earned degrees. In this paper, we examine how the competitive dynamics that sustain institutional stratification have reinforced racial inequalities in highly selective college and university enrollment since 1972. With a dataset constructed from four nationally representative NCES databases (NLS, HSB, NELS and ELS), we use multinomial logistic regression to track the role of escalating admissions credentials—including pre-college academic preparation, college entrance exam scores, and extracurricular involvement and leadership—in effectively maintaining enrollment disparities by race/ethnicity. On average, Black and Latino high school students have made strides in their academic preparation for selective institutions. However, enrollment inequities in persist due to admissions practice of comparative evaluation, in which escalating credentials are rewarded and Black and Latino students remain at a competitive disadvantage. Access to the postsecondary education system has thus expanded since 1972, but Black and Latino students' odds of enrolling in selective institutions have declined relative to White and Asian American students.

Access without equity: Longitudinal analyses of institutional stratification by race and

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Building on a generation of research into expanding higher education access, scholars

have begun attending to the structure of access to specific types of colleges and universities

(Trow, 1988; Hearn, 1991; Karen, 2002; Kingston, 1999; Grodsky, 2008; Authors, forthcoming).

Such research recognizes that the U.S. system of postsecondary education is highly stratified by

mission, selectivity, and returns to earned degrees—a phenomenon we refer to as institutional

stratification (Author, 2003). Inequality inheres in institutionally stratified systems, but academic

leaders and policymakers tacitly accept it as the price to be paid for benefits of efficiency and

legitimacy. However, the competitive dynamics that sustain institutional stratification may also

reinforce other forms of social inequality. In this paper, we examine the intersections of

longitudinal trends in institutional and racial[1] stratification using a dataset constructed from four

nationally representative NCES databases.

To assess institutional stratification, we employ a six-category measure of initial post-

secondary enrollment ranging from non-enrollment, to enrollment in vocational and community

colleges, to enrollment in four-year institutions with four levels of selectivity. Our analysis

reveals that accounting for selectivity captures significant detail about the progress we have

made toward equitable postsecondary outcomes. We find that escalating credentials and

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[1] The NCES databases we use (NLS, HSB, NELS, and ELS) apply the same race/ethnicity classification scheme as the U.S. Census. Due to extremely small sample sizes of Native Americans/ American Indians in our institutions of interest, we focus our analyses on individuals who identify as White, Black/ African American, Asian American, and Hispanic/ Latino/a in the wave of data collection following high school graduation. Since two Census categories are explicitly racial (i.e., White and Black) and two are ethnic (i.e., Asian American and Latino), we use the language of "race/ethnicity" to describe the groups. Race and ethnicity are distinct constructs, but given America's racialized society and education system, we use "racial" to describe trends across racial/ethnic groups.

competition for admission to selective institutions help explain the continued underrepresentation of Latino and Black students in selective institutions. Given America's history of unequal college access on the basis of ascriptive traits such as race and ethnicity, one would expect that an increased emphasis on academic criteria would promote more equitable postsecondary enrollment outcomes. And, on average, underrepresented minorities have made great strides since 1972 in their academic preparation for selective institutions. But since all groups realize similar rates of increases in academic achievement, college entrance exam scores remain unequally distributed *and* minimum requirements for admission continue to rise, then the seemingly more equitable standard has not and cannot be expected to produce more equitable outcomes. Access to the system as a whole has expanded while patterns of racial stratification within it persist.

Selective institutions do not fit all high school graduates' learning needs, and we do not wish to elevate their intrinsic value over other institutional types. However, the paradox of expanding access and continuing stratification is a pertinent concern given continued enrollment imbalances by race and accumulating evidence about the gains that accompany education in these institutions. Baccalaureate completion rates increase with institutional selectivity, both nationally (Astin, 1985; Carnevale & Rose, 2003; Long, 2008; Bowen, Chingos, & McPherson, 2009) and among students of color specifically (Bowen and Bok, 1998; Melguizo, 2010). Graduation from selective institutions is also associated with a range of positive labor market outcomes (Brewer, Eide, & Ehrenberg, 1999; Hoxby & Long, 1998; Monks, 2000). Over time, diversifying selective American colleges and universities has the potential to help counter racialized patterns of class inequality and, as Justice Sandra Day O'Connor wrote in her opinion for *Grutter vs. Bollinger*, "cultivate a set of leaders with legitimacy in the eyes of the citizenry,"

whose increasing diversity is a demographic fact. In light of the increasing benefits of selective

college enrollment and concerns about ethnic diversity in such institutions, it is important to

understand changes over time in students' postsecondary destinations.

The overarching objective of our research is therefore to examine institutional

stratification by race between 1972 and 2004, a time of significant change in both American race

relations and access to postsecondary education. This research makes both empirical and

conceptual contributions to the literature. Empirically, we help resolve conflicting findings from

previous scholars about Black and Latino enrollment in selective institutions. Some find that

students of color are more likely to attend more prestigious institutions than Whites *ceteris*

paribus (Bowen & Bok, 1998; Grodsky, 2007), while others conclude underrepresented

minorities have stronger odds of enrolling in community colleges and less selective colleges

(Hearn, 1991; Karen, 2002; Karen & Dougherty, 2005). To determine whether the contradictory

findings may be an artifact of cross-sectional data use, we link four time-varying datasets to

analyze how changing racial inequalities in postsecondary enrollment are associated with other

trends during this period.

One trend that we identify—escalating admissions requirements to selective

institutions—bridges our empirical and conceptual contributions to the literature. Increases in the

necessary and sufficient credentials for admissions to selective institutions help explain

persistent racial/ethnic stratification over time. We find the requirements include not only

academic preparation, as documented by Grodsky (2007), but also extra-curricular involvement

and, increasingly, leadership. Students from all racial/ethnic groups have higher grades and more

college preparatory coursework in 2004 than 1972, but Black and Latino students' odds of

enrolling in selective institutions are declining over time relative to White and Asian American

students due to the increasing importance of SAT/ACT scores and admissions officers' use of comparative evaluation. When applicants' files are compared with one another, escalating credentials from all groups keeps Black and Latino students at a competitive disadvantage. Holding preparation, test scores, and extra-curriculars equal, enrollment disparities disappear for Black students and, become advantages over White students for Latino students.

Through these findings, we suggest selective admissions serves as a microfoundation for effectively maintained inequality (EMI) across race in post-secondary enrollment. Lucas suggests the mechanisms for inequality in high school tracking and college enrollment lie foremost with parents' socioeconomic status. Advantaged groups, he argues, protect their relative position in educational transitions that have become universal (e.g., year-to-year progress through high school) by seeking qualitative advantages in those transitions (e.g., college preparatory curriculum tracks). We investigate whether this process also explains how individuals are allocated to destinations in a racially stratified post-secondary system. Baccalaureate aspirations have become universal (Goyette, 2008) and college enrollment rates have risen for all racial/ethnic groups (Grodsky, 2007), but White and Asian students have maintained a qualitative advantage in this transition on average due to their greater access to selective four-year institutions. Through our focus on comparative evaluation and escalating admissions credentials, we argue the microfoundations of access to selective institutions since 1972 involve not only family goal setting and seeking, as Lucas and other EMI scholars would assert, but also the dynamics of institutional gatekeeping.

Literature Review and Theoretical Framework

Academic preparation and the market for selective colleges/ universities

Postsecondary enrollment is the outcome of an iterative process consisting of individual

pursuit (i.e., aspiration, application, and choice) and institutional access (i.e., admission).

Thresher (1966) noted this 45 years ago in his multi-level analysis for the College Entrance

Examination Board: "In the market for higher education, just as in the job market or the marriage

market, the process of search, appraisal, and selection go on continuously, on both sides, and

emphases shift according to reciprocal needs and scarcities." Since the 1950s, markets for higher

education have become progressively more stratified on the basis of selectivity. In a process of

"fanning out," system expansion has occurred in the two-year sector, while applications to

selective institutions have increased much faster than enrollment (Hoxby, 2009; Bound,

Hershbein & Long, 2009). With demand far outpacing supply in the selective sector, the result at

the system level is a widening selectivity gap between the most and least selective four-year

colleges from 20 percentiles in the 1950s to 76 percentiles in 2007 (Hoxby, 2009).

Increasing demand helps explain rising competition for spaces in the top ten percent of

colleges. Degree expectations continue to rise (Goyette, 2008) and college choice among well-

qualified students is increasingly motivated by attraction to a college's resources and student

body rather than distance from one's home (Hoxby, 2009). These resource considerations

involve the anticipated economic returns, institutional prestige, and degree completion and

graduate school placement rates associated with such institutions (Hoxby & Long, 1998; Frank

& Cook, 1995; Bound, Hershbein, & Long, 2009; Author, 2009). As the perceived returns to

education in a selective institution have risen, more individuals have sought enrollment.

Meanwhile, admissions offices have also contributed to stiffening competition due to the

financial and reputational benefits of enrolling more academically accomplished students

(McPherson & Shapiro, 1998). Institutional rankings processes create strong incentives for

admissions offices to privilege applicants' high school academic achievement in admissions

decisions (Alon, 2009; Author, 2011). Over time, institutional financial aid offerings have also become more responsive to student academic characteristics and less responsive to financial need (Doyle, 2010).

As in other competitions where the number of aspirants exceeds the number of opportunities, student qualifications in selective undergraduate admissions are assessed not in an absolute sense but relative to other applicants (Frank and Cook, 1995). This system of comparative evaluation demands some criteria be used to distinguish among many qualified applicants (Klitgaard, 1984). Therefore, the highest-achieving students increasingly tend toward institutions that ranking systems construct as prestigious, while prestigious institutions use comparative evaluation to admit progressively higher-achieving applicants. Students and institutions are caught up in an escalating cycle of reactivity and self-fulfilling prophesies through their evaluations of the admissions and rankings processes (Espeland & Sauder, 2007). We hypothesize the following:

> **H1a:** The academic preparation (i.e., advanced course taking, grades, and percent of students taking standardized tests) of high school graduates from each racial/ethnic groups has increased over time.
> **H1b:** However, average increases in Black and Latino academic preparation have not eliminated disparities in preparation because White and Asian students' preparation has increased at a similar or higher rate.
> **H1c:** Over time, the proportions of White and Asian high school graduates enrolling in highly selective institutions will remain higher than the proportion of Latino and Black students.
>
> **H2a:** The positive effect of academic preparation on enrollment in selective colleges and universities has grown over time, nationally and for each racial / ethnic group separately.

Affirmative action in principle and practice

Although institutions have a stronger incentive than ever to enroll students with the highest academic credentials, key admissions criteria (e.g., college entrance exams) are not

equally distributed across race and SES (Rothstein, 2004; Grodsky, et al, 2009; Alon, 2007).

Espousing commitments to diversity in their student bodies (Goldberg, 1998; Karabel, 2005), up

to half of moderately and highly selective institutions thus report having practiced affirmative

action (Grodsky & Kalgorides, 2005). Affirmative action in the 1960s and 1970s served as a

reaction to political mobilization for civil rights (Skrentny, 1996) and has received continued

support as norms about the value of diversity diffused throughout the American consciousness,

often supplanting norms about institutional mandates to remedy past injustices (Karabel, 2005).

That support may be waning. Supreme Court judgments in *Regents of the University of*

*California vs. Bakke (*1978), *Grutter vs. Bollinger (*2003), and *Gratz vs. Bollinger* (2003) ruled

that the diversity rationale provides sufficient legal grounds for public universities to consider

race in a narrowly tailored holistic evaluation, but lower court decisions and ballot initiatives

have banned consideration of race in public institutions in five states (i.e., California in 1996,

Texas in 1996, Washington in 1998, Florida in 2000, and Michigan in 2006). Changes in the

policy environment may also affect institutional decision making outside of these states.

According to College Board survey data, nearly half of the 1300 four-year institutions reported

consideration of "minority status" at some point between 1986 and 2003, but its relative

importance declined significantly in the mid 1990s (Grodsky and Kalgorides, 2008).

        In principle, affirmative action was originally intended to remediate the social injustices

that led Black, Latino, and Native American students to be underrepresented in selective

institutions (Karabel, 2005; Chen, 2007). In practice, affirmative action involves sensitivity to an

applicant's race *vis a vis* his academic profile and the institution's objectives as well as

consideration of non-academic traits such as extra-curricular leadership that may signal the

student's potential to succeed academically and contribute to the institution (Klitgaard, 1984;

Karen, 1990, 1991; Takagi, 1992; Gurin, Dey, Hurtado, & Gurin, 2002). Karabel (2005) and

Grodsky (2007) argue that admissions offices in moderately and highly selective colleges and

universities changed their definitions and criteria of merit—sometimes softening criteria such as

the SAT and other times adding criteria – to construct cohorts that reflect stakeholders'

perceptions of a just society. Given White and Asian American students' higher average

academic preparation and achievement, and the fact that affirmative action conditioned the

environment for admission during the years we study, we expect Whites' apparent enrollment

advantage in selective institutions may be reduced by controlling for indicators of academic

achievement.

> **H2b:** Holding academic preparation constant, disparities between Whites and other
> groups' odds of enrolling in selective institutions will decline over time.

Intersections of race and socioeconomic status

As expectations about baccalaureate degree attainment have spread, additional value has

been conferred to the types of colleges students attend and the degrees they earn (Frank and

Cook, 1995). However, families with different levels of socioeconomic status may interpret the

"college for all" norm differently. Given rising college costs, and often with more modest higher

educational histories, first-generation and lower-SES families may display debt aversion

(McDonough & Calderone, 2006; St. John, 2003) and see college of any sort as a relatively elite

activity (Schmidt, 2007). For these families, college enrollment involves maximizing

affordability and opportunity, and they are more likely to view two-year and open four-year

institutions as solid entry points into higher education.

On the other hand, consistent with Boudon (1974) and Breen & Goldthorpe's (2005)

notion of relative risk aversion, high-SES families strive to maximize status and opportunity

through college enrollment by pursuing the most prestigious college education they can

(Bourdieu & Passeron, 1990; Kingston & Lewis, 1990; Hoxby, 2009). With an often tacit goal of

preventing downward mobility, college enrollment represents the culmination of a long effort by

high-SES parents to engage children in activities and opportunities that others will read as

distinctive human, social, and cultural capital (Lareau, 200310, 2009; Stevens, 2007). Evidence

to date suggests that neither debt aversion among low-SES families nor risk-aversion among

high-SES families differs across ethnic groups. Therefore, over time, we hypothesize:

> **H3:** An increasing proportion of students of color in highly selective institutions will be
> from families with high socio-economic status.

Meanwhile, academic escalation makes it increasingly difficult to distinguish

academically qualified applicants from one another. We are approaching ceiling effects for key

measures of academic quality such as grades and test scores (Hoxby, 2009). As a result, holistic

evaluation of all applicants' non-cognitive traits and extra-curricular experiences may become an

unintended legacy of the affirmative action era (Stevens, 2007; Sternberg, 2010; Melguizo,

2010). Here, the admissions logic of comparative evaluation gives an edge to those who surpass

necessary academic thresholds *and* who sufficiently distinguish themselves from conventional

high-achievers (Klitgaard, 1984; Bennett, Lutz, & Jayaram, 2011), such as through high status

extracurricular credentials (which are disproportionately observed from students in high SES

families), legacy status (Soares, 2007; Espenshade, Chung, & Walling, 2004) and/or by

contributing to institutional diversity (Bowen, Kurtzweil, & Tobin, 2005; Karabel, 2005). We

hypothesize the following:

> **H4a:** Extra-curricular involvement and leadership will be increasingly important
> predictors of enrollment in selective institutions, nationally and for each racial/ethnic
> group separately.
> **H4b:** Students of color with strong academic profiles, extracurricular leadership, and
> high SES will have the highest likelihood of enrollment in highly selective institutions.

Method

Data and Sample

Our data consists of a nationally representative sample of high school completers from the 1972, 1982, 1992, and 2004 high school senior classes, utilizing data from National Longitudinal Survey 1972 (NLS), High School & Beyond 1980 (sophomore cohort) (HSB), National Educational Longitudinal Survey 1988 (NELS), and Educational Longitudinal Survey 2002 (ELS). We only included students who completed high school within 1.5 years of their high school graduating class, because the most recent wave of the ELS survey interviewed students 1.5 years after the high school graduating class of (June) 2004. We constructed the sample to be consistent across cohorts. To be consistent with NLS, which begins with a nationally representative sample of 12th graders in 1972, we excluded students who are not in 12th grade when the rest of their cohort begins 12th grade. Because only ELS2002 utilizes hot-deck imputation for key covariates we set ELS-imputed variable values equal to missing.

Weights. To make inferences about change over time in the national population of high school completers, we select a weight variable that is consistent across all surveys. Table 1 in the supplemental materials shows the availability of weights by survey for the restricted data used in our study. We selected a weight variable, which we have named "LONGWGT," which is non-zero for students who were survey respondents in 12th grade and who were survey respondents two years later, when students identify initial postsecondary attendance. Consistent with Bound, Hershbein, & Long (2009), we also created a single dataset, with results weighted so results are nationally representative of the high school graduate population.

Dependent variable. We created three different measures of first institution attended

using (1) using only Postsecondary Education Transcript (PETS) data (available only for NLS72,

HS&B, and NELS); (2) using only survey response data; and (3) using a combination of PETS

and survey data. This research used the measure created using only survey data because missing

postsecondary transcripts led to weighted postsecondary attendance rates that were lower for

NLS (52%) and HSB (57.3%) using PETS data than for survey data (57.0% and 65.6%,

respectively). Moreover, we wished to use a consistent data type across cohorts, and PETS is not

available for ELS2002.

Next, we merged selectivity data from Barron's *Profiles of American Colleges* (1971,

1981, 1991, 2003) to create a seven-category outcome variable reflective of the Barron's

categories: 1) does not attend postsecondary education; 2) 2-year or a less than 2-year institution;

3) non-competitive 4-year institution; 4) competitive institution; 5) very-competitive institution;

6) highly-competitive institution; 7) most-competitive. Due to very low numbers of students of

color enrolled in the most-competitive institution category, we combined categories six and

seven, resulting in a six-category postsecondary enrollment outcome measure ranging from no

postsecondary education to most-competitive. See Table 2 in the supplemental materials for a

distribution of colleges and universities across these six categories.

Covariates. Demographic and admissions credential covariates were included in the

models. Demographic variables included race/ethnicity, gender, socioeconomic status quartile,

and urbanicity. The National Center for Educational Statistics (NCES) has collected data on race

and ethnicity in their surveys in accordance with the five standard federal categories: White, non-

Hispanic, Black, non-Hispanic; Hispanic; Asian or Pacific Islander; and American Indian or

Alaskan Native.[2] In addition, ELS provided respondents an option of Multiracial/Other, which

we include in analyses for the 2004 cohort. We established cut points for the SES quartile

variable by sorting the weighted sample by continuous SES in ascending order and dividing the

sample into four groups of equal size. We then created dichotomous variables for each SES

quartile in anticipation of non-linearity between SES and postsecondary outcomes.

Pre-collegiate academic preparation variables include SAT/ACT score, high school GPA,

highest math course passed, and highest science course passed. We constructed the SAT/ACT

score variable by (1) determining composite SAT and ACT scores; (2) re-centering ACT test

scores for HS&B and SAT scores for HS&B and NELS to reflect modifications to the ACT in

1989 and the SAT in 1995; (3) converting ACT scores to SAT scores with standardized

concordance tables; and, (4) selecting the higher composite score if students took both the SAT

and the ACT. Of the students who indicated taking the SAT and/or ACT, test scores were

missing for 3.3% in NLS, 38.7% in HS&B, 23.9% in NELS, and 10% in ELS. We imputed

missing SAT/ACT test scores for students who indicate taking the SAT/ACT, using the average

of the math and reading components from the standardized senior year test taken by all NCES

survey respondents.[3]

The variables we created for high school GPA, highest math course passed, and highest

science course passed utilize raw course-level high school transcript data not available for

NLS72. Given the centrality of academic preparation to our research questions, we therefore

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[2] Recognizing many individuals select Hispanic as the closest category in data collection efforts but disapprove of that label and instead identify with the broader Latino/a community (Alcoff, 2005), we opt for using Latino in our discussion of results.

[3] It should be noted that we also tried imputing missing data for SAT/ ACT using rescaled senior year test scores, and compared regression results from models with SAT scores to a model with imputed SAT scores. The coefficients were not statistically different, but the model with imputed SAT scores had better model fit due to larger sample size. Therefore, our final models employ imputed SAT scores.

excluded the 1972 cohort from multivariate analyses. Math and science course taking was

defined using standard "pipeline" measures (Burkam & Lee, 2003; Dalton, Ingels, Downing, &

Bozick, 2007) (See Supplemental Table 3).

To examine whether rising admissions standards include both extra-curricular and

academic dimensions, we also included in our model self-reported measures of one's

participation in key extra-curricular activities (student government, honors society, athletics,

vocational club, academic club).   For NELS and ELS a self-reported, dichotomous report of

whether the student had been a leader in any extra-curricular activities was also available and

included in the model.

Finally, we included controls for a characteristics found in previous research to influence

selective college enrollment. These variables include degree expectations (less than bachelors,

bachelors, masters, and doctoral/professional degrees), high school urbanicity (urban, suburban,

and rural), high school control (public, Catholic, other private), and high school region. Where it

was available (i.e., in NELS and ELS), we created covariates for immigrant status (first

generation, second generation, non-immigrant).

Analysis

For hypotheses requiring multivariate analysis, the structure of our dependent variable

prompted our choice of methodology. One could interpret non-enrollment and the Barron's

categories as ordinally ranked, implying an ordinal logistic regression. However, we found that

the parallel regression assumption (Long & Freese, 2003) on which ordinal logistic regression

rests was violated for our dependent variable. That is, the slope between a covariate and the

dependent variable was not the same for all categories of the dependent variable. Instead, we

employed a multinomial logistic regression model (MNLM), which creates M – 1 logistic

regression equations for the M outcome variable categories minus one for the base outcome J,

non-selective 4-year institution. Therefore, for each covariate there are M – 1 coefficients.

Equation (1) shows the general equation used in our multinomial logistic regression model:

$$p_{ij} = \frac{e^{x_i' \beta_j}}{\sum_{l=1}^{m} e^{x_i' \beta_l}}, (1)$$

Where p_{ij} is the probability of individual i experiencing postsecondary outcome j out of a

total number of m possible outcomes; x_i is a vector of race/ethnicity, demographic, degree

expectation, and academic preparation variables; and β_j is the vector of coefficients for these

covariates on the probability of experiencing postsecondary outcome j.

In MNL, coefficients (b) are expressed in terms of log odds. A unit change in the

independent variable is associated with a b unit change in the log of the odds of the outcome

occurring. To simplify interpretation, we reported most findings in terms of odds ratios, which

raise e to the power of b. The odds ratio represents the factor change in the odds of an outcome

associated with a one-unit change in the independent variable (one unit on the scale of

continuous variables and 0/1 for dichotomous variables). We also calculated predicted

probabilities of admission to selective institutions for select student profiles.

Each of the four surveys in our dataset utilizes a stratified random sample, first sampling

U.S. high schools and then students within them. We therefore specified the variance-covariance

matrix to be estimated with robust standard errors. Students within high schools are more likely

to be similar than students in different high schools. Less variation exists within a sample that

selects students within specific high schools than a sample that selects students entirely at

random. We use cluster robust stand errors – clustering on the high school – to acknowledge the

correlation within high schools. Therefore, our standard errors are higher than they would be if

students were selected entirely at random.

Table 4 in the supplemental materials outlines the weighted and unweighted sample sizes for each cohort. White students comprise a majority of the weighted sample in each cohort (Supplemental Matierals Figure 1), but previous research shows that the factors predicting White students' postsecondary outcomes may not be the same ones explaining outcomes among Asian America, Black, and Latino students (St. John, Paulsen, & Carter, 2005). Therefore, in addition to the general model, we estimated the model separately for each race category to determine whether there are differences across race in the factors that predict postsecondary enrollment. For these analyses, we also took advantage of the availability of data in NELS and ELS on students' immigrant status and extra curricular leadership and included these factors in the model. To determine the value added by these additional variables, we calculated scalar measures of logistic model fit for nested models (e.g., Akaike's Information Criterion [AIC] and Bayesian Information Criterion [BIC]) as recommended by Raftery (2001) and Long and Freese (2003).

Limitations

The principal limitations of our study derive from the demands of constructing a longitudinal dataset. While use of a consistent categorization scheme across time is a paramount concern in constructing a longitudinal dataset, the coarse NCES and U.S. Census race/ethnicity scheme obscures considerable intragroup diversity in academic preparation and post-secondary outcomes. Aggregating all Asian American students is particularly problematic, given that the mean preparation, SES, and post-secondary outcomes of students with Southeast Asian origins often more closely resemble that of Black and Latino students than the East Asian ancestry students who comprise the majority in the Asian American category (Hune, 2002; Kiang, 2004; Chang and Kiang, 2002). Through analyses of trends in each racial/ethnic category we try to

examine diversity within groups and cohorts, such as by SES and immigrant status; however, we do not advise that our findings be interpreted to structure programs or policies that affect "Asian" students' college opportunities, writ large.

One advantage of the Barron's criteria is that they are well defined across levels of selectivity and have changed little since 1972. This stability is important since the dependent variable used in our analysis applied the 2004 Barron's rankings to all years. However, fixing the 2004 rankings means that a small proportion of institutions were counted as more selective in 1972, 1982, or 1992 than they may have actually been.

Analytically, growth in the African American, Asian American, and Latino/a populations during the time period we study, means that group averages take into account more variation in 2004 than in 1972. Similarly, high school graduation rates determine our analytic samples for each cohort, and our models do not account for increases since 1972 in the national high school graduation rate. Defining enrollment within 1.5 years of high school graduation may downwardly bias estimates of Black and Latino students' post-secondary enrollment, since those groups are more likely to delay initial college enrollment. Similarly, to the extent that community college transfer has become a more viable pathway to four-year institutions over time, our results may underestimate the proportion of students who go on to four-year schools. Finally, the research we report here does not account for tuition and financial aid—two factors that may incline students toward particular institutional types.

Results

Hypothesis 1: Institutional stratification and rising academic preparation

To test hypothesis 1, we examine weighted descriptive statistics about changes over time

in the average academic preparation of U.S. high school graduates. We find evidence supporting

hypothesis 1a, that average pre-college academic achievement has significantly increased along

the dimensions of high school science and math course taking, high school grades, and percent of

students taking college entrance exams (See Table 1 for details of each cohort's composition and

Supplemental Table 5 for significance tests across cohorts).

INSERT TABLE 1 ABOUT HERE

Per hypothesis 1b, we find that academic preparation increases occur in similar rates

across race, so that initial disparities are preserved over time (See Figure 1 and Supplemental

Materials Table 5). Nationally, the mean highest science course taken increased from 3.28 to

4.10 (p<.001), which corresponds practically to an increase from General Biology to Chemistry 1

or Physics 1. We also find mean increases for students from each racial/ethnic category, with

Asian students consistently displaying the highest mean math and science course taking

(p<.001). While the gap in coursetaking narrowed for Black students and widened for Latino

students in 1992, the pattern in 2004 closely resembles that of 1982 (Figure 1a and 1b).

High school graduates of all backgrounds are also earning significantly higher grades. In

the sample as a whole, mean cumulative grade point average (GPA) increased from 2.62 in 1982

to 2.86 in 2004 (p<.001). However, as with math and science coursetaking, relative gaps in

average GPA across race are preserved even as each group realizes overall increases.

INSERT FIGURE 1 ABOUT HERE

The percent of students taking entrance exams and mean scores on these exams both

point to increased preparation for postsecondary education. The two statistics are related, for

with an increase in the size of the test-taking pool, we expect lower average scores. Indeed, the

the mean SAT score has declined by about 50 points, which is likely due to a rising population of

test-takers.Between 1982 and 2004, the proportion of students taking either the SAT or ACT

increased, both overall and within racial/ethnic groups (See Figure 5 in the Supplemental

materials). Nevertheless, we still observe increases in the mean SAT scores of Black, Latino,

and Asian American students (See Supplemental Materials Table 7). Asian Americans have the

highest mean SAT score is in each cohort, and a higher proportion of them take the entrance

exams than White, Latino, and Black students in each cohort.

Focusing on those who enroll in the most selective institutions, we observe widening

differences in mean SAT scores by race, from 141 points between White and Black students'

mean scores in 1972 to 202 points between Asian American and Black students' mean scores in

2004 (Figure 2).

INSERT FIGURE 2 ABOUT HERE

As is expected given rising postsecondary preparation, the percent of each racial/ethnic

cohort enrolling in any postsecondary education within 18 months of graduation increases

between 1972 and 2004 (Figure 3). With steeper gains in overall enrollment coming from the

most underrepresented racial groups, the enrollment gap reduces by more than half, from 44

percentiles to 20 percentiles. Notably, the percent of Black students not enrolling in post-

secondary education is cut in half, from 52.6% to 26.3%. Against this backdrop of expanded

access and improved academic preparation, however, lower initial enrollment rates in selective

institutions persist among Black and Latino students compared to White and Asian students.

INSERT FIGURE 3 HERE

Per hypothesis 1c, we find that similar rates of increase in academic preparation result in

little change in institutional stratification (See Figure 4). Black and Latino students do realize

significant gains in access to selective colleges and universities, if we define them as any four-

year institution employing a competitive admissions process. By 2004, 22.7% of Black high

school graduates enroll in a selective college or university (up from 14.8% in 1972) compared

with 16.2% of Latinos, 40.3% of Whites and 50.9% of Asian Americans (Figure 3b). However,

all racial/ ethnic categories make such gains during this time period, such that the overall

selective college enrollment gap—one marker of institutional stratification by race— is slightly

wider in 2004 as it was in 1972.

Looking at the most selective institutions (Figure 4) stratification by race appears even

more pronounced than in selective colleges, generally. Enrollment rates between 1972 and 2004

modestly increase from 1.6% to 1.9% among Black students and from 1.4% to 3.4% among

Latino students. Consistent with Asian American and White students' higher mean grades,

entrance exam scores, and advanced course taking, a greater percent of those students enroll in

the most selective category of colleges and universities over time (from 11.6% in 1972 to 16.4%

in 2004 for Asian Americans, and 4.7% to 7.3% of Whites). Put another way, for every one

hundred Asian American high school graduates, 16 enrolled in one of the most selective colleges

in 2004, compared to only two of every 100 Black high school graduates.

It is possible that gains in elite college enrollment may be driven by expansion of the elite

categories or greater academic preparation; to more closely examine the academic preparation

hypothesis, we employ multinomial logistic regression (Hypothesis 2).

INSERT FIGURE 4 HERE

Hypothesis 2: Academic preparation and odds of enrolling in selective institutions

Tables 2 and 3 display the findings of our MNL models. High school GPA, SAT scores,

and highest math and science courses taken are all associated with significantly higher odds of

enrollment in one of the most selective institutions relative to an open four-year institution. Of

these, GPA, SAT, and highest high school math course support our hypothesis that the positive

effect of academic preparation on enrollment in selective colleges has grown over time (Table 2).

The increasing importance of SAT scores is perhaps the strongest longitudinal trend. While in

1982 a standard deviation increase in SAT is associated with a 2.7 times higher odds of enrolling

in one of the most selective institutions (p<.001), by 2004 it is associated with a 5.4 times higher

odds (p<.001). The positive relationship of grades and enrollment also strengthens. By 2004,

each standard deviation increase in GPA is associated with a 40% higher odds of enrolling in a

very competitive (p<.001) and 69% higher odds of enrolling in a most competitive (p<.001)

institution relative to an open four year institution. Coefficients for highest math course taken

also trend upward, indicating that advanced math courses increasingly predict enrollment.

In further support of hypothesis 2a, academic preparation indicators are among the

strongest factors in the models run separately for each racial/ethnic group (Table 3). An

exception to this is high school grade point average and highest math course taken for Latino

students, (but trending toward significance between 1992 and 2004).[4] While highest science

course taken is associated with enrollment for the sample as a whole, this is not the case for

individual racial groups. Together, we find support for Hypothesis 2a, that the positive effect of

preparation on enrollment has grown. However, we find SAT scores are the most important

component of academic preparation for the national sample and individual racial groups, and

highest science course taken is less important in 2004 than in 1972.

<div align="center">**INSERT TABLE 2 ABOUT HERE**</div>

<div align="center">**INSERT TABLE 3 ABOUT HERE**</div>

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[4] Small samples of Latino students enrolling in highly selective institutions result in low
statistical power and thus possible Type II errors in estimating the factors predicting their
enrollment.

Next, we test hypothesis 2b, which suggests that equal levels of academic preparation measures will be associated with reduced enrollment disparities across race. We compare a baseline model including only the racial/ethnic categories of interest with a full model including demographic controls and our indicators of academic preparation. Across all three cohorts, the baseline model confirms Black and Latino students' lower odds of enrolling in competitive, very competitive, and most competitive institutions compared to Whites' (Table 2). In 1982 and 2004, Black students' odds of enrollment *decrease* relative to Whites in more selective institutions. In 2004, Black students had 83% lower odds than White students of enrolling in one of the most selective institutions compared to a 73% lower odds in 1982. Asian students' odds of enrolling in institutions with the highest selectivity relative to a non-selective four-year institution increase over time, and in all years except 1982 are significantly higher than White students' odds ($p<.001$). The overall trend in regression coefficients, however, corroborates the hypothesis that Black students' odds of enrolling in the most selective institutions is declining relative to other types of institutions and relative to Whites' and Asians' opportunities (Table 4). Running a similar model in which Asian American students were excluded as the reference group confirmed this finding.

INSERT TABLE 4 ABOUT HERE

Controlling for demographic factors, degree expectations, and academic preparation changes the relationships considerably. Differences in enrollment odds between Black and White students are no longer statistically significant in any of the cohorts, suggesting enrollment disparities may be attributed in part to associated disparities in academic preparation. Holding academic preparation constant not only equalizes Latinos' odds of enrollment by 2004, but produces a 156% higher enrollment odds than White students', ceteris paribus ($p<.0001$). In summary, our results clearly support Hypothesis 2b, that racial disparities in selective college

enrollment decline over time if academic preparation is held constant. Differences by race in academic preparation—which are an outcome of a racialized, unequal K-12 schools—help explain why Black and Latino high school graduates are less likely than their White counterparts to enroll in America's most selective colleges and universities.

Hypothesis 3: Extracurricular leadership and enrollment in selective institutions

Descriptive and multivariate evidence converge to support our hypothesis that extracurricular involvement and leadership is increasingly important for enrollment in highly selective schools. In each racial/ethnic category, the percent of students enrolled in the most competitive institutions reporting high school extracurricular leadership more than doubles from 1992 to 2004 (Figure 5). In the two cohorts in which we have leadership data, Black students in the most selective institutions report extracurricular leadership at the highest rates (35% up to 74%), followed by Whites (30% up to 69%).

INSERT FIGURE 5 HERE

According to the MNL of the whole sample (Table 3), leadership does not predict enrollment in a highly selective institution for the 1992 cohort, but it is strongly, positively associated with enrollment in the most selective institutions in 2004 (p<.001). Controlling for everything else in the model, extracurricular leaders in high school in the 2004 cohort have 75% higher odds of enrolling in the most selective institutions relative to non-competitive four year schools (p<.001). Leaders are also more likely to enroll in competitive and very competitive institutions relative to non-competitive four-year colleges. In the models disaggregated by race/ethnicity, extracurricular leadership predicts enrollment in the most selective institutions among White, Black, and Asian American students, but not Latinos. Latino students enrolled in the most selective institutions also have the lowest self-reported rates of high school

extracurricular leadership. Although we are only able to compare two cohorts, these data support

Hypothesis 3, that extracurricular leadership is an increasingly important predictor of enrollment

in selective institutions.

Hypothesis 4: Race, socioeconomic status, and institutional stratification

Descriptive statistics provide clear backing for Hypothesis 4a, that an increasing

proportion of students of color in highly selective institutions will be from families with high

socioeconomic status. White students still comprise the majority in selective colleges nationally,

but enrollment has become more racially diverse over time (See Figure 6a). However, with this

diversity we also observe declining SES diversity among students of color, as increasing

proportions are from the highest SES quartile (Figure 6b). The proportion of Whites in the most

competitive institutions who are from the highest SES quartile has hovered around 70% since

1972. By contrast, while only 9% of Black and 9% of Latino students in the most selective

institutions were from the highest SES quartile in 1972, by 2004 this had risen to 49% of and

35%.

       INSERT FIGURE 6 HERE

Finally, to examine Hypothesis 4b, that students of color with strong academic

achievements and high SES have the highest probability of enrolling in highly selective

institutions, we calculate predicted probabilities from our model of the national sample. Figure 7

displays the 2004 probability of enrollment for honor society members whose SAT and high

school GPA are one standard deviation above the national mean, and how this probability

changes across the range of observed values of SES. As anticipated, high SES students from all

racial/ethnic groups are significantly more likely to enroll in selective institutions than lower

SES students. Although small sample sizes lead to relatively large confidence intervals for

Black and Latino students, the probability of enrolling in one of the most selective universities is

13 percentile points higher for Latinos than Whites and 9 percentile points higher for Black than

White students. Moreover, we find that while hypothesis 4b holds in 1982, 1992, and 2004, the

probabilities of selective college enrollment given the same academic profile are much higher for

all groups in 1982 than in 2004, suggesting stiffening competition over time for spaces in highly

selective institutions.

INSERT FIGURE 7 ABOUT HERE

When we estimate the model separately by race/ethnicity categories, SES is a significant

predictor of enrollment in each type of selective institution for White students, but not for Black,

Latino, or Asian American students (Table 3). These results seem to contradict our earlier

finding that students of color attending selective institutions are increasingly from the highest

SES quartile, and may be due to (1) the effect of high SES on minority students operating

through academic preparation or (2) the low numbers of high-SES students of color in selective

institutions, weakening our statistical power and placing analyses at risk for a Type II error.

What the data clearly show is that high- SES White students are more likely to enroll in each

type of selective institution relative to a non-selective four-year institutions in both 1992 and

2004. In comparison to enrolling in a non-selective four year school, White students in 2004

from the lowest SES quartile had 77% lower odds of enrolling in most selective institution

(p<.01), a 52% lower odds of enrolling in a very selective institution (p<.01), and a 40% lower

odds of enrolling in a selective institution (p<.001).

In summary, to date, we find conditional support for Hypothesis 4b, that students of color

with high SES and strong SAT scores have the highest probability of enrolling in selective

institutions. High-SES students of color do have significantly higher probabilities of enrolling in

selective institutions than high-SES White students, but only where academics are equal.

However, we know that most academic preparation is not equal, that Black and Latino students

do not often have SAT scores one SD above the national mean, and that at mean and lower levels

of SES the enrollment advantage becomes non-significant. While capturing detail at one end of

the SES, institutional, and academic spectra, the probabilities we calculate do not pertain to the

majority of high school graduates.

Discussion

In selective postsecondary admissions, placing increasing importance on academic

preparation, and standardized test scores in particular, has unintended consequences for

achieving equitable enrollment outcomes. With each cohort of high school graduates, high

school grade point average, SAT scores, and high school math curriculum are associated with

greater odds of enrolling in institutions that are even minimally selective. Academic preparation

among Black and Latino students has improved across the board, but similar rates of

improvement among White and Asian students on some indicators paired with institutions'

increasing reliance on SAT scores, help to preserve institutional stratification by race. While the

share of Latino high school graduates enrolling in these institutions has more than doubled since

1972, it remains half the national average. As a result, in 2004 Black high school graduates'

enrollment in highly selective institutions remains less than one-third of the national average.

Indeed, Black students' odds of enrollment have *decreased* relative to Whites since 1982 when,

as is the case in schools and society, we do not hold constant students' academic profiles.

Addressing postsecondary enrollment disparities requires a multidimensional agenda (St.

John, Hu, & Fisher, 2010) and, where selective college enrollment is concerned, our findings

corroborate those of others who argue that academic preparation needs to play a key role in it

(Espenshade, Hale, & Chung, 2005; Alon & Tienda, 2007). When held constant, inequalities in the odds of enrolling in more selective institutions either disappear or turn into advantages for underrepresented students of color. Clearly, the declining significance of race (Grodsky & Kalgorides, 2008) and the rising role of academic preparation for all groups complicate prospects for achieving equitable enrollment outcomes in selective universities. Hence, the relationships among admissions evaluations, access, and diversity merit analysis.

Both affirmative action and admissions in selective institutions rest upon the practice of holistic evaluation, in which decision makers judge applicants not only on the basis of academic accomplishment, but also personal traits perceived to predict college success and leadership in society. In looking for applicants with "character" and "leadership," some selective universities already practiced holistic admission when affirmative action was introduced (Soares, 2007; Stampnitzky, 2006; Wechsler, 1977). Previous experience with leadership in extra-curricular activities, the argument goes, was one of the best signals of potential for future leadership (Klitgaard, 1984; Bennett, 2011; Soares, 2007). Universities like UC-Berkeley, however, also made holistic evaluation a cornerstone of their rationale for affirmative action policies (Takagi, 1992). In combination with high achievers' efforts to distinguish themselves in the pool of applicants, a significant consequence of affirmative action may have been to institutionalize the value that selective institutions place on non-academic indicators that are more equally distributed across race (Takagi, 1992; Sternberg, 2010). Affirmative action may not change admissions opportunities for the majority of underrepresented students, but studies agree that it has clear effects in the most selective universities—as it has intended to do (Bowen & Bok, 1999; Grodsky & Kalgorides, 2008). Moreover, affirmative action may have helped change the terms of selective undergraduate admissions itself by broadening considerations beyond

academic merit.

Unequal rates of enrollment have led policymakers to see high school curriculum and course taking standards as levers for improving postsecondary access (Allensworth, et al., 2009; Chazan, 1996). But as selective institutions approach ceiling effects in the ability of test scores, grades, and curriculum to distinguish applicants on the basis of academic preparation alone (noted by Hoxby, 2009), escalation in the requirements for admission to selective institutions may include both academic and non-academic traits. And, as Bennett (2011) writes, "When elite universities began to use participation in structured activities as part of their assessment of students' merit for admission, it became a mechanism for stratification" (p. 48). Our data confirm the growing importance of extracurricular activities, while challenging Bennett's conclusion that schools should therefore be more concerned with equalizing activity participation than with equalizing academic opportunities. Our data also reveal that controlling for extra curricular leadership and demographics alone does not eliminate the gap in the probability of enrollment between Blacks, Latinos, and Whites. Valuing non-academic indicators—whether it is race, extra-curricular leadership, or other psychosocial traits-- does not minimize the central and increasing role that prior academic achievement has come to play in selective admissions.

Consistent with previous research on institutional stratification and academic achievement, we find that selective universities are increasingly stratified by socioeconomic status (Author, 2011), in our case both within and across racial groups. Our predicted probabilities confirm Bowen, et al.'s (2005) finding that that high SES students of color with strong academic profiles have the best chances of enrolling in selective institutions. However, in separate MNL analyses by racial group, SES only predicts attending a highly selective college for White students. In time, as the proportion of students of color in selective institutions from

high SES families approaches the 70% rate that Whites have had since 1972, we may see SES

become a significant predictor of enrollment in such institutions across racial categories. To the

extent that minority students at selective colleges are higher in SES than they used to be, we have

a clear explanation for increases in academic preparation among minority students at selective

colleges. Together, these trends allow the postsecondary sector to remain a stratified system

while fulfilling competing demands for overall growth, racial diversity, and in selective

institutions, high rankings.

Conclusion

Although disparities in postsecondary enrollment *writ large* continue to narrow, we must

attend to the possibility that stratification –both in postsecondary access and in the labor market

outcomes that derive from this access—is being shifted to other sources within the system.

Advanced degree attainment and institutional prestige, which go hand-in-hand with institutional

stratification, are two additional foundations of racial inequality requiring our attention.

In this paper we have examined how escalation since 1972 in the necessary and sufficient

conditions for admission to selective colleges and universities may be hindering more equitable

enrollment outcomes. For instance, having a minimum SAT score and taken calculus seems to

have become a necessary, but not sufficient, condition for enrollment in very selective

institutions. Admissions committees at selective institutions clearly care a great deal about

students' academic profiles and are increasingly unwilling to admit applicants' whose numbers

are 1-2 standard deviations below that of their average student. Reliance on measures that are

unequally distributed by race—particularly test scores—plays a key role in unequal enrollment.

As universities debate their criteria for admission, we should also continue to work

toward reducing disparities in academic preparation and standardized test scores.   Our findings

reinforce the case for equity and excellence in K-12 outcomes, as well as for college access

programs that provide the college knowledge, test preparation, and advanced curriculum

selective institutions are looking for, but which may not be available in all families and

secondary schools (Swail and Perna, 2001; Gandara, 2001; Perna, 2005; St. John, et al., 2010).

Here we reiterate our earlier point that given the considerable diversity within the White and

Asian American categories (and the imperfection of the categories), our findings should not be

interpreted to structure policy or programs that may affect these groups' opportunities, writ large.

In general, intersecting race with gender, SES, immigrant status, and urbanicity better captures

the complex structure of postsecondary access more accurately than accounting only for

race/ethnicity (Author, 2011; Perna and Titus, 2004; Dougherty, 2009; Kao and Tienda, 1995).

Trends since 1972 suggest that attending to academic preparation may not be enough.

Even controlling for test scores and academic preparation, extracurriculars contribute positively

and significantly to Black and Latino students' odds of enrollment in selective institutions. As

we approach ceiling effects in the ability of standardized tests, coursework, and grades to

meaningfully distinguish among the growing number of students pursuing selective institutions,

the growing use of so-called non-cognitive criteria such as leadership should also be tracked--

and the distribution of such criteria across social origins. Extracurricular leadership in addition to

excellent academic qualifications may have constituted sufficient grounds for admission through

the early 1990s, but it appears to be a necessary condition in the 21st century. If the escalation in

recent history can be taken as our guide, what ensures a student's admission today may be

insufficient in the near future. Although we focused on demographic-level trends in preparation,

understanding of access will also be provided through research that clarifies the micro-level

processes admissions officers use to make meaning of applicant information. What is holistic

evaluation like in practice? How do admissions officers handle differences in SAT scores (Zwick, 2005) and extracurricular achievements (Kaufman & Gabler, 2004), for example? Such research could also capture additional detail about particularistic criteria that admissions officers employ to distinguish among students who are qualified along the universal criterion of academic performance (Klitgaard, 1984; Stevens, 2007). Regression analysis is suitable for picking up the criteria that are necessary for getting in to competitive institutions, but not the idiosyncrasies and experiences (e.g., taking first prize in state debate contest, starting a non-profit organization) that are sufficient for setting apart particular candidates from conventional academic achievers.

Fundamentally, however, it is not only how merit is defined (i.e., which criteria are considered), but also the nature of the admissions competition itself that make equitable outcomes so difficult to achieve. The logic of Lucas' (2001) theory of effectively maintained inequality helps illustrate the challenge. As the transition to post-secondary education has become nearly universal, advantaged individuals are increasingly seeking access to selective institutions to distinguish themselves from the masses of bachelors degree holders in the labor market (Frank and Cook, 1995). Their pursuit of such institutions, combined with elite colleges' multiple imperatives to protect low rates of admissions and high academic qualifications, compel admissions offices' use of comparative evaluation in choosing who *most* deserves admission. When evaluation is comparative, admissions becomes a competition and operates as a "winner take all" market (Frank and Cook, 1995), and. To get ahead, applicants try to present themselves with ever greater levels of the academic and personal distinctions they believe are important to admissions offices (Bourdieu, 1984; Bourdieu and Passeron, 1977). Unfettered escalation makes it more difficult to reduce disparities, and system stratification continues and/or intensifies.

Admissions officers try to mitigate these tendencies through considerations of the school environment, but tendencies toward inequality are deeply institutionalized in both admissions criteria and processes. Particularly as affirmative action policy options are limited, realizing racial equity will require ongoing efforts to reduce pre-college disparities among students seeking opportunity, as well as creative efforts among those with the power to provide it.

Tables and Figures

Table 1. Traits of 1972, 1982, 1992, and 2004 U.S. high school graduates (weighted)

	1972	1982	1992	2004
Race/ethnicity				
White	84.9%	79.3%	72.9%	62.7%
Black	8.3%	11.9%	11.8%	12.9%
Latino	3.5%	6.3%	9.7%	14.8%
Asian American	1.1%	1.3%	4.4%	4.4%
Controls				
Female	51.0%	51.4%	49.7%	51.3%
Expect LT Bachelors deg.	58.6%	52.5%	28.4%	21.7%
Expect Bachelors degree	26.0%	23.1%	34.5%	34.4%
Expect Masters degree	10.2%	10.7%	17.5%	22.9%
Expect Doc/ Prof degree	4.9%	8.0%	14.2%	13.5%
1st generation immigrant	NA	NA	4.1%	7.5%
2nd generation immigrant	NA	NA	8.4%	12.7%
Non-immigrant	NA	NA	87.5%	79.8%
HS in urban area	NA	18.2%	28.5%	28.8%
HS in rural area	NA	32.4%	30.5%	19.8%
HS in suburban area	NA	49.4%	41.1%	51.3%
Public HS	NA	89.0%	89.3%	91.3%
Catholic HS	NA	7.4%	6.7%	4.9%
Private HS	NA	3.6%	4.0%	3.8%
Academic preparation/ Extra-curricular involvement				
Mean HS GPA	NA	2.62	2.66	2.86
		(.66)	(.68)	(.67)
Mean SAT	1050.7	971.3	1003.2	1003.9
	(180.8)	(195.4)	(193.1)	(202.5)
Mean highest science taken	NA	3.28	3.84	4.10
		(1.52)	(1.52)	(1.25)
Mean highest math taken	NA	2.66	3.32	3.74
		(1.43)	(1.51)	(1.47)
HS athletics	44.7%	52.4%	43.0%	44.8%
HS honor society	15.6%	17.5%	19.7%	23.2%
HS extra-curricular leader	NA	NA	18.6%	37.3%
Postsecondary outcome				
Not enrolled	44.0%	35.7%	28.3%	21.8%
2 year	23.4%	30.0%	27.9%	30.9%
Non-competitive 4 year	8.9%	8.7%	10.5%	12.8%
Competitive	12.2%	13.4%	16.6%	18.3%
Very competitive	7.2%	7.3%	9.3%	9.8%
Most competitive	4.3%	5.0%	7.4%	6.4%

Figure 1a and 1b. Mean highest high school math and science courses passed

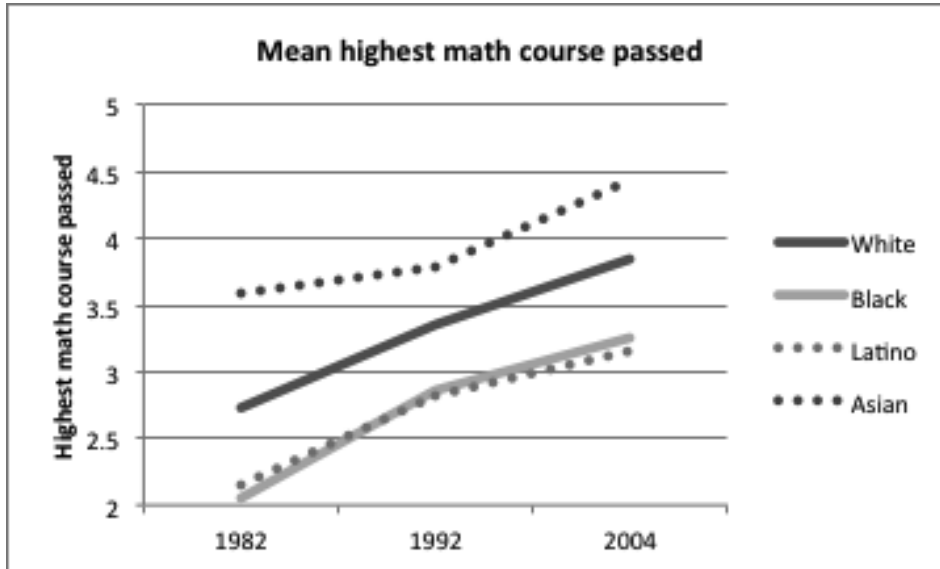Figure 1a: Mean highest high school course passed

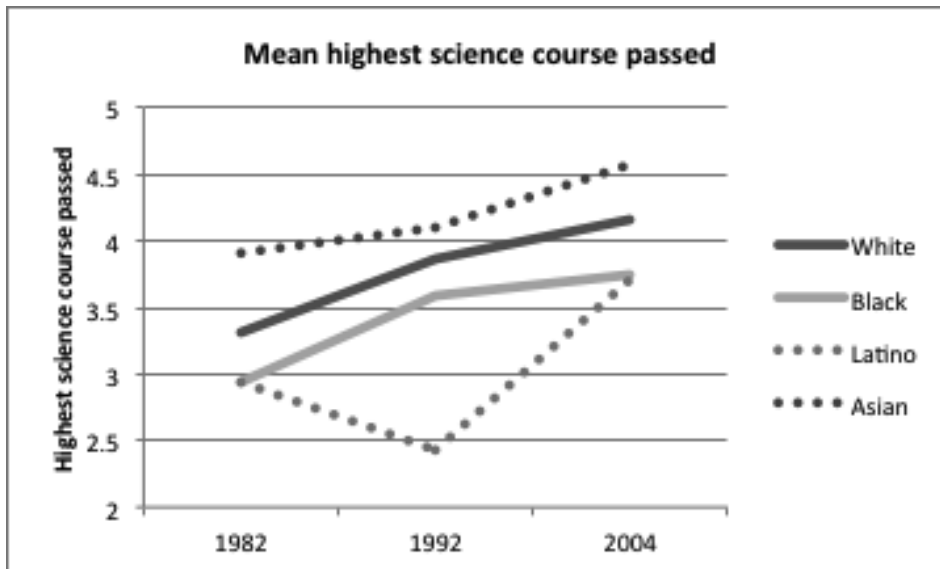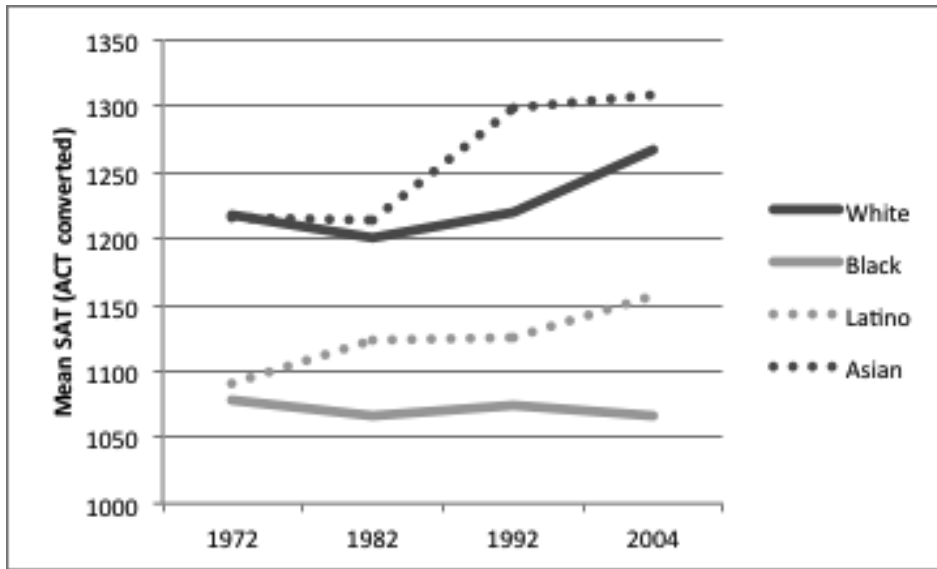Figure 1b: Mean highest high school science course passed

Figure 2. Mean SAT score by race/ethnicity in most selective institutions

Figures 3a and 3b. Percent of high school graduates enrolling in postsecondary education and competitive institutions

Figure 3a: Percent of high school graduates enrolling in any type of post-secondary education within 18 months of graduation
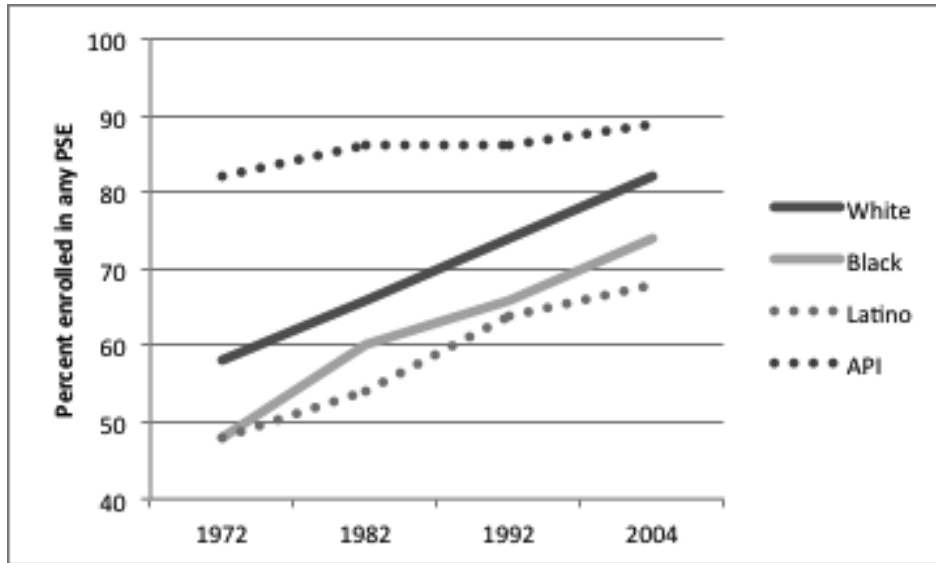

Figure 3b: Percent of high school graduates enrolling in any type of selective post-secondary education (i.e., selective, more selective, and most selective institutions) within 18 months of graduation
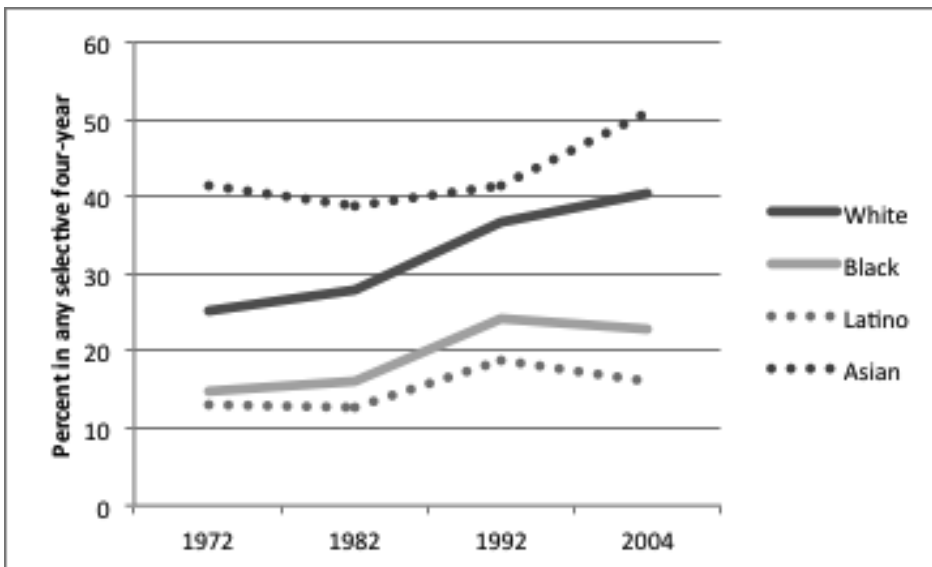
Figure 4. Postsecondary enrollment of high school graduates 18 months after graduation, as percent of racial/ethnic group