

# **Equity Analysis of Advanced Placement in SCASD**

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Center for Education and Civil Rights



## Overview

The Center for Education and Civil Rights at Penn State University formed a partnership with State College Area School District in the summer of 2020 with the intention of assisting the district with collecting and analyzing data, particularly to investigate equity opportunity gaps. This partnership is mutually beneficial, as we and other scholars within Penn State’s College of Education are committed to developing sustainable collaborations, particularly these sorts of research-practitioner partnerships.<sup>1</sup> Knowing that accurate data collection and analysis processes are integral for districts like SCASD to understand and effectively address inequities in their schools, this year’s reports offer district personnel a data and research basis for its equity work while also supporting transparency about educational inequality in the community.

Last year, we issued an initial report on equity, largely using publicly available data. Last year’s report included more background information about why the indicators mattered and is a good introduction to the types of measures districts can and should analyze around equity. This year, we issue two reports; this report is focused on AP enrollment and student test-taking and performance. The other report looks at demographics, graduation rates, gifted students, retention, and discipline.<sup>2</sup> We appreciate SCASD for providing data to use for this analysis and hope to continue this analysis to support SCASD and the community in assessing equity gaps and gains. We have additionally been in conversations with district officials about places in which we had questions about the data, and how data collection might be enhanced to further the district’s equity action plan.

In the State College Area School District (SCASD), students have the opportunity to take advanced coursework. Advancement Placement (AP) courses are one of the opportunities for students to engage in rigorous coursework developed by the College Board and allow students to potentially take the end-of-the-year standardized AP test for college credit. In SCASD, an “A” in each AP course earns students a weighted GPA of 5.0, which means students can receive above a 4.0 when they are enrolled in advanced coursework—incentivizing students to take these courses. AP tests are administered through the district, and are not mandatory, though students are encouraged to sit for these exams. In 2022, the exams cost \$105 through Nov. 1 and \$145 thereafter. Students who qualify for free or reduced lunch are also eligible for free or reduced AP exams. However, students who qualify are only permitted 4 free or reduced AP exams per year.

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<sup>1</sup> In its 2021-2025 strategic plan, PSU’s College of Education expresses its intent to pursue research that addresses social issues and to invest in outreach, dissemination, and partnerships that are mutual in nature. As scholars from the College of Education, we intend for our relationship with SCASD to be, as the strategic plan says, one in which we can “engage collaboratively ...to address pressing social issues, including poverty, essential literacies, racism, inclusion, mental health and well-being, and climate change, among others.” To read more about the College of Education’s strategic plan, please visit <https://ed.psu.edu/strategic-plan-2021-2025>. We appreciate the Office Education & Social Equity for providing support for the student authors of these reports.

<sup>2</sup> Bond, M., Wesdock, E., Frankenberg, E., Al Saghir, G., Dulaney, K., & Horn-Green, K. (2023). SCASD Equity Report, 2022-23. University Park: Center for Education and Civil Rights.

Qualifying students must also complete a form of eligibility by November 1st for the AP exams that begin the following Spring, meaning students must quickly know if they are going to take the test and have secured funding approximately two months after the school year begins.

### **Data Overview**

This report serves to analyze Advanced Placement enrollment and testing within SCASD through an equity lens by examining AP course enrollment and AP test data during the 2022 school year by subgroup student demographics. The data was provided to the Center for Education and Civil Rights (CECR) by SCASD. We focus here on the tests most often taken and the classes most enrolled at SCASD to serve as a representative sample. We initially categorize by non-prerequisite and prerequisite courses, meaning some AP courses in SCASD require a student to have taken a specified class prior to enrolling in a specific AP course, while others do not require specific classes prior to enrolling.<sup>3</sup> The courses are then sub-grouped by subject (humanities, language arts, mathematics, and sciences) within the initial requisite categorization. To visually represent the data discussed, graphs display the results of the analyses by race and/or gender.

When analyzing the 2022 AP data, our research team noted trends in enrollment rates, testing rates, and average scores by race. The following section focuses on the intersection between race and gender to further explore the data and to provide a more detailed analysis. By adding the intersection of race and gender in this report, the opportunity to see potential disparities is greater and possible solutions to mitigate these disparities can be specified to promote equitable enrollment within AP testing at the State College Area School District.

Each AP course is analyzed individually and then a “trends” section at the end of the report follows that notes cross-curricular trends across all courses. The report concludes with recommendations for the State College Area School District. In the data received by the Center for Education and Civil Rights from the State College Area School District, we observed data discrepancies and inaccuracies among the different datasets,<sup>4</sup> so it would be helpful to study these trends over multiple years.

### **Non-prerequisite courses**

These courses include US History, World History, Human Geography, Language and Composition, and Literature and Composition.

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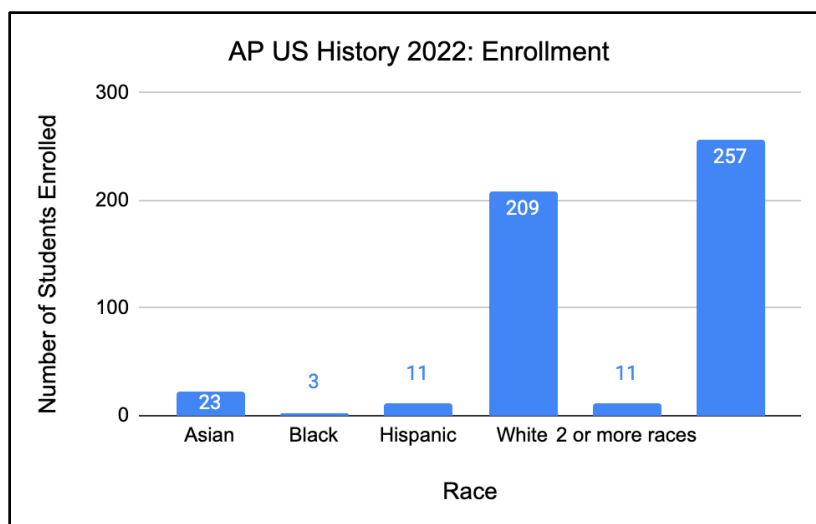
<sup>3</sup> We determined whether they had prerequisites by looking at the online SCAHS course selection guide for 2021-22.

<sup>4</sup> In some courses, there were more students who took the test than the enrollment data accounted for.

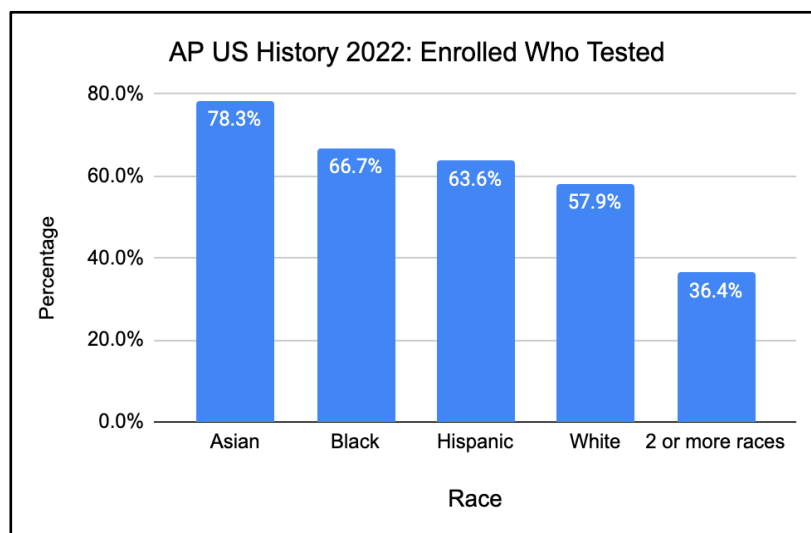
## AP US History

### *Race*

AP US History is the course with the highest number of students enrolled, with 257 students, and the highest number of total AP exams taken. White students accounted for 81% of enrollment in AP US History and students of color made up around 19% of enrollment rates in this particular AP course for the 2021-2022 school year. Black students were the lowest demographic of students enrolled, accounting for less than 1% of enrollment in this course, but are 3.6% of the school's population. Asian students accounted for 11% of the course's enrollment—meaning they are the second largest student demographic in the course. Hispanic students and Multiracial students both accounted for roughly 8% of the total enrollment for the course. That said, there are disparities in enrollment particularly for Black, Hispanic, and Multiracial students.



The next metric analyzed was the number of students enrolled in AP US History who took the AP exam at the end of their course. 78% of enrolled Asian students, 67% of enrolled Black students, 64% of enrolled Hispanic students, 58% of enrolled White students, and 36% of enrolled Multiracial students took the AP US History exam at the end of their course. White students are testing at lower rates than students from other demographic groups. However, White students are still the majority of students who took the AP US History exam at SCASD with 121 tests taken. That said, although the number of Black students who were enrolled and tested appears rather high with 67%, in reality, the raw data indicates that out of the 3 Black students enrolled, only 2 took the test showing that Black students are the least represented in terms of exams taken in AP US.<sup>5</sup>



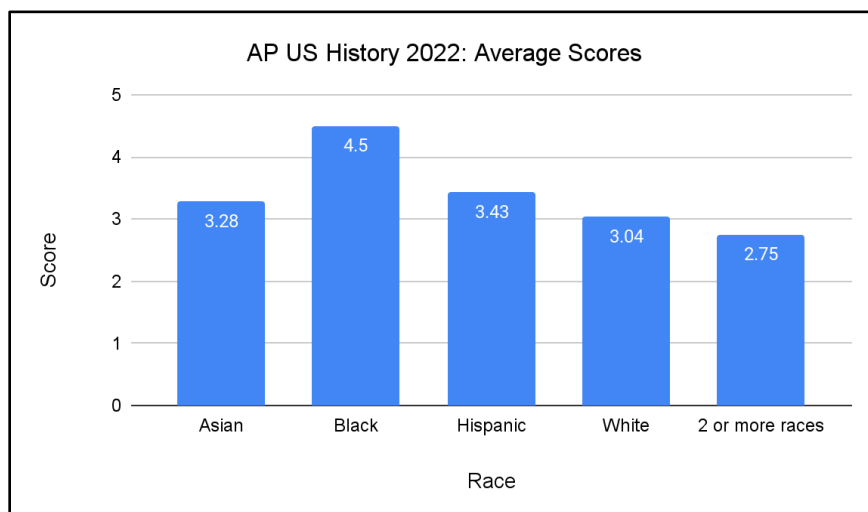
Finally, when looking at the average scores for AP US History (out of 5), we noted the following trends:

- Black students had an average score of 4.5 (N=2)
- Hispanic students had an average score of 3.43 (N=7)
- Asian students had an average score of 3.28 (N=18)
- White students had an average score of 3.04 (N=121)
- Multiracial students had a score of 2.75 (N=4)

It is important to note that although Black students are outperforming the rest of the students, there are only two Black students as a result of their lower rate of enrollment and testing. Four Multiracial students took the exam and scored an average score of 2.75, which is lower than the rest of the student demographics. Hispanic, Asian, and White students have more students taking the test and thus had greater variation in their scores.

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<sup>5</sup> We assume that those who tested were also enrolled in the course, but that was not confirmed by the district.



### ***Race and Gender***

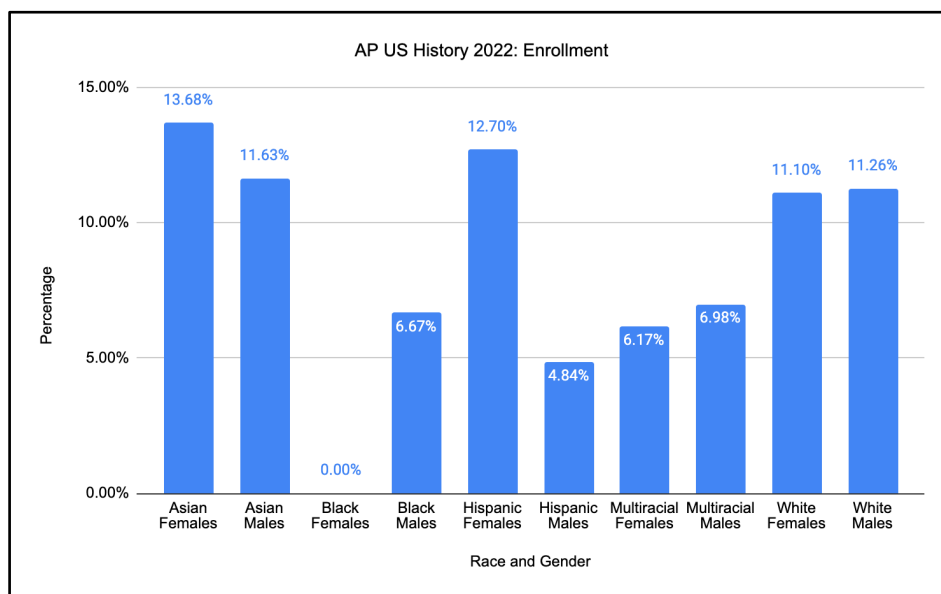
When further analyzing race and gender of those enrolled in AP US History,<sup>6</sup> we found disparate enrollment by race and gender. Here we examine the proportion of students from each racial/gender group enrolled in the AP course. Although White students have a lower proportion of students enrolled in AP US History compared to some of the other student groups in SCASD, recall from above they comprise the majority of students in this and other AP courses. From the data, there are also disparities in enrollment across race and gender. With that said, Asian females and males may have the highest percentage of representation in the course across the high school population. That being said, Asian students are not the majority demographic in the course as the raw data indicates there are only 13 Asian females and 10 Asian males– similar trends follow for the majority of AP courses analyzed in this report.

Of the Black students who are enrolled in the course, all of them are males. Black females are not represented at all in AP US History despite there being 40 Black females in the high school. There is also a slight disparity between Hispanic students as more Hispanic females are enrolled in the course. Multiracial students have fairly equal representation between the two genders as well as Asian students. Overall, the numbers for minority groups are low in comparison to White students, but specifically, Black females are the most underrepresented student subgroup in AP US History.

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<sup>6</sup> To compare AP course enrollments to the overall race and gender of the SCAHS enrollment, we used enrollment data from the NCES Common Core of Data, Public School Universe, 2021-22.

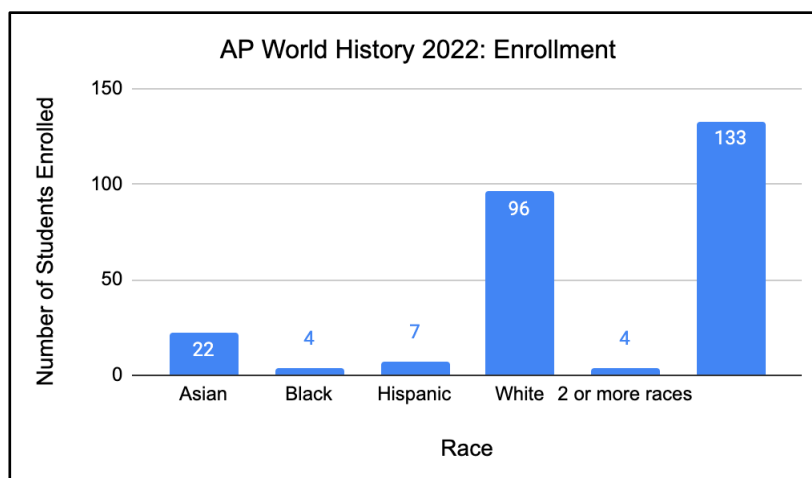
## Equity Analysis of AP in SCASD



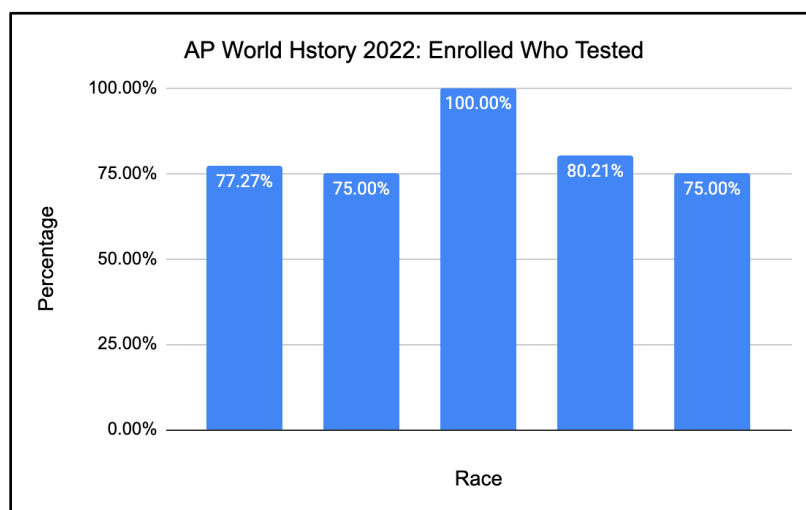
## AP World History

### *Race*

AP World History is another highly enrolled course with no prerequisites. As with AP US History, White students make up the overwhelming majority of enrolled students, as 6 students of the 133 (72%) enrolled students identify as White. Students of color represent the remainder of the course, with Asian students accounting for 17% of enrollment, Hispanic students 5%, and Black and Multiracial students accounting for 3% each. These findings indicate that White students again are the most enrolled student demographic with Asian students being the most enrolled of the students of color.



The data for enrolled students who tested displayed that 100% of Hispanic students, 80% of White students, 77% of Asian students, and 75% of Black and Multiracial students took the AP World History Exam after enrolling. Although there are a relatively low number of students of color enrolled in the course, these high percentages indicate that once enrolled in AP World History, the majority do take the test.

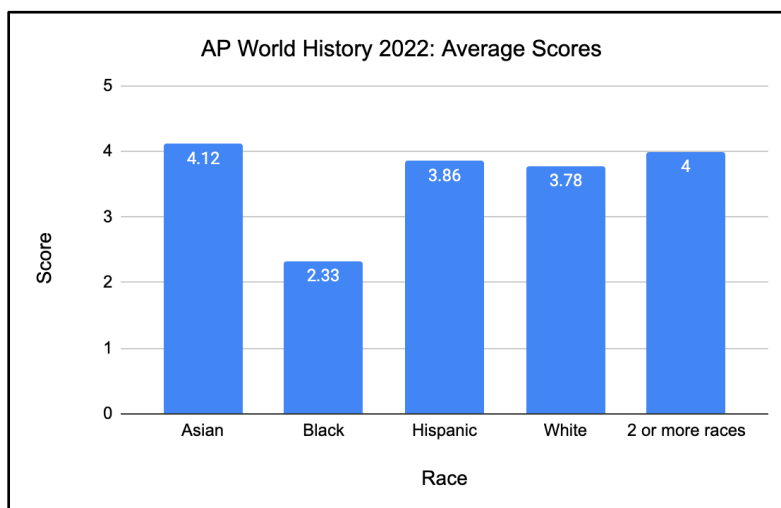


Regarding the test scores for AP World History (out of 5), we noted the following trends:

- Asian students had an average score of 4.12 (N=17)
- Multiracial students had an average score of 4 (N=3)
- Hispanic students had an average score of 3.86 (N=7)
- White students had an average score of 3.78 (N=77)
- Black students had an average score of 2.33 (N=3)

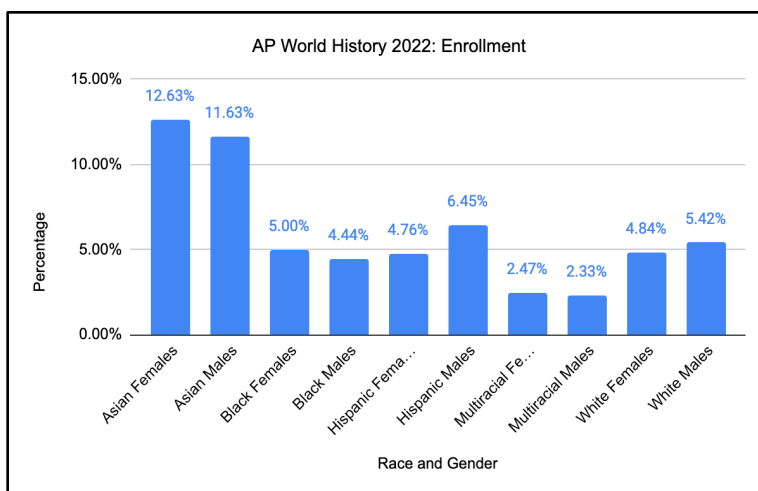
Among SCASD students, Asian students had the highest average score on the AP World History exam while Black students had the lowest. Multiracial students had a high average of 4, but the raw data indicated that only 3 students took the exam, so multiracial students are still underrepresented. As with AP US History, White students have significantly more people taking the exams, and more variation in scores.





### ***Race and Gender***

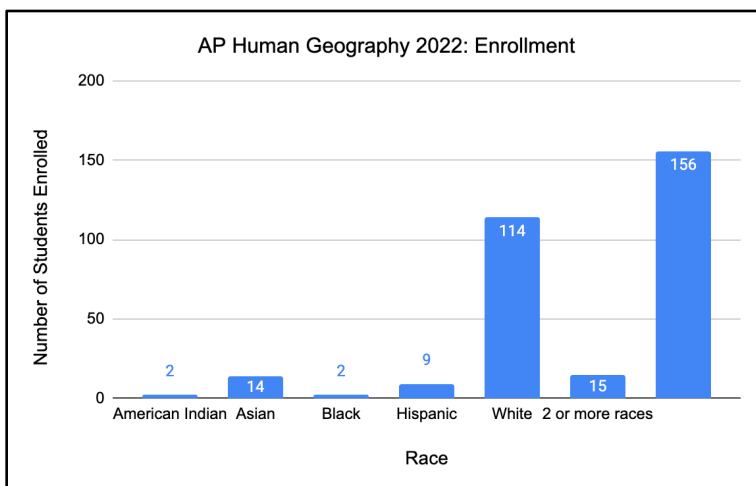
Again, we look at how these overall trends break down by gender within race. When looking at the raw data from these percentages, Black males and females and multiracial males and females have two students enrolled. There is also a relatively equal proportion of Hispanic males and females as well as Asian males and females taking the course. Asian males and females also have the highest percentage of students enrolled than any other group. The data also revealed that there are slightly higher percentages of White males enrolled than White females.



## AP Human Geography

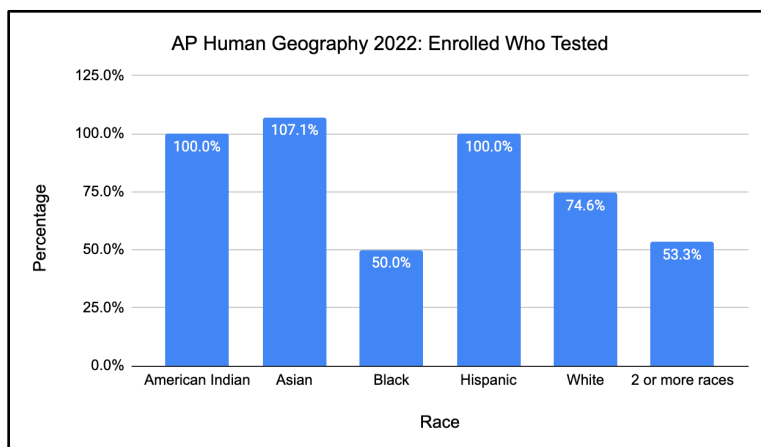
### *Race*

AP Human Geography is another highly enrolled AP course in SCASD with a total of 156 students. As a non-prerequisite course, more students have access to this class. Most of the enrolled students in this course were 9th-grade students. This course has similar enrollment trends as the prior two humanities courses described. White students account for 73% of all students enrolled and are once again the majority. However, AP Human Geography is the only course where Indigenous students are represented and these two students account for roughly 1% of the total enrollment. There is also a slightly higher number of multiracial students enrolled whereas Asian students were lower by about 10 students, making these two student demographics relatively equal in representation with about 9% who are Asian students and 10% who are Multiracial students enrolling— an outlier within the humanities courses analyzed thus far since Asian students are the second largest student demographic in the previous two humanities courses. Also, about 1% of students in AP Human geography are Black students and 6% of students are Hispanic students, again accounting for a smaller proportion once again.



The data for enrolled AP Human Geography students who tested indicated that 107% of Asian students, 100% of Hispanic students, 100% of Indigenous students, 74.6% of White students, 53% of Multiracial students, and 50% of Black students took the AP Human Geography Exam after enrolling. Although there was a higher proportion of Multiracial students enrolled in the course, only about half took the test, indicating there is some discrepancy with the enrollment-to-testing ratio for this specific demographic of students. The fact that Asian students who were over 100% enrolled who tested raises questions as to whether students need to be

enrolled to take an AP exam.<sup>7</sup> Black students, however, consistently have the lowest representation of those who enrolled and tested.



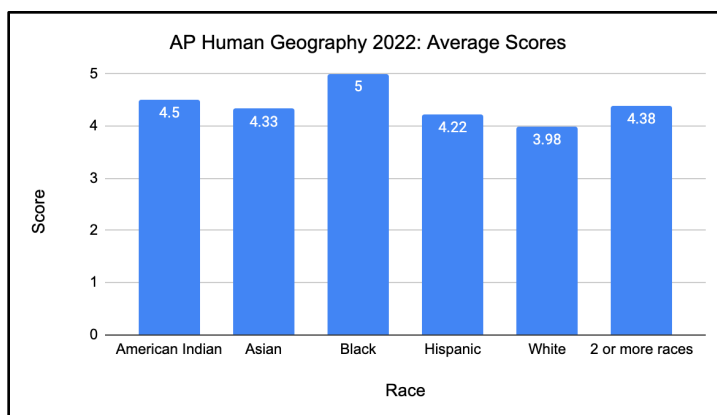
The average scores for AP Human Geography (out of 5), we noted the following trends:

- The one enrolled Black student scored a 5 (N=1)
- Indigenous students had an average score of 4.5 (N=2)
- Multiracial students had an average score of 4.38 (N=8)
- Asian students had an average score of 4.33 (N=15)
- White students had an average score of 3.98 (N=85)
- Hispanic students had an average score of 4.22 (N=9)

The highest average scores are those for which there were few student test takers (e.g., Black, Indigenous, and Multiracial students). Nevertheless, the average scores are the highest in Human Geography compared to the other humanities courses analyzed.

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<sup>7</sup> If this happens, it also suggests that our assumption about the percentage of students enrolled who are testing might not be valid. E.g., for the 100% of Hispanic students who also tested here, it might instead be that not all enrolled tested, but that one or more students took the test but weren't enrolled. We hope to clarify these discrepancies for more clarity in the future.

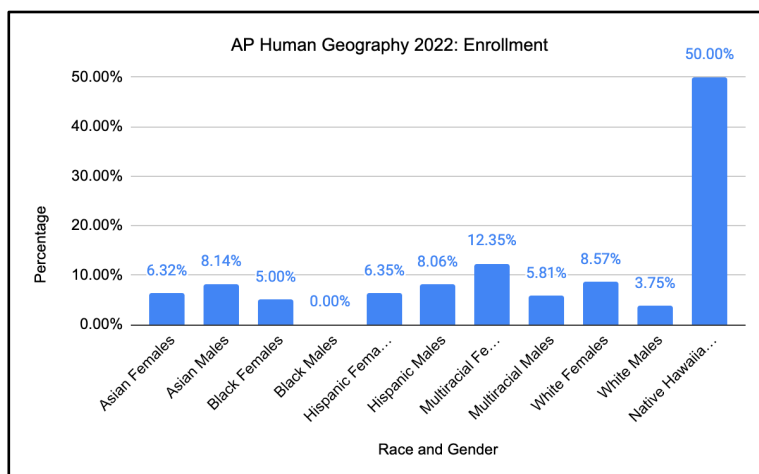


### ***Race and Gender***

Finally, we looked at the proportion of students of each race and gender enrolled in AP Human Geography. White females are the largest demographic in this course with 78 students (8.57% of all white females are enrolled) while White males have among the lowest proportions enrolled in the course with only 38 students. Not only were there a low number of Black students in the AP course, the proportion of Black male and female students enrolled in this course is the lowest of the humanities courses. Only 5% of Black females in the high school were enrolled in the course and 0 Black males were enrolled, raising questions as to why so few Black males and females are enrolling in AP courses entirely.

As mentioned, AP Human Geography is the only course where indigenous students are represented, however, it is only indigenous females who are enrolled in the course— there are no indigenous males in any AP classes analyzed in this report. According to the graph, Native Hawaiian female students appear to be enrolled at a high rate, but the raw data shows that there are only 2 Native Hawaiian females taking the course (there are 4 in the entire high school).

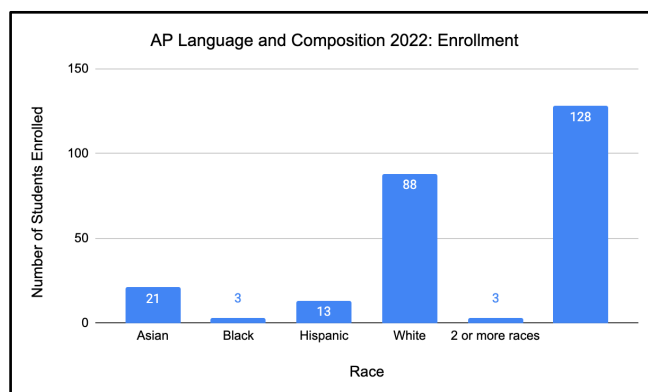
A lower percentage of Asian students, both male and female, enrolled in AP Human geography compared to that of other AP courses. However, the proportion of Asian Males and Asian Females are similar with 6 Asian female students and 7 Asian male students enrolled in the course. Similarly, there are 4 Hispanic females and 5 Hispanic males enrolled. Areas for concern include the low proportion of Multiracial males compared to the number of Multiracial females.



## AP Language and Composition

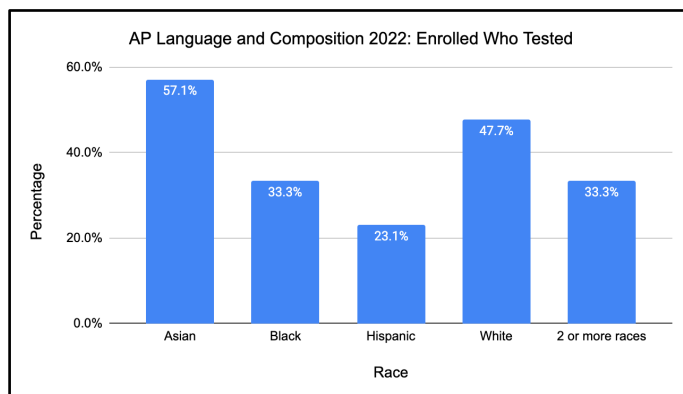
### *Race*

We next turn to two English-related courses, neither of which has a formal prerequisite requirement according to the online course selection guide. The enrollment data from AP Language and Composition indicates that 128 students were enrolled in the course. Of those students, 69% are White, 16% are Asian, 10% are Hispanic, 2% are Black and 2% are Multiracial. Enrollment trends in AP Language and Composition are, again, relatively similar to previous courses although this course has a slightly higher enrollment of students of color compared to the overall district enrollment.



Of the students who enrolled in the course, we noted substantially lower percentages of students signing up to take the AP Language and Composition test than in the social studies and history courses described above. In particular, we found significantly lower rates of test-taking

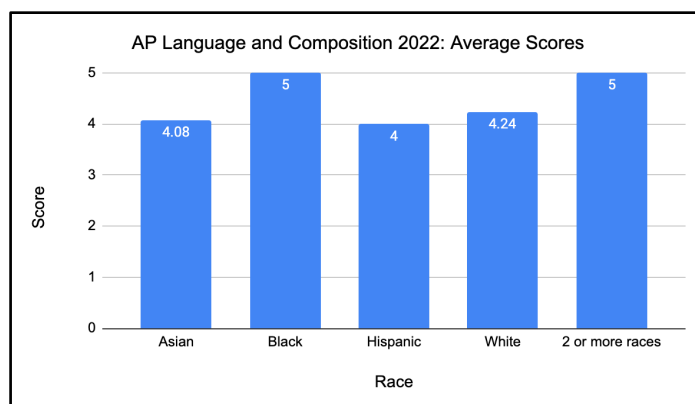
among student subgroups of color. For example, just 33% of Black and Multiracial students and 23% of Hispanic students took the AP exam. Given the low numbers of Black and Multiracial students enrolled in the course, this means that there was only one student from each racial group who took the AP Language and Composition exam. By comparison, 57% of enrolled Asian students and 47% of enrolled White students tested. Again, there is a trend of lower rates of enrolled students of color taking the AP tests, creating disparities among those with the potential to earn college credit.



When studying the scores for AP Language and Composition students (out of 5), we noted the following trends:

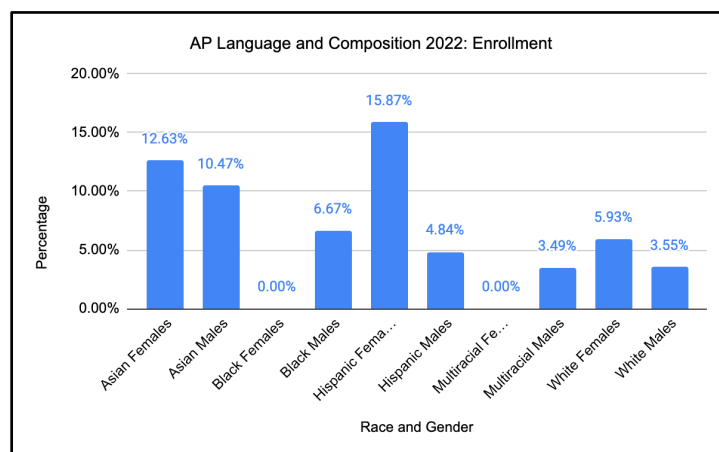
- The one Black student who tested received a score of 5 (N=1)
- The one Multiracial student who tested received a score of 5 (N=1)
- White students had an average score of 4.24 (N=42)
- Asian students had an average score of 4.08 (N=12)
- Hispanic students had an average score of 4 (N=3)

Although the average scores are very high with every student demographic earning an average score of 4 or above, in reality, for some groups this represents only one or a few students. Also, although over half of enrolled Asian students took the exam and received high scores (averaging above a 4), overall there were fewer Asian students who took this course exam compared to the humanities AP exams. Ultimately, although few enrolled students of color took the exam, those who did receive high scores (on average). White students also did slightly better on this exam than other humanities courses examined but recall that fewer than half of White students enrolled in AP Language and Composition took the AP test.



### ***Race and Gender***

Similar to AP Literature, Asian females and White females have a greater proportion of enrollment in AP Language and Composition than Asian males and White males. In fact, there are 20 more White female students than White males enrolled in the course. And, like other trends, of the Black students enrolled, all are males, making this course the second in this report not to have any Black female representation along with AP US History. There are also no Multiracial females enrolled in this course. By contrast, there are significantly more Hispanic females (10) than Hispanic males (3) enrolled in AP Language and Composition. There are 63 Hispanic females and 62 Hispanic males in the school and only 4.8% of Hispanic males are enrolled in AP Literature.<sup>8</sup>

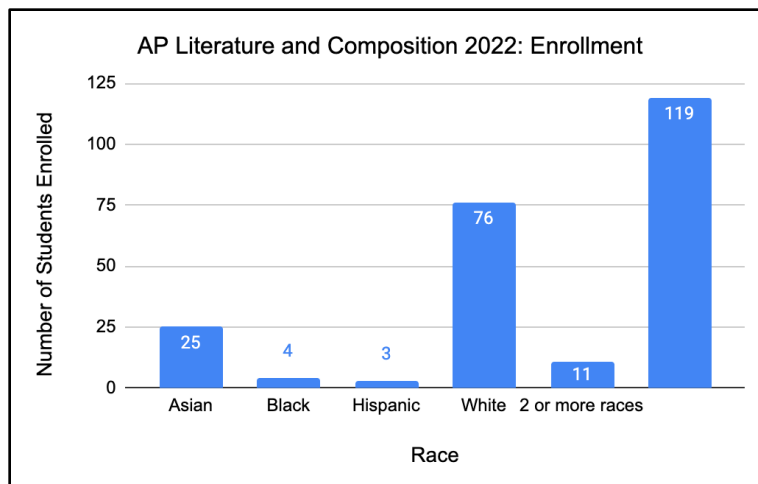


<sup>8</sup> For consistency, we compare all of the enrollment in the AP course to the entire SCAHS enrollment even though some courses may be targeted to one grade level. We noticed students from all grade levels in many of the courses examined here.

## AP Literature and Composition

### *Race*

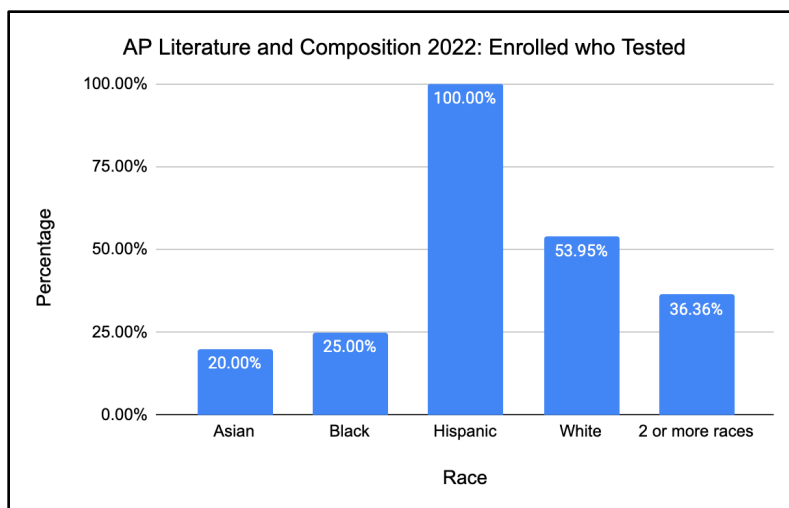
Approximately similar numbers of students were enrolled in the AP Literature and Composition. Of these 119 students, 64% of the students are White, 21% are Asian, 9% are Multiracial, 3% are Black and 3% are Multiracial. Again, this is a slightly higher percentage of students of color than their share among the entire enrollment.



Of the students who were enrolled, 100% of Hispanic students took the exam, however, this was only three students. For all other students, there is a significant disparity in the remainder of students who were enrolled in AP Literature and Composition who actually tested—potentially raising questions about available student supports and resources for taking the exam. About 54% of White students, 36% of Multiracial students, 25% of Black students, and only 20% of Asian students who were enrolled actually tested. Excluding Hispanic students, the enrollment-to-testing ratio for each demographic group of students was lower than among other non-prerequisite courses.



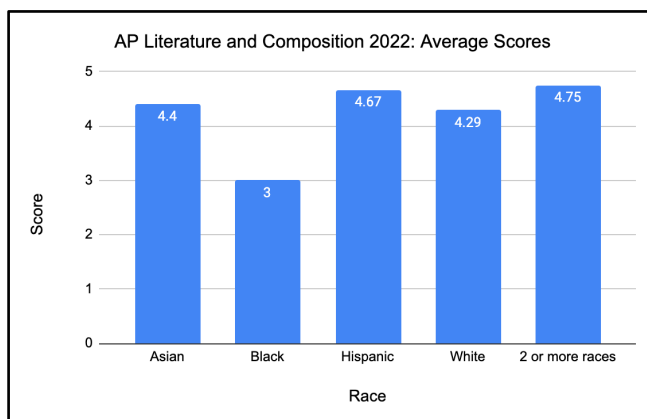
## Equity Analysis of AP in SCASD



When analyzing the scores for AP Literature and Composition (out of 5), we noted the following trends:

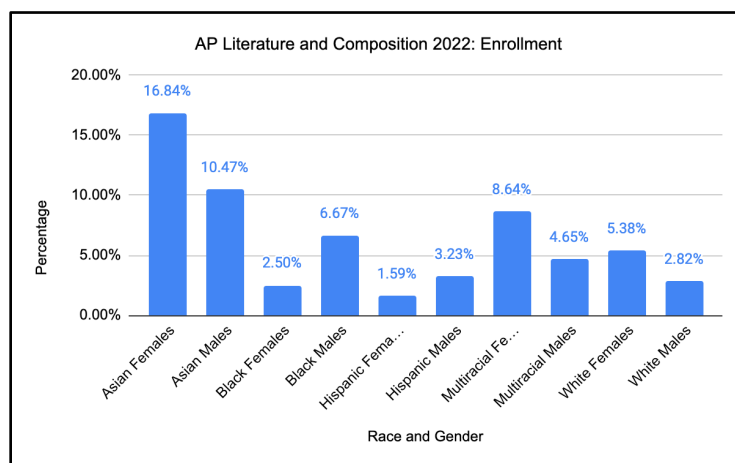
- Multiracial students had an average score of 4.75 (N=4)
- Hispanic students had an average score of 4.67 (N=3)
- Asian students had an average score of 4.4 (N=5)
- White students had an average score of 4.29 (N=41)
- A Black student had an average score of a 3 (N=1)

Similar to AP Language and Composition, there are significantly fewer students testing than enrolling, however, the students who are testing are performing well on the exams with Asian, Hispanic, White, and Multiracial students scoring on average above a 4.



### ***Race and Gender***

As with other AP courses discussed earlier in the report, Black and Hispanic males and females consistently have some of the lowest representation in AP classes. Of these two demographics, Black and Hispanic males are enrolled at slightly higher rates than Black and Hispanic females. Black and Hispanic females had the lowest percentage of students enrolled. However, Multiracial, Asian, and White females have a greater percentage of students enrolled in AP Literature and Composition than Multiracial, Asian, and White males.



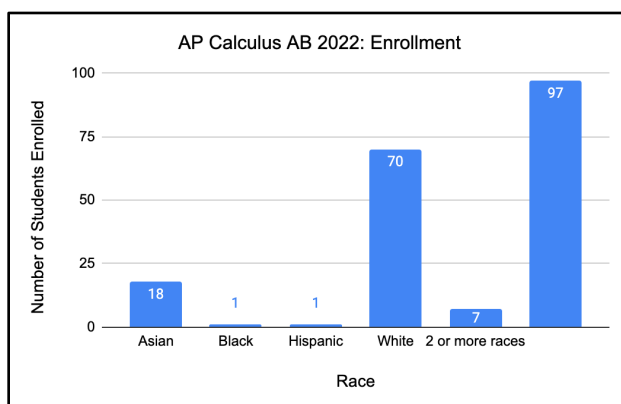
### **Courses with Prerequisites**

In the following section, we explore the enrollment and test-taking trends of courses that have prerequisites. In particular, we examine several math and science courses (Calculus AB, Calculus BC, Statistics, and Physics).

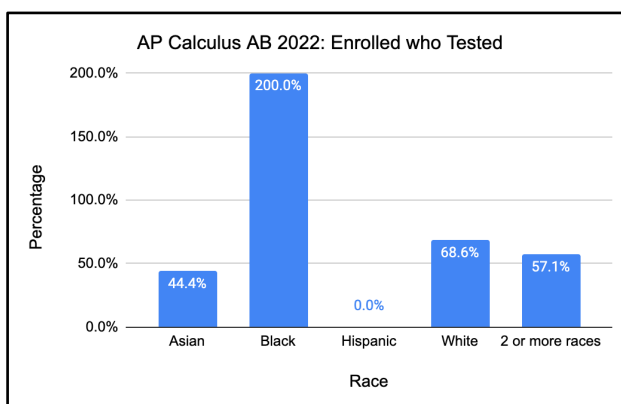
#### **AP Calculus AB**

##### ***Race***

The data from AP Calculus AB indicated that there are 97 students enrolled in the course, the largest of the three math courses we will examine in this report. Of these students, 72% of the students are White, 19% are Asian, 7% are Multiracial, 1% are Black and 1% are Hispanic. For Black and Hispanic students, their share of the AP Calculus AB enrollment is a lower percentage than they are of the total high school enrollment, indicating that they are underrepresented in this AP course.



When looking at the number of students who enrolled and tested, the data indicated that 200% of Black students, 68.6% of White students, 57.1% of Multiracial students, 44.4% of Asian Students, and 0% of Hispanic students took the AP Calculus AB exam after enrolling in the course. For Black students, the raw data indicates that one Black student was enrolled, and two took the exam. Thus, it is plausible that one Black student did not take the AP course but still took the AP exam<sup>9</sup>. Nevertheless, the number of Asian students enrolled compared to those who tested is still a smaller proportion than White or Multiracial students. There was only 1 Hispanic student who was enrolled in this course, but they did not test so the percentage is 0%, again displaying a significant lack of enrollment and testing for Hispanic students in AP Calculus AB.



When analyzing the scores for AP Calculus AB (out of 5), we noted the following trends:

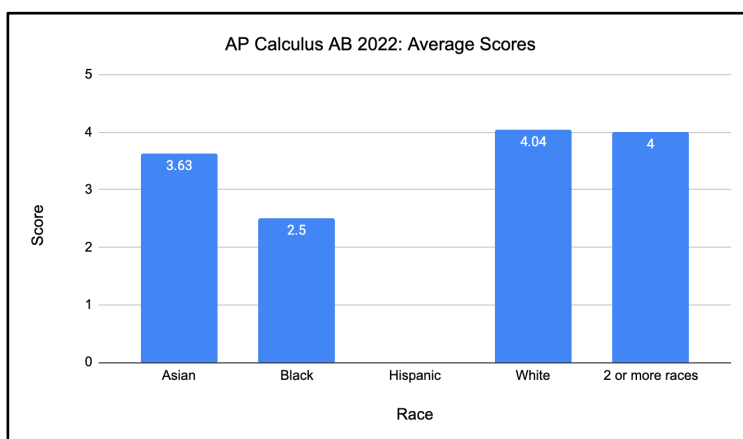
- White students had an average score of 4.04 (N= 48)
- Multiracial students had an average score of 4 (N=4)

<sup>9</sup> As mentioned above, in future analyses, it would be helpful to have de-identified student level data to be able to track discrepancies in counts of enrolled and tested students.

## Equity Analysis of AP in SCASD

- Asian students had an average score of 3.63 (N=8)
- Black students had an average score of 2.5 (N=2)

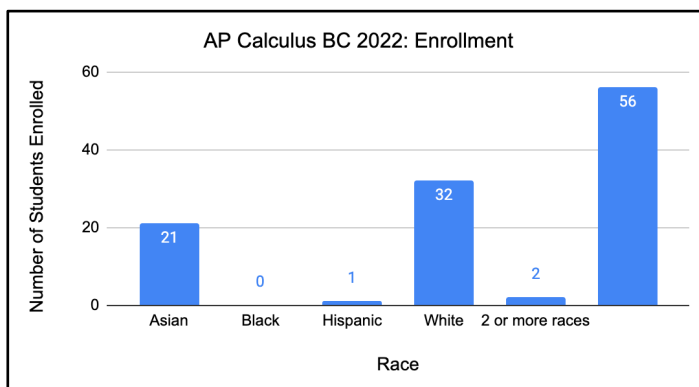
The data indicates that the Black students who took the AP exam had the lowest average score amongst the other students by demographic, and White students received the highest scores with an average score of 4.04. In fact, the majority of White students who took the AP Calculus AB exam scored a 4 or a 5. However, Asian students tended to score a little lower on this exam compared to their scores in other courses, with an average score under 4.



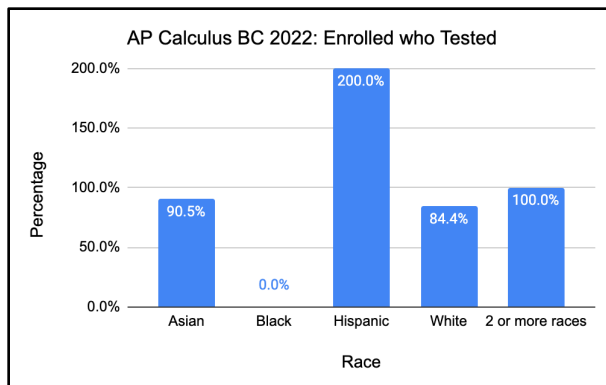
## AP Calculus BC

### *Race*

SCASD offers an additional AP Calculus course for those wishing to go beyond introductory AP Calculus. The enrollment data from AP Calculus BC indicated that of the 56 students enrolled in the course, and approximately 57% of the students are White, 38% are Asian, 4% are Multiracial, and 2% are Hispanic. Again, Hispanic students are underrepresented, and Black students are not represented at all while there are higher percentages of Asian students enrolled in this course.



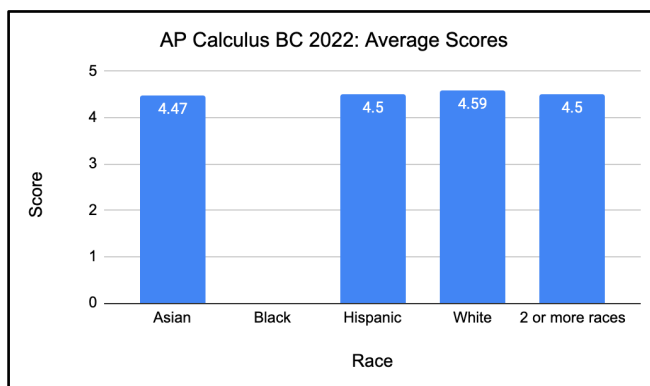
The rates of students who took the AP test were generally higher than those in Calculus AB. The data shows that the vast majority of Asian students who are enrolled in the course also tested with a rate of 91%. Similarly, the majority of White students who were enrolled and tested was 84.4%. Hispanic students had a rate of 200% because one student who was enrolled in the course tested, and potentially another Hispanic student who was not enrolled in the course but completed the exam also tested. All students who identified as multiracial also tested but, again, this is only representing 2 students.



When analyzing scores for AP Calculus BC (out of 5), we noted the following trends:

- White students had an average score of 4.59 (N=27)
- Multiracial students had an average score of 4.5 (N=2)
- Hispanic students had an average score of 4.5 (N=2)
- Asian students had an average score of 4.47 (N=19)

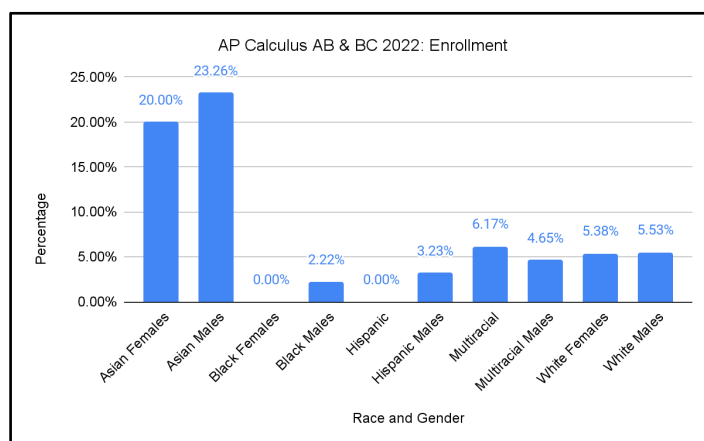
The data indicate that of the students who did take the AP Calculus BC exam, each student demographic had high average scores near 4.5. There were no Black students.



### ***Race and Gender***

AP Calculus AB & BC enrollment totals are computed together due to SCASD's 2021-2022 course guide indicating that students take either course for a mathematics selection, therefore, it is unlikely a student would be enrolled in the courses concurrently. A fifth or more Asian females and males in SCASD were enrolled in an AP Calculus course. By comparison, no Black or Hispanic females were enrolled, and under 4% of males from those racial/ethnic groups were enrolled in AP calculus.

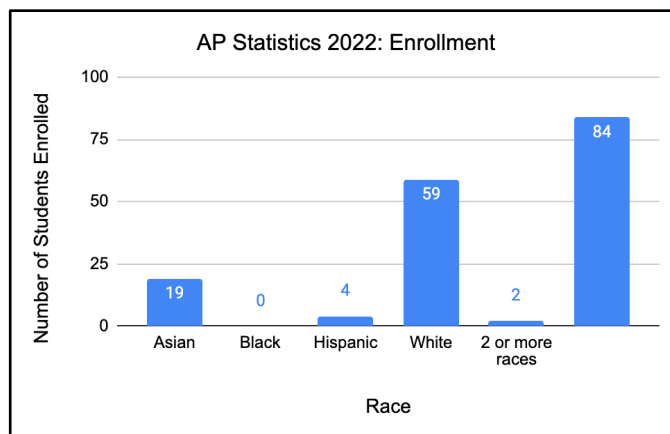
Within racial groups, Asian, Black, Hispanic, and White males had a slightly higher percentage of representation compared to females identifying as Asian, Black, Hispanic, or White. Multiracial females had slightly more representation compared to Multiracial males, but the raw numbers indicated it was a one-student difference. It appears that in these advanced math courses, male students are enrolling at a slightly higher rate than female students, however, it is important to note that most of the male students enrolled are White or Asian males. Black and Hispanic males are underrepresented considering only 2.2% of Black males and 3.23% of Hispanic males are enrolled, meaning there is only 1 Black male in Calculus AB and two Hispanic males in either Calculus AB or BC. Another example of underrepresentation includes Black and Hispanic females as none are enrolled in this course.



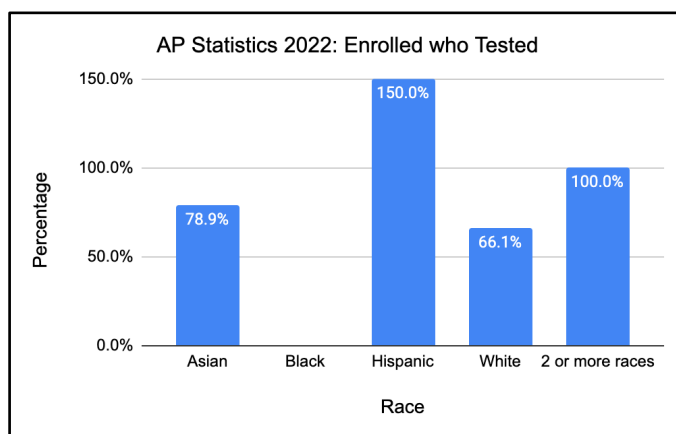
### **AP Statistics**

#### ***Race***

AP Statistics is another AP math course offered. The enrollment data from AP Statistics indicated that of the 84 students enrolled in the course, approximately 70% of the students are White, 23% are Asian, 5% are Hispanic, and 2% are Multiracial. Black students are not represented at all in this course.



Similar to other courses where testing exceeds enrollment rates, the data for Hispanic students is 150% because 4 students enrolled but 6 took the exam. 100% of the two Multiracial students who were enrolled were tested. Lower percentages of Asian (79%) and White (66%) students took the exam they comprised a higher *number* of test takers. The raw numbers indicate that 39 White students and 15 Asian students took the exam, which is substantially higher than the other student demographics.

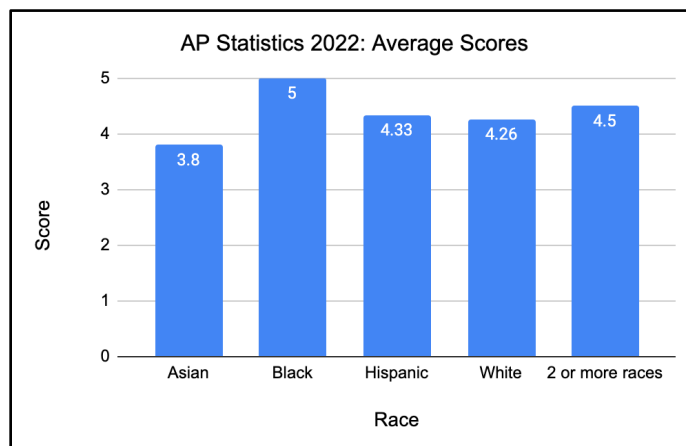


When analyzing the scores for AP Statistics (out of 5), we noted the following trends:

- A Black student had a score of 5 (N=1)
- Multiracial students had an average score of 4.5 (N=2)
- Hispanic students had an average score of 4.33 (N=6)
- White students had an average score of 4.26 (N=39)
- Asian students had an average score of 3.8 (N=15)

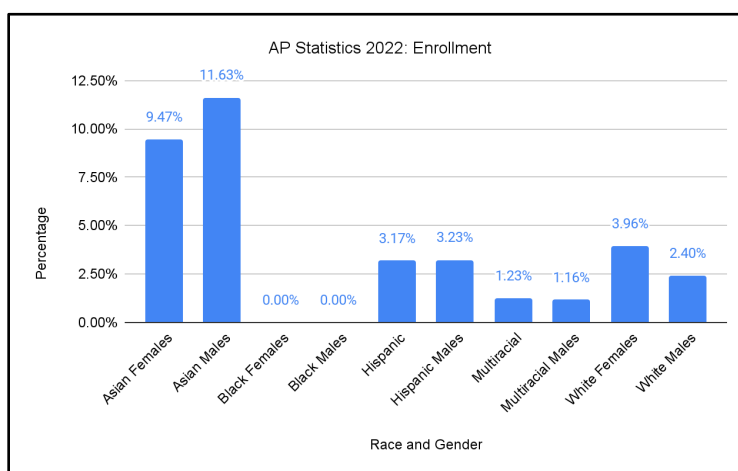
## Equity Analysis of AP in SCASD

Although no Black students were enrolled in the course, there is one Black student who received a score of 5. The average for all student groups except Asian students, were at least 4, indicating strong mastery, on average, among those who take the test.



### ***Race and Gender***

Continuing a pattern reported above, the highest proportion of students enrolled in AP Statistics is among Asian males and females. White females had a higher enrollment rate compared to White males at nearly 4%. No Black students are enrolled and a little over 1% of Multiracial males and females in the school are enrolled. Similarly, there is also limited enrollment of Hispanic students as a little over 3% of enrolled students are identifying as Hispanic males or females. Hispanic males, however, had the second highest rates among male students. Overall, there is a limited representation of non-Asian minoritized students.

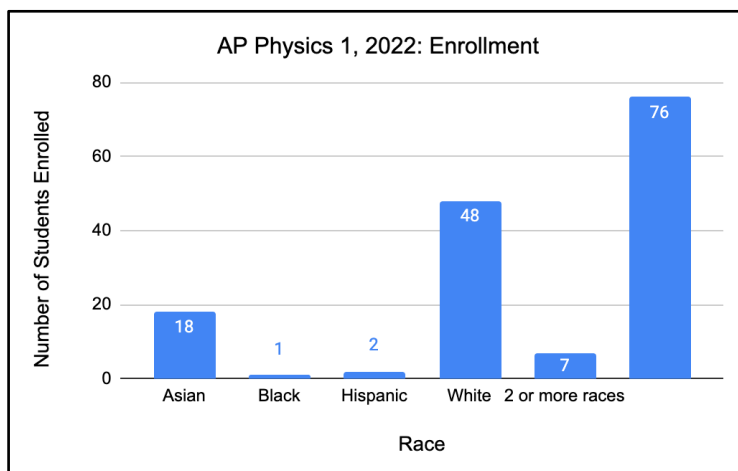




## AP Physics 1

### *Race*

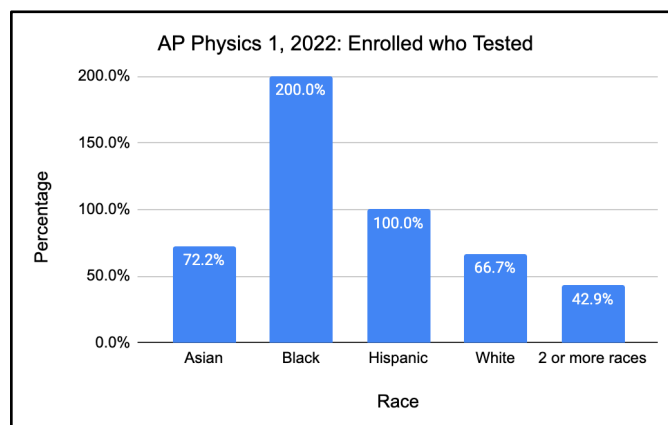
The enrollment data from AP Physics 1 indicated that of the 76 students enrolled in the course, approximately 63% of the students are White, 24% are Asian, 9% are Multiracial, 3% are Hispanic, and 1% are Black. Both the percentages and numbers of Black and Hispanic students enrolled in this course are quite low (e.g., three students combined).



For most student groups there was a relatively high percentage of enrolled students who took the AP test in Physics. Similar to previous courses described, the over 200% rate for Black students is likely a result of one Black student enrolling in the course, but two testing—potentially being a reason for such a high percentage.<sup>10</sup> The two Hispanic students who were enrolled in the course took the exam, thereby, having a 100% enrollment-to-testing ratio. Despite higher numbers of Multiracial students, less than half of the students who enrolled tested (42.9%). Between two-thirds and three-fourths of White and Asian students took the AP Physics test.

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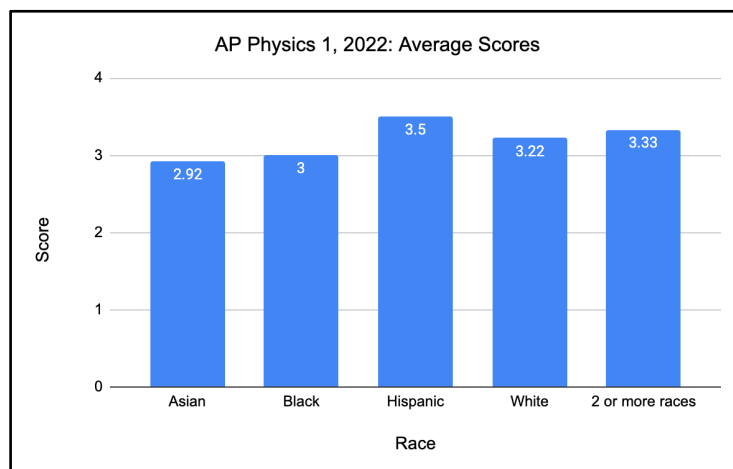
<sup>10</sup> We don't know if this is a result of a student taking the test who wasn't enrolled or a discrepancy between the datasets we relied on for this report.



When analyzing the scores for AP Physics 1 (out of 5), we noted the following trends:

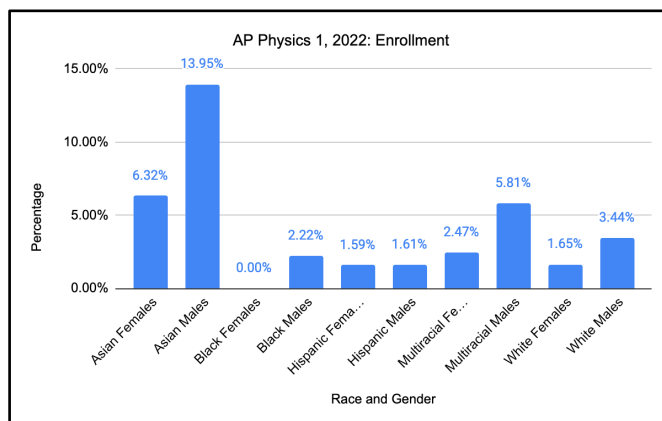
- Hispanic students had an average score of 3.5 (N=2)
- Multiracial students had an average score of 3.33 (N=3)
- White students had an average score of 3.22 (N=32)
- Black students had an average score of 3 (N=2)
- Asian students had an average score of 2.92 (N=13)

AP Physics 1 garnered the lowest average scores amongst all races of students with all averaging a 3.5 or below. Asian students had the lowest scores, which is another anomaly compared to the rest of the data in this report. Few Black, Hispanic, and Multicultural students tested; those that did test have an average score between 3 and 3.5.



### ***Race and Gender***

AP Physics has comparable trends to the AP courses in mathematics. There is a low percentage of Black and Hispanic males and Hispanic and Multiracial females. The percentages show that less than 2-3% of students from within these demographics in the high school are represented in this course. Nearly 14% of all Asian male students are in AP Physics. Though 3.4% of White males in the high school are enrolled, the data indicates that 33 students are White males, which is still the largest demographic represented. White females are another group that appears to be underrepresented given less than 2% are enrolled, meaning only 15 are enrolled— a little less than half of white males. It is also vital to report that there are no Black female students enrolled in this course as seen in several other courses. That said, AP physics is another course that has similar trends to the mathematics AP courses with males typically having higher representation than females.



### **Discussion and Recommendations**

Based on these data points, White students are the overwhelming majority in all of the AP courses analyzed within this report. Some of this is because of their higher percentage in the SCASD enrollment, but as we saw, there were differential enrollment rates in these courses by student race and gender. Asian students are the second most enrolled demographic group overall and the most enrolled minoritized group of students in SCASD. Multiracial students are the second most enrolled minoritized group of students, followed by Hispanic, Black, and Indigenous students. Indigenous students are the least enrolled student subgroup, as they were only represented in AP Human Geography. As a whole, Black students are the student subgroup with the least enrollment in AP courses, followed by Hispanic students. In fact, there are two prerequisite courses where Black students were not represented (AP Calculus BC and AP Statistics).

After analyzing the AP data from the 2021-22 school year, several conclusions were made. In addition to White students being the overwhelming majority in every course, they also

account for the majority of AP exams taken in total by SCASD students, even where in some courses they had a lower percentage of enrolled students taking the AP test. Asian students have the second highest enrollment rates and are the most enrolled of the minoritized students in the district; they also represented high proportions by race and gender when assessing enrollment proportions from the SCAHS enrollment. Black students have the lowest enrollment rates and are the most underrepresented compared to other student demographics. It is also important to note that enrollment rates vary with prerequisites. Although they deal with different subjects, all of the courses with prerequisites had lower numbers of students enrolled, which may be one consequence of having prerequisites for a given AP course. Patterns varied a bit depending on AP course, but there were low rates of Black, Multiracial and Hispanic students in courses with prerequisites. We hope to continue to study trends, including to see any changes as a result of some efforts to inform minoritized students and families of AP options.

In terms of average scores, Black students technically had some of the highest average scores out of all the student demographics, but this was often because it represented one or few students. For example, if one Black student takes an AP exam and scores a 5, this can appear as if Black students are thriving when in reality it is one student performing well; we also do not know if this represents the same student in multiple subjects or multiple students. In general, those who take the AP exams in SCASD typically perform well as average exam scores range from 3-4.5.

We hope this analysis can help the district understand the different dimensions of AP access among its students, including areas in which we have identified disparities. More work is needed to further investigate these trends, particularly over multiple years and to identify whether any practices to mitigate disparities are showing promise. Reducing gaps is critical because of how it might affect students' postsecondary options. In the meantime, however, we believe that this should provide a foundation for assessing formal and informal barriers to students' AP course and test access.<sup>11</sup> Potential ideas to consider could include reconsidering prerequisites and/or ways to help students, especially from underrepresented backgrounds, gain the necessary prerequisite coursework to enroll. Informing students and parents early and often about the AP courses, their requirements and benefits—including from a variety of sources (e.g., counselors, teachers, peers, and other trusted adults or older students). More racial diversity among AP teachers could also be a welcoming signal for students of color into AP courses. Finally, it is likely that disparities in access to advanced coursework and preparation begins prior to high school, and thus efforts to reduce disparities in earlier grades are also important actions to take to provide more equitable access to advanced coursework.

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<sup>11</sup> For research to assist the district in these efforts, see e.g., Hirschl, N., & Smith, C. M. (2023). Advanced Placement Gatekeeping and Racialized Tracking. *Sociology of Education*, 96(3), 190–210. <https://doi.org/10.1177/00380407231161334>; to read about Evanston, IL's efforts see Bavis, P. (December 2016/January 2017). Detracked — And going strong. *Phi Delta Kappan* 98 (4), 37-42 available at <https://kappanonline.org/detracked-and-going-strong/>.

## **About the Center for Education and Civil Rights (CECR)**

The Center for Education and Civil Rights seeks to be a hub for the generation of knowledge and coalition-building among the education and civil rights communities to promote research-based actions that address the complicated nature of racial and ethnic inequality in the 21st century. The Center's collective work is intended to promote equity across the educational pipeline by supporting efforts that facilitate integration through an interdisciplinary approach. CECR is directed by Erica Frankenberg. For more information, see [cecr.ed.psu.edu](http://cecr.ed.psu.edu) or follow [@psu\\_civilrights](https://twitter.com/psu_civilrights).