

Racial/Ethnic Disparities in Advanced Placement Participation and Performance

By

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The Advanced Placement program is a popular option for students seeking college credit and academic rigor in high school; however, it is an educational program with a history of racial and ethnic inequity. The present study aims to examine past and present disparities in racially and ethnically diverse student populations' participation in AP and performance on AP examinations.

*Keywords:* Advanced Placement, race and ethnicity, AP access, AP performance

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## **Racial/Ethnic Disparities in Advanced Placement Participation and Performance**

The Advanced Placement (AP) program offers an array of rigorous courses that afford students the opportunity to earn college credit in high school and bolster their GPA. AP is the most common way to attain college credit while still in high school, though the exam score-to-college-credit conversion varies by collegiate institution (Kolluri, 2018). Experience in the AP program gives students an opportunity to develop critical academic skills while preparing for the rigor that will be expected of them in college. College readiness is critical, as The Lumina Foundation predicts that by 2025, 60% of jobs will require a college degree of some sort (as cited by Kolluri, 2018). Advanced Placement courses and exams are uniform, standardized, and empirically supported (Finn & Scanlan, 2019; Kolluri, 2018). The curriculum is designed by College Board staff and academic experts recruited through the College Board, and the Educational Testing Service (ETS) is contracted by the College Board to oversee AP testing each spring (Zarate & Pachon, 2006). AP is not federally funded or required; rather, it is run and funded privately, and participation is generally voluntary for both teachers and students (Finn & Scanlan, 2019).

AP course performance is positively correlated with overall high school achievement (Conger et al., 2009). Furthermore, students who are more motivated and well prepared than their peers are more likely to enroll in AP courses, which may contribute to later college success (Dougherty et al., 2006). AP courses are meant to approximate the college course they correspond with, but students do not always enter the introductory college course with mastery of the subject (Sadler et al., 2010). Students who take an AP course tend to outperform students who did not take an AP course and



instead took the college-level equivalent (Darity et al., 2001). For example, students who took AP Psychology in high school often outperform students who did not in introductory psychology courses at the university level. Additionally, AP students typically outperform non-AP students in a slew of achievement measures, including three correlates of AP involvement: 1) ACT/SAT performance; 2) college attendance, admission, and GPA; and 3) time to degree completion (Xu et al., 2021). First year college GPA and 4-year completion rates are higher for students who took at least one AP exam as compared to students who took no AP exams; the strength of this association increases with each AP test taken (Phillips & Lane, 2021). According to Gagnon & Mattingly (2016), students who take part in advanced coursework are more likely to stay in college and obtain a four-year degree (Cartagena & Slater, 2022). According to several studies, qualifying scores—or scores from 3 to 5—are related to college matriculation, persistence, grades, and graduation (Phillips & Lane, 2021).

### **History of Advanced Placement**

In the 1940s, the demand for college education skyrocketed due to the sociopolitical tension of the Cold War and the enactment of the G.I. Bill (Kolluri, 2018). As a result, more effort was put toward exploring how to expedite and improve the efficacy of higher education. High schools in the 1950s were viewed unfavorably; educational reformers feared that their curricula did not keep students engaged enough to prevent delinquency, nor did it prepare enough citizens with the pristine education required amidst the tensions of the Cold War (Kolluri, 2018). The Ford Foundation established the Fund for the Advancement of Education (FAE, or the Fund) in 1951 due to demand for highly educated workers in the wake of the Cold War and Korean War

(Rothschild, 1999). One of the projects FAE supported led to a 1952 report titled *General Education in School and College: A Committee Report by Members of the Faculties of Andover, Exeter, Lawrenceville, Harvard, Princeton, and Yale*; this report provided the specifications of a program – eventually known as AP – that was aimed primarily at accelerating the educational potential of already-advanced students (Finn & Scanlan, 2019). Seven schools piloted the program initially in 1952, with another 10 implementing their program in 1953 due to the high demand of parents and teachers (Rothschild, 1999). The first 10 AP courses offered were biology, chemistry, English composition, French, German, Latin, literature, mathematics, and Spanish (Finn & Scanlan, 2019). The first common AP examinations were given in late May of 1954; however, only students in the first 27 schools to enroll in the program were permitted to take the exams (Rothschild, 1999).

Additional AP courses were added in 1971, followed by an expansion in its use within schools (Rothschild, 1999). Its mounting popularity was also attributed to the intimate class sizes of approximately twelve to twenty students. Anxiety evoked by the stagnant inflation of the 1970s, followed by the recession tied to Reagan’s presidency and then opportunities available in the mid-1980s, drew many students to the AP program in hopes that it would elevate their educational status (Rothschild, 1999). According to the 1982 Gallup Poll of *Public’s Attitudes Toward the Public Schools*, most respondents indicated that they believe education was the most important foundation of our strength as a nation; mediocrity in the education system was viewed as a threat to our nation’s future and security as a world power (National Commission on Excellence in Education, 1983). Following the 1983 release of *A Nation At Risk* by the National Commission on

Excellence in Education, AP came to be seen as a standard that could be used to motivate teachers to ramp up their curricula and help students to achieve at a higher level (Finn & Scanlan, 2019). Ironically, AP enrollment slowed following the release of *A Nation at Risk*, but it made a recovery in the 1990s when the federal government allocated \$25 million to expand AP into low-income schools in the 1990s (Kolluri, 2018).

By 1995, AP offered twenty-nine courses and examinations and half of all U.S. schools offered at least one AP course (Rothschild, 1999). Since then, the growth and expansion of AP has been substantial. According to one analysis, from 1992 to 2012, the number of schools offering AP classes doubled and the number of AP examinations given rose 500% (Judson & Hobson, 2015). Another analysis suggested, similarly, that the number of schools offering AP exams increased 84% from 1997 to 2017, with over twenty-two thousand schools offering AP exams by 2018 (Finn & Scanlan, 2019). As of 2019, approximately 3 million public and private school students take an AP course and 5 million students total take AP exams each year, making it a popular curricular option (Finn & Scanlan, 2019). English Language, U.S. History, English Literature, U.S. Government, Calculus AB, and Psychology account for approximately half of all AP exams administered annually (Finn & Scanlan, 2019).

By 1994, 26.3% of AP exam takers were minority students (Finn & Scanlan, 2019). However, exam fees had increased from \$20 in 1975 to \$72 in 1995 (Finn & Scanlan, 2019). This rendered AP exams more inaccessible to low-income students, which is a population many minority students also belong to (Klopfenstein, 2001). However, some schools and districts utilize subsidies such that low-income students, or even all students, do not have to pay for their exams (Kolluri, 2018). On the bright side,

the number of low-income students taking AP examinations quadrupled from 2003 to 2013, and this population's rate of growth is more than twice that of total AP involvement (Kolluri, 2018). As of 2020, approximately 2.6 million AP courses were offered nationwide (Palermo et al., 2022). However, when Dougherty and colleagues' report was written, only 2% of low-income students who did take an AP class successfully passed the corresponding AP exam (2006). Eight times as many Hispanic and Black students participated in an AP exam in 2017 as compared to 1997; however, they remain underrepresented within their cohort of exam takers (Finn & Scanlan, 2019).

Those in leadership positions still tend to see AP as catering to the most elite students in terms of academic achievement and social status (Cartagena & Slater, 2022). As access improves for low-income schools, they struggle to keep up with the breadth of offerings that middle- and upper-class schools are able to provide (Kolluri, 2018). Because access to AP has not expanded as much in low-income schools as in non-low-income schools, disparities in access persist. An additional concern is that the rapid expansion of the AP program may have rendered courses less effective as teachers struggle to accommodate students who may not have been ready for the rigor of content and course load (Kolluri, 2018). Furthermore, there are regional differences in the accessibility of AP, with small, rural schools offering fewer AP courses than large, urban or suburban schools (Finn & Scanlan, 2019).

### **Equity Concerns for Racial, Ethnic, and Socioeconomic Groups**

Racial differences in academic readiness and performance are large before entering school, and these differences widen gradually as children progress through the education system (Shores et al., 2020). Historically, racial disparities in AP participation

have been linked to limited AP course offerings at schools with high proportions of low-income and minority students (Kolluri, 2018; Conger et al., 2009). Teachers have more negative perceptions and lower expectations of Black and Hispanic students than they do of other students; as such, they are less likely to afford equitable educational opportunities to these students (Grissom et al., 2020). Schools with high proportions of Black, Hispanic, and low socioeconomic status students tend to offer fewer AP courses; even in schools that are predominantly White, minority and low socioeconomic status students are underrepresented in AP enrollment (Palermo et al., 2022). Low-income schools tend to suffer from low-quality instructors, heightened rates of violence, and chronic underachievement, all of which negatively impact the quality of all instruction including AP (Kolluri, 2018). Schools with higher proportions of families receiving Aid to Families with Dependent Children (AFDC) tend to have fewer AP courses than schools with smaller proportion of AFDC recipients (Zarate & Pachon, 2006).

Issues of inequity in AP can also be traced all the way back to elementary schools, wherein educators and administrators may perpetuate racially charged ideas of giftedness and intelligence that ultimately discourage students of color—especially Black students—from enrolling in advanced courses (Tyson, 2011 as cited by Kolluri, 2018; Darity et al., 2001). Teachers and administration who view intelligence as a fixed construct may believe that sorting students into homogenous groups based on prior achievement (i.e. tracking) will optimize education (Domina & Saldana, 2012). Academic tracking and lifetime involvement in special education is negatively correlated with AP participation for all racial and ethnic groups but especially for Black female students (Klopfenstein, 2001). Tracking based on academic achievement has a

disproportionate impact on Black and Latino students, which can result in segregation by socioeconomic status and race/ethnicity. Black and Latino students are more likely to end up in basic or remedial classes, while White and Asian students are more likely to be placed into advanced courses such as Honors or AP (Yonezawa et al., 2002). Minority students may begin high school less prepared than their non-minority counterparts due to their educational needs not being met in elementary and middle school (Conger et al., 2009; Jeong, 2009). Segregated schools tend to have poorer access to resources, less funding per student, and limited educational opportunities (Palencia & Shakeshaft, 2022).

In 2013, the College Board found that Hispanic, Black, and Native American students were less likely to partake in an AP course as compared to their White and Asian counterparts, even if equally prepared academically (as cited by Judson & Hobson, 2015). Relatedly, minority students are more likely to enter an AP class less prepared and with fewer academic skills than their White counterparts (Jeong, 2009). Low socioeconomic status is the most important factor driving the participation gap for Black and Hispanic students, who participate in AP programs at approximately half the rate of White students (Klopfenstein, 2004). Of all demographics, Black, Hispanic, and low-income students are most severely underrepresented in populations of students who take and pass an AP exam (Kolluri, 2018; Conger et al., 2009). Three factors found to have a causal relationship with disproportionality in a causal systems analysis were classroom environment, available resources, and course admission processes (DiFato, 2022).

Racial/ethnic differences in achievement prior to high school are one of the most important predictors of racial disparities in AP enrollment; when Xu and colleagues controlled for the White-minority achievement gap, the participation gap shrank to nearly

zero (2021). Because AP involvement has become an important determinant of success in college, reduced access can have a cascading effect on minority students' ability to access college education, as well. Black students accounted for the lowest proportion of AP exam takers in both 1997 and 2017, while Asian students took the greatest number of AP exams at both time points (Finn & Scanlan, 2019). As for passing rates on final AP examinations, these figures are about 35% lower for minority and low socioeconomic status students as compared to their White, non-low socioeconomic status peers (Palermo et al., 2022; Judson & Hobson, 2015).

The discrepancy in participation by Black students was noted as early as the 1970s by William R. Hochman, who noted that there were fewer Black students in AP courses and took this as evidence of institutional racism (Rothschild, 1999). Black students are underrepresented in every AP subject except for Spanish Language, Spanish Literature, and Italian Language (Kolluri, 2018). Black students are significantly more likely to score lower on their AP Calculus AB, U.S. History, and Biology exams than are White students; the same effect was observed for Hispanic students on the English Literature and Composition exam only (Jeong, 2009). This may be due to the presence of lower quality AP courses in schools with higher proportions of Black students or stereotype threat regarding race and achievement. Black students are less likely to attend a school that offers AP than are non-Black students (Grissom et al., 2020). Even if they do attend a school offering AP courses, Black students may shy away from such academic rigor out of fear that they will be perceived to be "acting white" by their Black peers, notions that it is "uncool" for Black students to be smart, that high achievement will isolate Black students from their Black peers, and the belief that high achievement is

a betrayal to their Black peers are pervasive (Darity et al., 2001; Kotok, 2017). Black students who are struggling academically tend to admire the efforts of their successful black peers; however, Black students who do not believe they are capable of high achievement tend to disengage from school at a young age (Darity et al., 2001).

Past research suggests that Hispanic migrant students participate in AP at significantly lower rates than other Hispanic students do, regardless of whether they are considering attending a four-year college (Klopfenstein, 2001). There is also an evident performance gap between White and Hispanic students, with fewer Hispanic students receiving a qualifying score of 3 or higher (Edwards & Sawtell, 2013). While all minority groups (except Asian students) are overrepresented among low-income examinees, Hispanic AP students account for the greatest proportion of low-income examinees, with 41.1% qualifying as “low-income” in 2012 (Edwards & Sawtell, 2013). In 2012, 54% of Hispanic students received a score of 3 or higher on an AP exam overall, but this percentage falls to 39% when AP Spanish Language is excluded (Edwards & Sawtell, 2013); this is noteworthy, as the qualifying score rate does not change for any other race/ethnic group when this AP exam is excluded. One reason Latinx students may have a lower pass rate on AP exams is that they do not feel a sense of belonging in AP classrooms, which results from majority Whiteness, prejudice, and stereotypes (Bjorklund, 2019). Recent immigrant status as proxied by Limited English Proficiency is a strong negative predictor of AP participation for Hispanic students (Klopfenstein, 2001). Overall, Bjorklund found that Latino students lack a sense of belonging in AP courses, felt that other students did not value their input, and wanted to defy stereotypes against them so they could prove they did belong (2019).



There are several sociological and philosophical approaches to understanding racial and ethnic inequities in AP, as well. Categorical inequalities are caused by the establishment of social categories into which students are divided and the meaningful differences that occur from being advantaged—or disadvantaged—by being categorized (Shores et al., 2020). According to Raterly and Hout's (1993) theory of maximally attained inequality, attainment gaps between children of advantaged and disadvantage demographics will persist until the advantaged children reach a ceiling level of attainment (as cited by Domina & Saldana, 2012). The interaction of limited opportunities, power differentials, and cultural misconceptions about non-White spaces create and sustain inequity in both community and school settings (Yonezawa et al., 2002). Classrooms are considered racial spaces, which are socially constructed spaces that have been built around white supremacy such that patterns of social mobility and immobility are established based on race (Blaisdell, 2016). Schools reproduce social inequality through the inequitable distribution of resources and opportunities, which are often related to the racial and ethnic makeup of a school (Xu et al., 2021).

### **Research Questions**

The objective of this study is to examine trends in AP participation and performance by race and ethnicity. In short, I aim to examine if historically significant disparities have existed and still exist today. As such, my research questions are as follows:

**RQ1:** Are there present-day disparities in AP participation by race/ethnicity?

**RQ2:** How has AP participation changed over time for each racial/ethnic group?

**RQ3:** Are there present-day disparities in AP performance by race/ethnicity?

**RQ4:** How has AP performance changed over time for each racial/ethnic group?

## **Method**

### **Description of Data**

Population-level data summarizing AP examination participation and performance were obtained from The College Board. The spreadsheet detailed summary data on exam participation and performance by race/ethnicity for 14 AP courses. Participation data were reported as a simple count of students in each racial/ethnic group that took the exam, whereas performance data were reported as a count of students who received each score point (1, 2, 3, 4, or 5) within each racial/ethnic group. Data for even years from 1996 to 2022 were provided as they became available for each course. The six courses selected for analysis had complete biannual data from 1996 onward.

The courses selected for analysis were English Literature/Composition, U.S. History, Psychology, Calculus AB, Spanish Language, and Biology. These courses were selected because they have complete performance and participation data since 1996 for most racial/ethnic groups. These courses also represent a variety of academic disciplines, including natural science, mathematics, humanities, and social science.

### **Racial and Ethnic Groups**

In The College Board's dataset, students were broken into nine racial/ethnic groups: American Indian/Alaska Native, Black/African American, Asian/Asian American, White, Hispanic/Latino, Native Hawaiian/Other Pacific Islander, Two or More

Races, Other Race/Ethnicity, and Race/Ethnicity - No Response. Complete biannual data since 1996 were not collected for all racial/ethnic groups across all courses. Namely, data for Native Hawaiian/Other Pacific Islander students or students of Two or More Races were not collected prior to 2016, and data for Other Race/Ethnicity were not collected after 2018.

### **Data Analysis**

Because data were summary counts as opposed to individual level data, analysis was conducted visually using graphical representations instead of using inferential statistics. Analysis required the transformation of participation and performance data into percentages and averages respectively. Performance data were also analyzed by examining the percentage of students from each racial/ethnic group who obtained a qualifying score, which is a score of 3 or higher. Changes over time were displayed visually through line graphs.

Participation data were transformed into percentages by dividing each racial/ethnic group count by the overall participation count for each year. Comparison against U.S. population demographics was determined to be a reasonable assessment of how proportionally each racial/ethnic group was represented within the AP program. As such, the calculated percentage for each group was compared to the biannual percentage of the U.S. population that group comprised in separate graphs (USA Facts, 2020; U.S. Census Bureau, 2022). Because of differences in how these groups were aggregated in U.S. census data and limited data for some groups, only four racial/ethnic groups were analyzed: American Indian/Alaska Native, Black/African American, White, and Hispanic/Latino.

Performance data for each racial/ethnic group were transformed into averages using the following equation, where the variables represent the number of students who received each score and were multiplied by the score point total they corresponded with in the numerator:

$$(1a + 2b + 3c + 4d + 5e) / (a + b + c + d + e)$$

Average scores for each racial/ethnic group were plotted on the same graph to examine group differences and changes over time. The percentage qualifying score was calculated by totaling the number of students in each racial/ethnic group who received a score of 3, 4, or 5 and dividing it by the total number of students in that racial/ethnic group for each year. These scores were also plotted on a single graph to examine group differences. Five racial/ethnic groups were analyzed: American Indian/Alaska Native, Black/African American, Asian/Asian American, White, and Hispanic/Latino.

## **Results**

### **RQ1: Present-Day Disparities in Participation**

Access was conceptualized as each racial/ethnic group's exam participation in comparison to their representation within the U.S. population. Table 1 displays the representation of each group among examinees for six different AP courses, set against the group's representation in the general population.

**Table 1**

*Representation within the Population and Among AP Examinees for Select Racial/Ethnic Groups Across Courses in 2022*

	<b>Race/Ethnicity</b>			
	<b>American Indian/ Alaska Native</b>	<b>Black/ African American</b>	<b>White</b>	<b>Hispanic/ Latino</b>
<b>Representation in Population (%)</b>	1.3%	13.6%	58.9%	19.1%
	<b>Percent Representation Among Examinees (%) (Difference from % Representation in Population)</b>			
<b>Course</b>				
<b>Biology</b>	0.7% (-0.6)	6.8% (-6.8)	46.3% (-12.6)	18.9% (-0.2)
<b>Calc AB</b>	0.5% (-0.8)	5.1% (-8.5)	49.1% (-9.8)	18.4% (-0.7)
<b>English Lit</b>	0.5% (-0.8)	8.5% (-5.1)	46.3% (-12.6)	24.7% (5.6)
<b>Psychology</b>	0.5% (-0.8)	6.7% (-6.9)	50.6% (-8.3)	18.5% (-0.6)
<b>Spanish Lang</b>	0.3% (-1.0)	1.6% (-12.0)	19.3% (-39.6)	68.5% (49.4)
<b>U.S. History</b>	0.7% (-0.7)	7.8% (-5.8)	47.5% (-11.4)	21.8% (2.7)

*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org). Values without parentheses are the percentage of examinees within that racial/ethnic group. Values within parentheses are the raw difference between percent of examinees of that race/ethnicity and percent representation in the U.S. population. A negative value reflects enrollment that number of

percentage points less than the percentage representation in the U.S. population for that racial/ethnic group.

The difference between percent of examinees and representation in the U.S. population varied by racial/ethnic group. American Indian/Alaska Native and Black/African American students were the most notably underrepresented among examinees across courses. Both groups exhibited percentages of examinees that were half or less than half of their percent representation in the U.S. population. Conversely, Hispanic/Latino tended to be the least underrepresented among examinees across courses. White students were slightly underrepresented among examinees relative to their representation in the population, as their percent examinees were approximately 80% of their representation in the population across courses. It should be noted that Asian/Asian American students were excluded from this portion of the analysis due to differences in how Asian populations were aggregated between AP data and U.S. census data; however, one study found that Asian students were most likely to take AP exams in both 1997 and 2017 (Finn & Scanlan, 2019). With this consideration in mind, White students tended to be the most represented per the present analysis, with White students comprising approximately 46% to 50% of examinees in all analyzed courses except Spanish Language. Spanish Language exhibits the most notable disparities in examinee representation as it relates to the abundance of Hispanic/Latino students.

Taken together, these data suggest that there are notable present-day disparities in participation in AP for students of specific races and ethnicities. The greatest disparities exist for American Indian/Alaska Native and Black/African American students, while White and Hispanic/Latino students have the least pronounced disparities.

Hispanic/Latino students are notably overrepresented in Spanish Language, while other groups' representation among examinees tends to be the lowest in this course as compared to other courses.

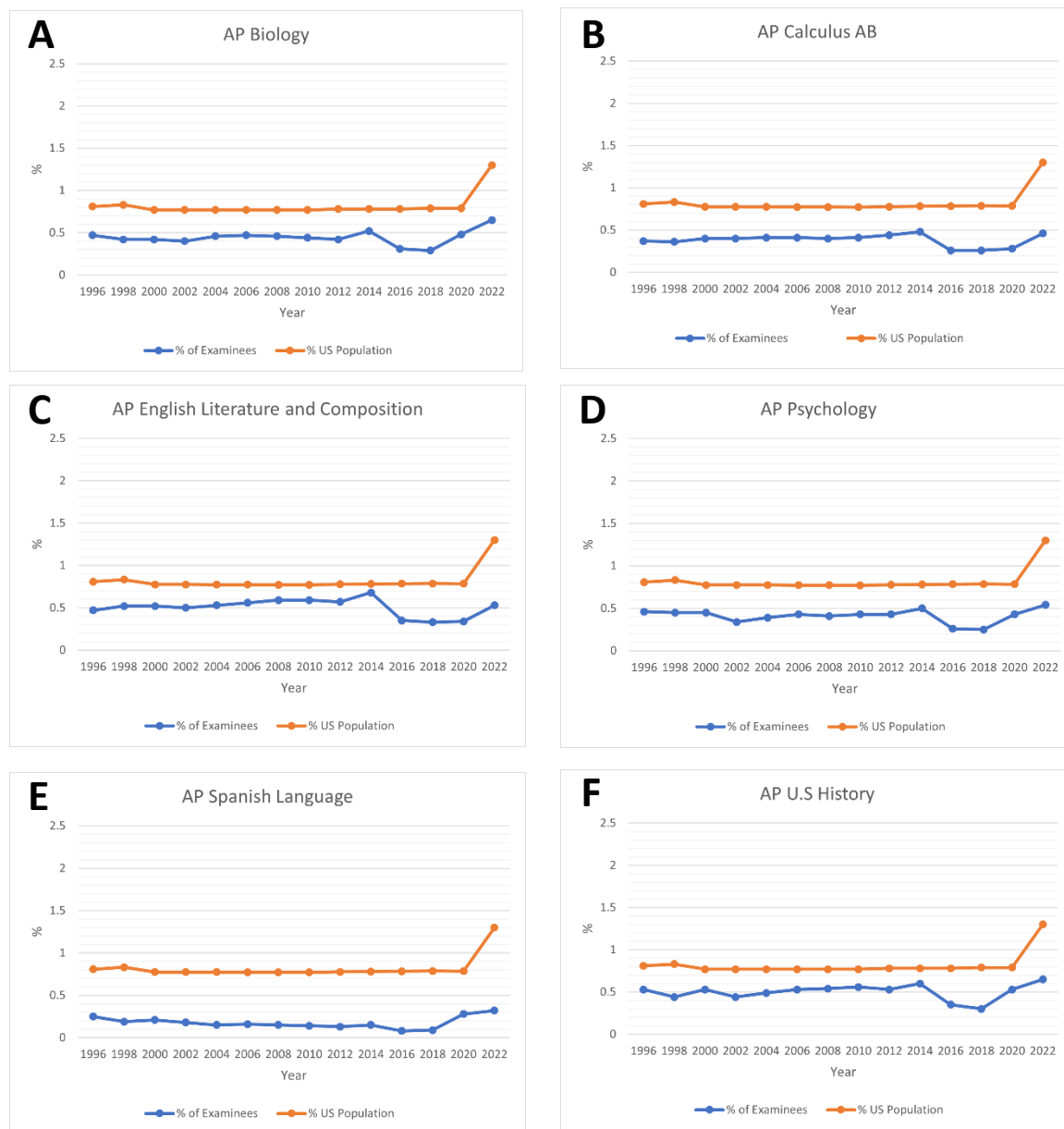
### **RQ2: Trends in Participation Over Time**

To examine the proportionality of racial and ethnic representation (which are used as indicators of access to AP), examinee data were transformed from raw counts into percentages and organized into line graphs. The percentage that each racial/ethnic group comprised of total examinees was then compared against the percentage they comprised of the U.S. population for each course and racial/ethnic group.

For American Indian/Alaska Native students, representation among examinees was typically stable across the entire timespan (see Figure 1). However, representation among examinees for American Indian/Alaska Native students was almost always approximately half of what this group comprised of the U.S. population. Furthermore, their representation among examinees within these six AP courses did not noticeably increase, even when the American Indian/Alaska Native population increased by just over half a percentage point between 2020 and 2022. The most noteworthy disparity was for AP Spanish Language, for which American Indian/Alaska Native examinees comprised up to approximately 0.7 percentage points less than their representation in the U.S. population.

**Figure 1**

*Representation of American Indian/Alaska Native Students in Six AP Courses since 1996*



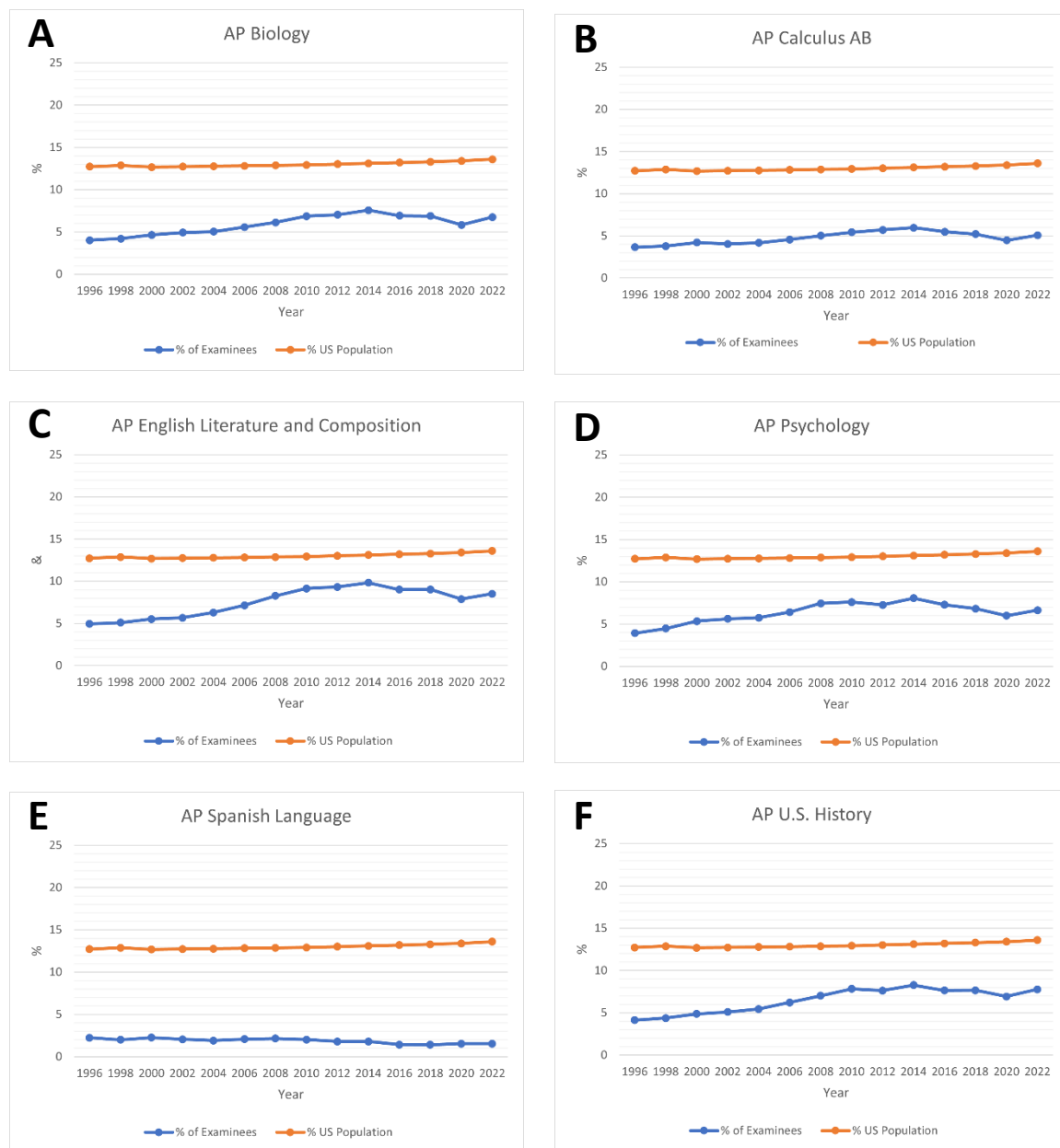
*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org)



Data for the representation of Black/African American studies is presented in Figure 2. Disparities were more noticeable for Black/African American students as compared to American Indian/Alaska Native students. Percentage of examinees exhibited a slight increase for most courses (apart from Spanish Language), which narrowed the gap between representation among examinees and among the U.S. population. Percentage of examinees hovered between approximately 5-10% across courses, apart from Spanish Language, which was stable at just 3%. This is greatly less than the percentage of the U.S. population Black/African American population accounted for, which was stable at approximately 13% across all years. All but Spanish Language saw a marginal increase in percent examinees, which slightly narrowed the gap between enrollment percentages and their proportion of the U.S. population.

**Figure 2**

*Representation of Black/African American Students in Six AP Courses since 1996*

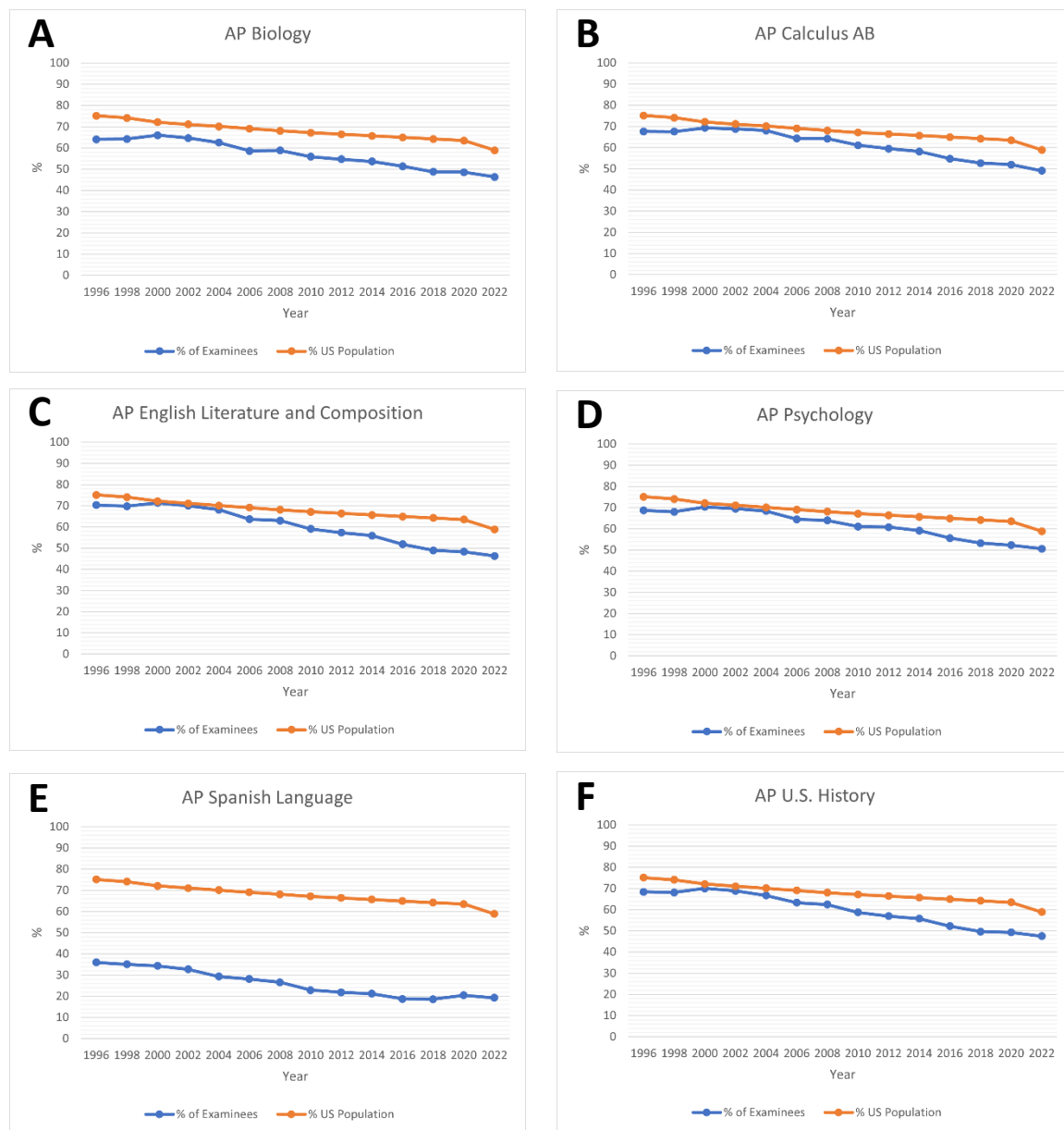


*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org)

White students' representation among examinees was relatively concomitant with their representation within the U.S. population across all years for almost all courses (see Figure 3). The major exception to this tendency was Spanish Language, in which White students' representation among examinees was anywhere from one-half to one-third of their representation in the U.S. population. The percentage of White individuals accounted for within the U.S. population decreased slightly from 1996 to 2022, and their percentage of examinees decreased at approximately the same rate across all courses. Overall, this is not surprising, as the percentage of the population that other racial/ethnic groups accounted for either remained relatively steady or increased over time.

**Figure 3**

*Representation of White Students in Six AP Courses since 1996*

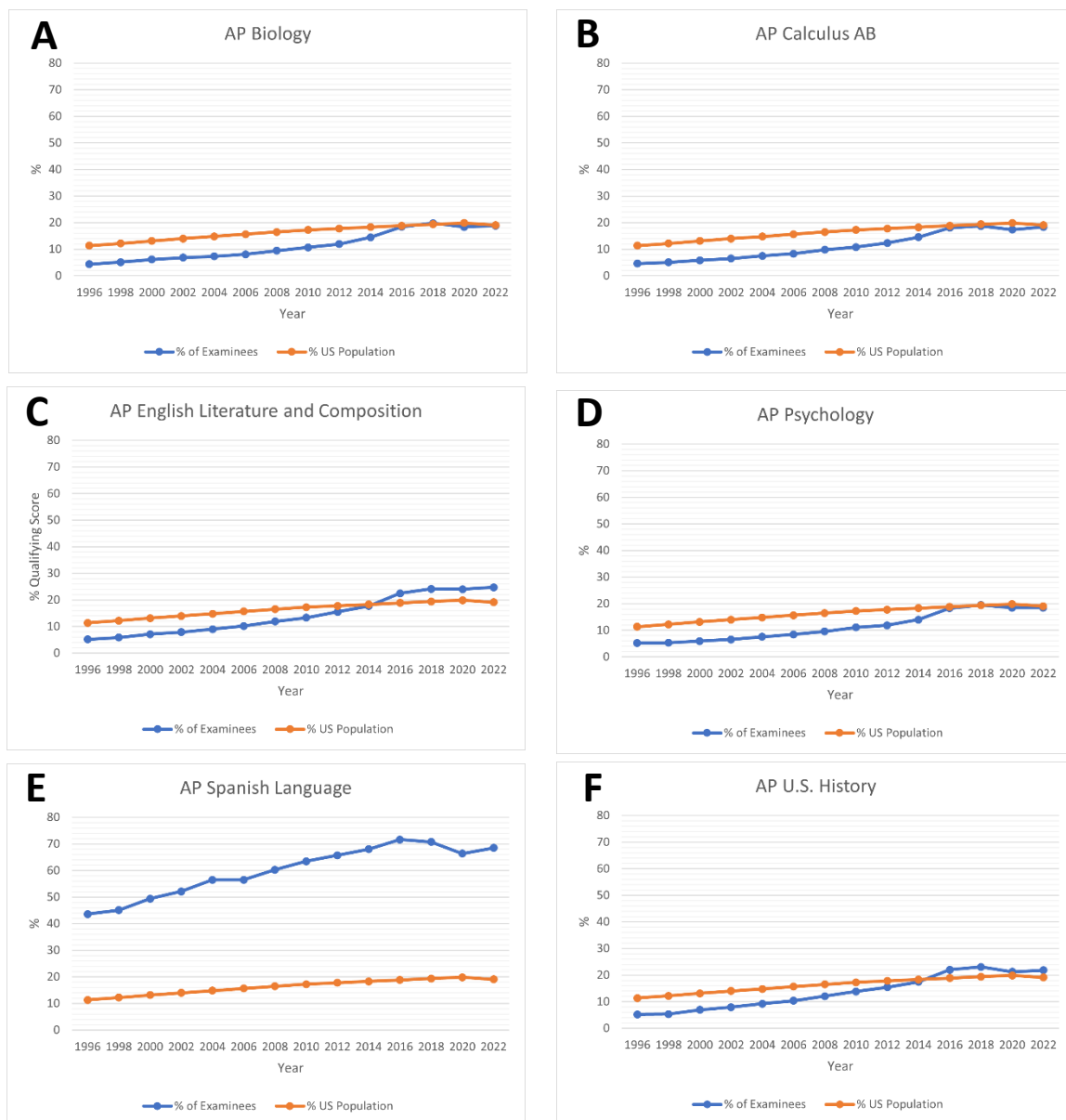


*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org)

Of all racial/ethnic groups analyzed, the Hispanic/Latino population saw the most improvement in representation among examinees, bringing it closer to or exceeding their representation in the U.S. population (see Figure 4). The most pronounced change was observed in English Literature and Composition, in which Hispanic and Latino students' percentage of examinees came to exceed their representation in the U.S. population by approximately 5 percentage points after 2016. In fact, their representation among examinees spiked in 2016 such that their representation among examinees came to match or exceed their representation in the population for all courses. Hispanic and Latino students were consistently and increasingly overrepresented in Spanish Language. Furthermore, the rate at which their percentage of examinees in this course increased exceeded the rate at which the population grew over the examined timeframe.

**Figure 4**

*Representation of Hispanic/Latino Students in Six AP Courses since 1996*



*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-

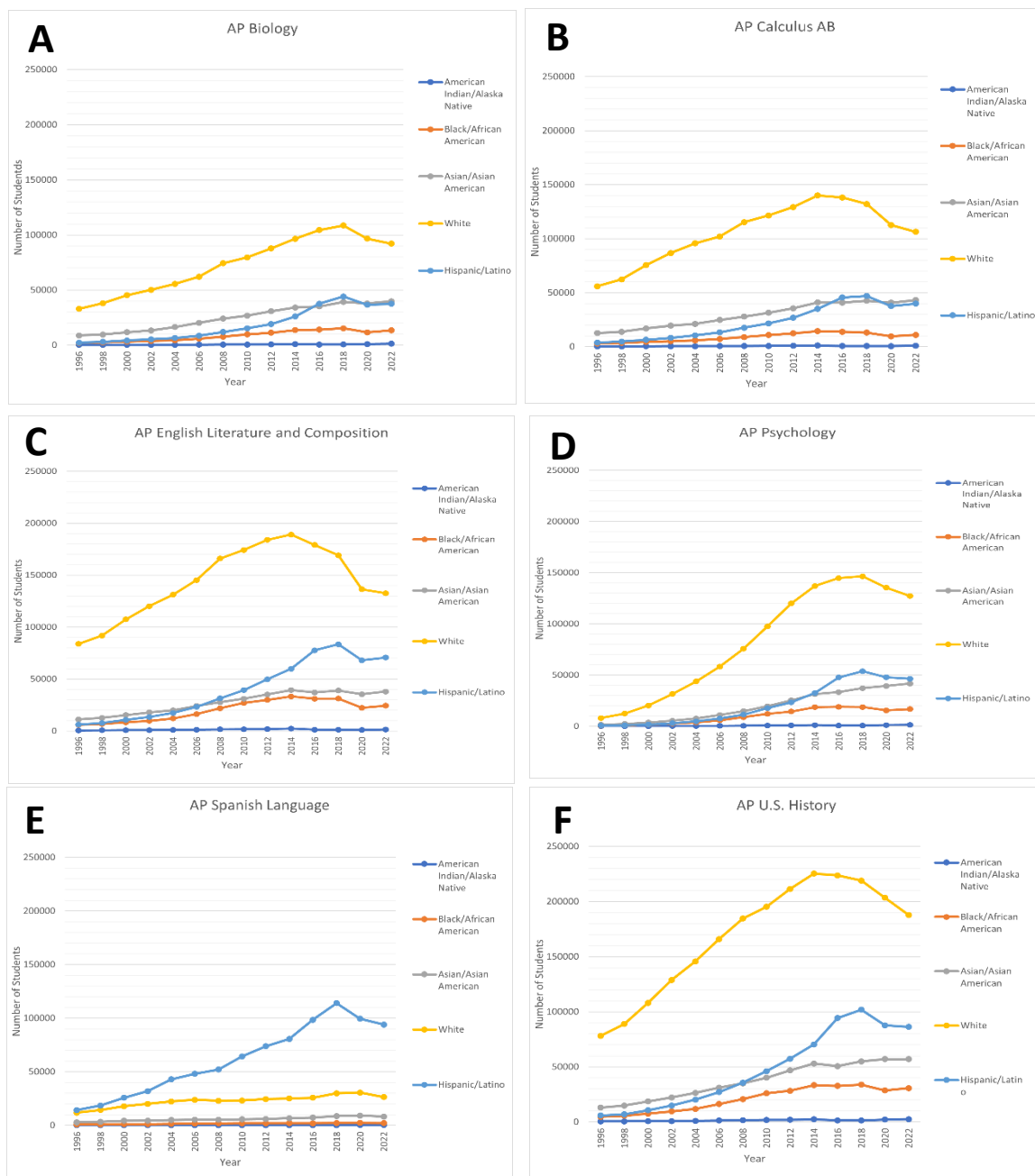
2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org)

It is also worth considering how overall examinee counts have changed over time. Figure 5 represents the total number of examinees of the five racial/ethnic groups examined previously as well as the Asian/Asian American group, which could be included because it was not being compared to incompatibly aggregated U.S. census data. This figure is notably different from the figure presented thus far, as each point reflects the raw count of students who participated in each exam from each racial/ethnic group. Trends for five courses excluding Spanish Language were relatively similar across time, with White students increasingly prevalent among exam takers. While the percentage of White examinees fell over time (as shown in Figure 3), their raw count among examinees tended to increase across courses and time. Across these same five courses Hispanic/Latino enrollment saw the second greatest and increases in representation among examinees as time progressed, with the raw number of examinees increasing more from year to year as time went on. Conversely, Asian/Asian American students saw more steady increases in exam participation over time. Exam participation was relatively stagnant for American Indian/Alaska Native students.

Spanish Language was a unique case as compared to the other five courses. In contrast to the other, White-dominated courses, Spanish Language has been largely Hispanic/Latino-dominated. Furthermore, exam participation of Hispanic/Latino students steadily increased until 2020 while the participation of the other five racial groups stagnated. This was true even for White students, despite their relatively robust increases in exam participation in other courses over time.

**Figure 5**

*Raw Number of AP Examinees for Six AP Courses since 1996, by Race/Ethnicity*



*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-

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Overall, these trends suggest that, while exam participation increased overall until 2020, participation in AP examinations has not become more representationally proportional. For White students, this is relatively inconsequential, as their exam participation has remained concomitant with the proportion of the population they comprise.

### **RQ3: Present-Day Disparities in Performance**

Table 2 was assembled to examine average scores and percent qualifying scores for each racial/ethnic group in 2022; these values reveal notable differences in performance between groups. The Asian/Asian American group fared best with respect to the highest average scores and highest percentage qualifying scores across courses; the only exception to this trend was Spanish Language, for which the Hispanic/Latino group had the highest average score and percentage qualifying scores. The White students fared well across courses, with most of their average scores being approximately 3 or higher (except for U.S. History) and qualifying scores of 50% or higher for all courses. Conversely, the Black/African American group tended to have the lowest average score and lowest percentage qualifying scores across nearly all courses. The Hispanic/Latino group tended to have the second-lowest average scores for all courses except Spanish Language, in which they fared best with respect to both performance metrics. The American Indian/Alaska Native group tended to receive average scores of less than 3, but they tended to have 50% or more of their test-takers receiving qualifying scores for all courses except U.S. History.

**Table 2**

*Average Scores (and Percent Earning a Qualifying Score) in Six AP Courses, 2022*

<b>Course</b>	<b>Race/Ethnicity</b>				
	<b>American Indian/ Alaska Native</b>	<b>Black/ African American</b>	<b>Asian/ Asian American</b>	<b>White</b>	<b>Hispanic/ Latino</b>
<b>Biology</b>	2.63 (51.7%)	2.17 (34.5%)	3.43 (75.3%)	2.93 (69.6%)	2.39 (42.3%)
<b>Calculus AB</b>	2.56 (46.5%)	2.00 (27.6%)	3.32 (67.0%)	3.03 (50.5%)	2.21 (34.2%)
<b>English Literature &amp; Composition</b>	2.77 (58.3%)	2.44 (48.2%)	3.69 (88.1%)	3.54 (86.6%)	2.55 (35.8%)
<b>Psychology</b>	2.49 (48.9%)	2.06 (34.0%)	3.35 (71.5%)	2.99 (62.8%)	2.26 (40.3%)
<b>Spanish Language</b>	3.10 (70.0%)	2.65 (52.3%)	3.47 (82.7%)	3.30 (77.1%)	3.62 (83.23%)
<b>U.S. History</b>	2.02 (29.7%)	1.77 (22.4%)	3.07 (64.1%)	2.70 (52.9%)	1.94 (27.5%)

*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-

2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org). Values without parentheses are the average score for that group and course. Values within parentheses represent the percent of test-takers who received a qualifying score, i.e., a score of 3 or higher.

## **RQ4: Trends in Performance Over Time**

### *Trends in Average Scores*

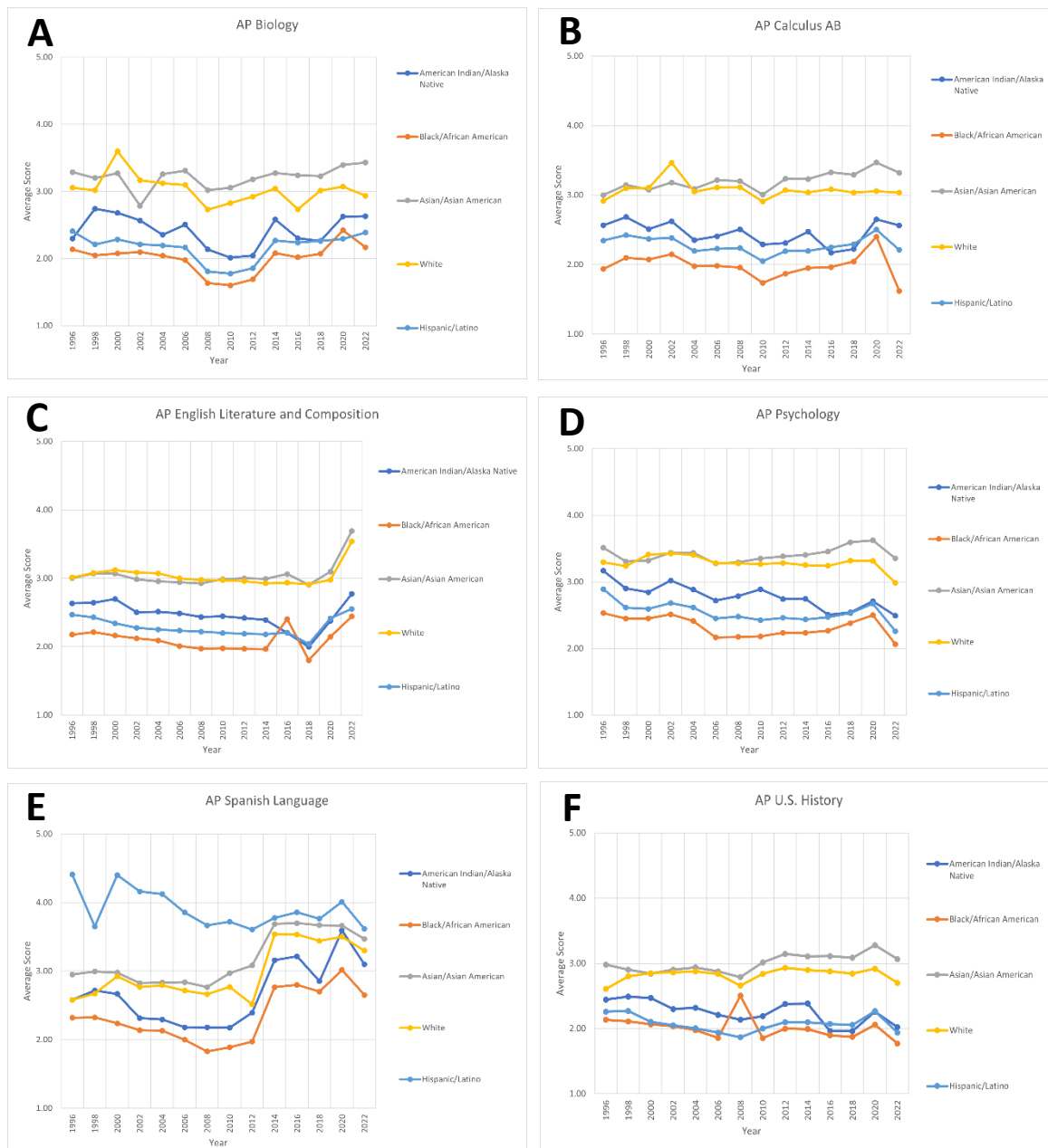
Average scores in each of the six courses by race/ethnicity are displayed in Figure 6. All racial/ethnic groups with data were able to be analyzed for their group performance. First, data were analyzed by course to compare the performance of each racial/ethnic group in each course. Then, data were analyzed across courses to examine trends within racial/ethnic groups.

Scores in Biology and Calculus AB were relatively variable over time for all racial/ethnic groups. However, the course with the most variability was Spanish Language; this course also exhibited the greatest spread between racial/ethnic groups' performance. English Literature and Composition scores were relatively stable across racial/ethnic groups until 2018, at which point all groups exhibited increasing scores; a similar pattern was observed for Spanish Language beginning in 2014. Psychology scores were the most stable over time across races/ethnicities. U.S. History was relatively stable across groups as well, but there was a sporadic spike for the Black/African American examinees in 2008.

Scores by racial/ethnic group exhibited notable trends over time. White, and Asian/Asian American were consistently the highest scoring groups across courses. Meanwhile, American Indian/Alaska Native tended to hover between the other groups across courses. Black/African American, Hispanic/Latino, typically had the lowest average scores. One notable exception to this trend is scores within Spanish Language; average Hispanic/Latino scores were the highest across all years.

**Figure 6**

*Average Scores, by Race/Ethnicity, for Six AP Courses Over Time*



*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-2018, 2022 The College Board. [www.collegeboard.org](http://www.collegeboard.org)

### *Trends Percent Qualifying Scores*

Percent qualifying scores were examined as an additional measure of performance. Data pertaining to percent qualifying scores (which refers to scores of 3 or above) are displayed in Figure 7. All racial/ethnic groups were able to be analyzed. Similarly to how average scores were handled, trends were first examined by course across racial/ethnic groups, then by race/ethnicity across courses.

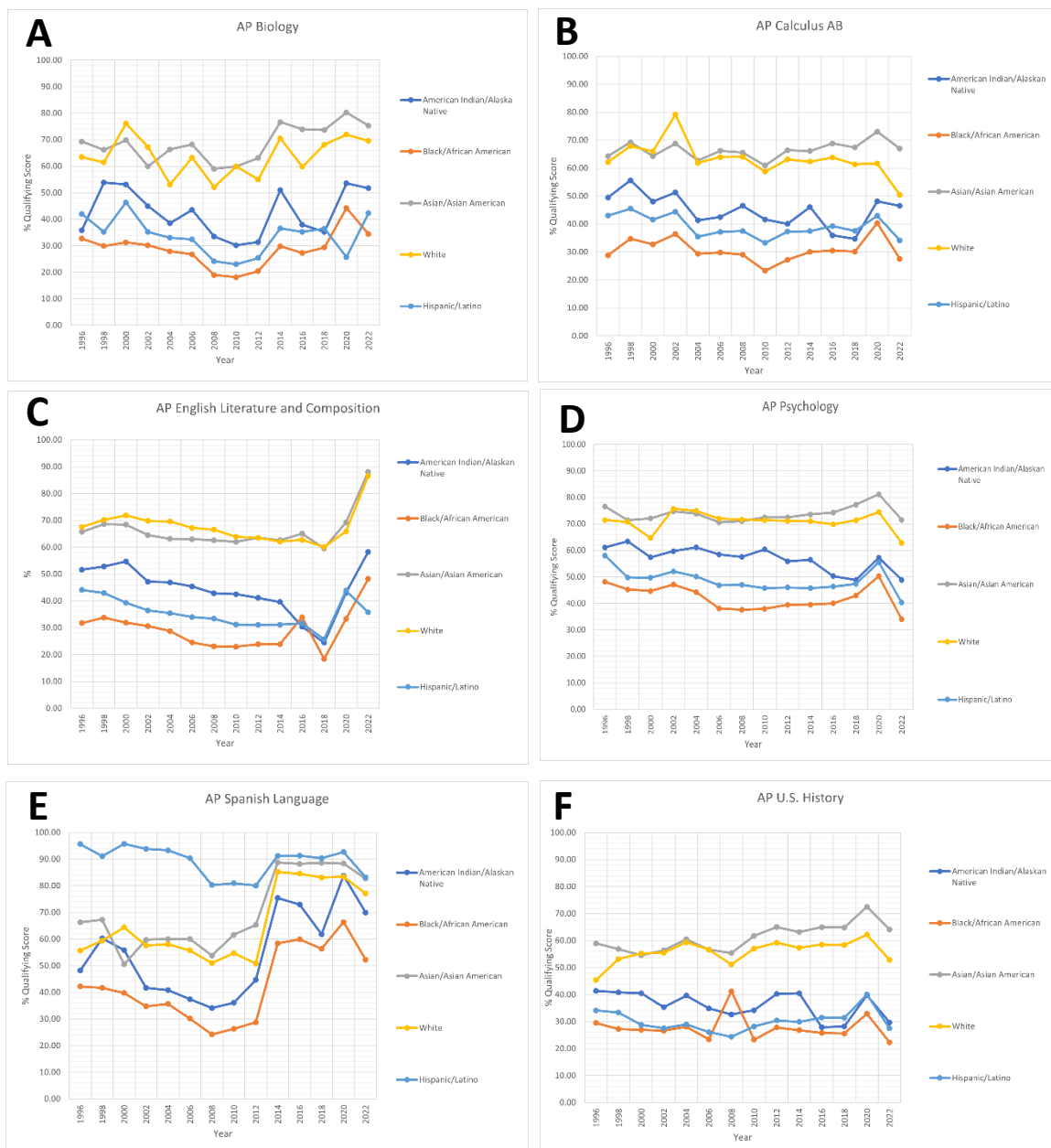
All courses exhibited a notable amount of variability across time and spread between racial/ethnic groups. AP Biology and AP Calculus AB exhibited very similar patterns across time, with both courses exhibiting a significant instability over time and very similar ranges of percentages across racial/ethnic groups. AP English Literature and Composition exhibited some of the greatest disparities between racial/ethnic groups, though it exhibited some convergence over time along with higher percentages of qualifying scores for all groups. AP Spanish Language exhibited a similar pattern of spread giving way to convergence; however, this course exhibited a downward trend in more recent years after a spike in 2014. AP Psychology also experienced a decrease in percentage qualifying scores as of 2020.

Patterns of racial/ethnic rankings across courses were similar to those observed with average scores. White and Asian/Asian American groups tended to receive the highest percentages of qualifying scores across courses. Conversely, Black/African American and Hispanic/Latino groups tended to receive the lowest percentage of qualifying scores. Once again, AP Spanish Language deviates from this pattern, with Hispanic/Latino students receiving the highest percentage of qualifying scores by a wide margin across all years.

**Figure 7**

*Percent of Students Earning a Qualifying Score, by Race/Ethnicity, for Six AP Courses*

*Over Time*



*Note:* Source: Derived from data provided by the College Board. Copyright © 1996-

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## Discussion

### Overview

This study was designed to examine past and present disparities in participation and performance in the AP program. As an opportunity for high school students to gain college credit before attending college, it is important for these courses to be accessible and outcome-equitable to students of all races and ethnicities. Past and recent studies have indicated that minority students—especially Black and Hispanic students—are likely to be in schools with limited AP offerings or otherwise exhibit low participation in AP courses (Kolluri, 2018; Conger et al., 2009, Palermo et al., 2022). To further understand the state of these disparities, data from the College Board were examined. Data used for analyses were population-level summary counts of exam participation and score outcomes for six courses disaggregated by race/ethnicity from 1996 to 2022.

The data revealed continued disparities in AP participation and performance. With respect to participation, American Indian/Alaska Native and Black/African American students exhibit the greatest disparities both now and in the past, with low exam participation relative to their representation in the U.S. population and low raw numbers of examinees across all six examined courses since 1996 with little improvement. In terms of performance, Black/African American students and Hispanic/Latino students have tended to receive the lowest average scores and had the lowest percentage of qualifying scores across all courses since 1996—except for Spanish Language, in which Hispanic/Latino students have received the highest average scores and greatest percentage of qualifying scores since 1996. Overall, Spanish Language posed a unique case of participation and performance, with Hispanic/Latino students

consistently overrepresented and outperforming every other racial/ethnic group included in the analysis over time.

### **Interpretations and Implications**

The most salient interpretations are derived from considering findings on access and performance across racial/ethnic groups together, and the most meaningful change comes from considering which groups are in greatest need. With respect to access, American Indian/Alaska Native and Black/African American students exhibited the greatest indication of potential barriers to access, with low percentages of exam participation relative to their representation in the population and low overall enrollment since 1996. The Black/African American AP student population also exhibited lowest average scores and lowest percentage of students receiving qualifying scores; the Hispanic/Latino group fared second worst with respect to performance metrics over time. From an intersectional perspective, the Black/African American student population appears to be at the greatest risk of facing barriers to access or struggling to meet performance expectations.

The findings of this study did not differ significantly from past evidence, except for with respect to Hispanic/Latino students. Disparities in participation were notably large for American Indian/Alaska Native and Black/African American students over time and persisted into the present. Consider that wealthy schools with predominantly White populations are most likely to offer a wide variety of AP courses (Finn & Scanlan, 2019), which is consistent with their relatively concomitant representation among examinees. However, students of color, including Black students, are more likely to be concentrated in low-income urban schools (United Negro College Fund, 2023; Logan & Burdick-Will,



2019). American Indian students are predominantly located in rural school districts (Logan & Burdick-Will, 2018), which are in turn more likely to feature limited AP course offerings (Finn & Scanlan, 2019). While it is true that Hispanic students, like Black students, are likely to be concentrated in disadvantaged urban districts (Logan & Burdick-Will, 2018), their participation in AP exams has increased to be concomitant with their representation among the U.S. population, which raises numerous questions amenable to future study. Lastly, regardless of race, it is worth considering student motivation to elect participation in AP exams. AP courses may, to some degree, be viewed as “White” spaces, which may discourage students of color from participating, as may the tendency for teachers to have lower expectations for students of color, especially Black students (Grissom et al., 2020; United Negro College Fund, 2023). Interestingly, this sentiment appears to be highly pronounced among Hispanic students (Bjorklund, 2019), yet their participation has seen the most growth.

With respect to performance, the findings of the present study corroborate past evidence overall. Over time, average scores and the percentage of qualifying scores attained was lowest for Black/African American and Hispanic/Latino students. This corresponds with the tendency for the fewest academic opportunities and lower academic expectations being afforded to these groups of students (Grissom et al., 2020). Black and Hispanic students comprise a large proportion of students at low-income schools, which are more likely to offer lower quality of instruction overall, including within the AP program (Kolluri, 2018). Educational tracking also disproportionately affects Black and Latino students, such that they are more likely to be placed in basic or remedial courses while White and Asian students are more likely to be placed in higher level courses

(Yonezawa et al., 2002). As such, Black and Hispanic students may lack the skills their White and Asian counterparts are afforded the opportunity to develop by the time they take an AP course (Jeong, 2009).

Spanish Language presents a unique situation with respect to access and performance. Of the examined courses, Spanish Language broke cross-course trends in access and performance the most frequently, often to the advantage of Hispanic/Latino student populations. With respect to access, it is worth wondering whether the overrepresentation of Hispanic/Latino students represents an issue of access for students of other racial/ethnic backgrounds. However, performance is of little concern, given the upward over trend in average and percent qualifying scores in recent years across racial/ethnic groups. While average scores and the proportion of qualifying scores have fallen between 2020 and 2022, this effect was observed across all racial/ethnic groups and across other exams, and so it likely reflects the influence of a non-racially/ethnically specific factor. It is possible that this factor is related to the implementation of distance learning due to the COVID-19 pandemic.

### **Limitations**

This study is affected by several limitations, many of which pertain to the way data for certain racial/ethnic groups were aggregated and compared. Differences in how group data were aggregated between the College Board and U.S. Census led to some groups being omitted from certain portions from analysis—namely, the Asian/Asian American group was omitted from preliminary analysis due to this issue. However, this group was able to be examined in the consideration of trends in absolute numbers of examinees (see Figure 5) over time, as there was no comparison made to U.S. census

data. Furthermore, U.S. census data were representative of all age groups, whereas the population of students taking AP courses are most likely to be teens. Lastly, because these are not individual-level data, it was not possible to examine race/ethnicity and gender from an intersectional perspective.

### **Recommendations for Future Research**

Though there is not much to be done about how the College Board collects its data, analysis for interactions between race/ethnicity and gender would be valuable should individual-level data ever become available. Past studies and experts have suggested that gender and race/ethnicity intersect with respect to educational outcomes. For example, educational policy analyst Richard Reeves has said that there are significantly disparate graduation rates between male and female students for all racial and ethnic groups, but that these differences are most pronounced for Black students (Mahnken, 2022). Black male students are also more likely to be referred for special education and less likely to be referred for gifted and talented or AP courses (Ford et al., 2023), while Black girls and women have outperformed White males in both K-12 and higher education (Anderson, 2022). As these differences are so pervasive, it is reasonable to postulate that such patterns may also manifest within the AP program.

While this study established that there are historical and ongoing issues with access for Black/African American and American Indian/Alaska Native students, it did not explore what factors posed the greatest barriers to accessing AP for these groups. This would be an excellent area of future research, with particular attention paid to the unique struggles of each racial/ethnic group examined. Based on past research, it would be reasonable to predict that Black students are less likely to participate in AP due to

negative perceptions of their ability. Teachers tend to have more negative perceptions of Black (and Hispanic) students than students of other races or ethnicities (Grissom et al., 2020), and these perceptions affect how Black students are academically tracked as early as elementary school (Kolluri, 2018). As for American Indian/Alaska Native students, there is a relative paucity of research regarding this group's participation and performance in AP courses. Moore & Slate suggested that American Indian students, like students of other minority students, may lack core academic skills when entering school, which may serve as a barrier to AP participation later (2010). However, this explanation does not account for the College Board's observation in 2013 that Native American students are less likely to enroll in an AP course despite being academically prepared (Judson & Hobson, 2015).

Another area of research could focus on the trends observed in Spanish Language, which were notably unique as compared to trends across other examined courses. While Hispanic/Latino students dominated exam participation, all examined racial/ethnic groups received high percentages (at least 50%) of qualifying scores since at least 2014. Because so many racial groups were underrepresented in this course, it would be beneficial to determine how to increase exam participation among non-Hispanic students while keeping percentages of qualifying scores received high. To do this, we must understand what non-Hispanic students who are already taking the Spanish Language exam are doing well with respect to this course. Once this has been established, non-Hispanic students can either be taught the skill set that promotes success in Spanish Language, or they can be identified for already possessing such skills and encouraged to take the course and exam. In general, the findings pertaining to Hispanic/Latino students raised several

questions that would lead well into research. Given that their participation has improved across all examined courses, what factors have been driving this improvement? Once these factors have been established, can they be used to improve the participation of students of other racial/ethnic groups, as well?

### **Recommendations for Policy and Practice**

A significant body of research has demonstrated that minority students are more likely to enter high school unprepared for the rigors of Advanced Placement; as such, we must assure that minority students are receiving adequate academic preparation prior to high school. This will require intra-district communication such that middle schools and high schools coordinate to help students develop academic strategies in preparation for high school level courses (Flores & Gomez, 2011). More must be done to provide scaffolding to students who are interested in AP but may be behind in requisite academic skills. One solution, as proposed by Flores & Gomez, is to offer AP tutoring sessions based on teacher or self-referral (2011). Another means of increasing participation among minority students is to offer a broader array of courses that may appeal to demographics with low participation, such as African American studies. However, this solution poses its own hurdles, including teacher availability and preparation to teach specialized courses as well as funding constraints.

Indeed, AP cannot exist without teachers who are qualified and motivated to teach each course; as such, adequate funding as well as teacher preparation and mobilization is critical. In Flores & Gomez's case study, outcomes at one high school were most favorable when teachers were highly credentialed, highly motivated, and also taught preparatory level courses in which they could promote AP readiness (2011). It stands to

reason that this approach would generalize well to other schools, but where does this leave districts that do not have highly credentialed and motivated teachers available to teach AP courses? One option is to train more teachers under state incentive programs, such as those that provide teacher training through College Board-approved AP Summer Institutes or collegiate continuing education (Klopfenstein, 2003).

The stakes parents of students in the AP program hold must also be considered. Minority parents are less likely to be aware of gifted and talented opportunities due to alienation from the school community; as such, they are less likely to advocate for their child's admission into such a program (Johnson & Larwin, 2020). This is greatly detrimental, as parents are the most influential in students' decision to take AP courses, followed by teachers and friends (Ndura et al., 2003). With this considered, more must be done bring AP to the attention of Black, Hispanic, and Native American parents while fostering their children's sense of belonging within the program. One potential approach is to organize AP parent meetings, during which parents and AP instructors can convene to discuss the program, its courses, and what they entail for their students (Flores & Gomez, 2011).

Overall, more must be done to uplift minority student populations, especially Black and American Indian prospective AP students. The betterment of the AP program must be a collaborative effort between districts across the nation by sharing which strategies and approaches to program expansion have been most effective. Policymakers would do well to heed the results of studies investigating access and performance barriers that are both ubiquitous and unique to each racial/ethnic group. Continuing to support the expansion of AP in low-income schools without overwhelming the infrastructure of

instructors available to teach AP courses is key in striking a balance between equitable access and uniform performance across racial/ethnic groups. Educators must decide whether equitable access should take priority over assuring equal and adequate performance, or if early educational practices should be overhauled to assure that students from a variety of racial and ethnic backgrounds can achieve the same outcomes. The latter option would appear to be most in line with best educational practices and the most universally beneficial to students of all races and ethnicities.

### **Conclusion**

The Advanced Placement program offers students a unique opportunity to get a head start on their college education, though such opportunities have a history of being inequitably accessible or attainable based on race and ethnicity. While the program has expanded in overall enrollment, exam participation, and course offerings since 1996, representation to AP courses remains somewhat disproportional across racial/ethnic groups, and performance across groups is equally variable. Black, Hispanic, and American Indian students are most presently impacted by such inequities, which has held true historically, as well. It is critical that researchers continue investigating unique and universal barriers to equitable access and performance, while legislators must enact policies following this research to better support groups that face continued educational inequity.

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