PREDICTING COLLEGE SUCCESS: HIGH SCHOOL GPA AND STANDARDIZED TEST SCORES

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Michal Kurlaender, Kramer Dykeman, and Jacob Jackson
University of California, Davis

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INTRODUCTION

Most colleges and universities use a range of academic and nonacademic factors in their application review process to make admissions decisions. A key rationale for including many of these factors is the assumption that they predict how students will fare once in college. This has typically been assessed through traditional predictive validity models that test the correlation between students' high school academic performance and their first-year college performance. A student's high school grade point average and standardized test scores have long been used as academic measures for admission decisions.

The University of California (UC) consists of nine undergraduate-serving institutions, and those campuses represent the premier public research universities in the state. Since 2002 the UC has used a comprehensive review[1] process to make freshman admissions decisions, in multiple factors are considered when rating applications. Currently, UC campuses use at least 13 factors during the admissions process, including high school grade point average, academic coursework, quality of your academic performance relative to the educational opportunities available at applicants' high schools, and–until five years ago–standardized test performance on the SAT or ACT.[2] Starting with the 2021 freshman admissions cycle, the University of California (UC) stopped considering SAT scores in admissions decisions.

Upon dropping the standardized test score requirement, the UC saw increases in applications at all campuses, and among all groups of students, including historically underrepresented groups (e.g., Black, Latino, and American Indian students, as well as first-generation college students). Importantly, first year retention rates and four-year graduation rates have remained stable–if not improved–at the UC over the past five years.[3] Yet, UC students have also experienced lower performance in math courses, which, along with recent media attention about college preparation in math, have renewed questions about admissions policies.[4]

As the UC weighs whether to reintroduce a standardized assessment in admissions, we examine how well different academic indicators have predicted college outcomes over time. Specifically, we investigate how well high school grade point average (HSGPA), the SAT, and the state's accountability test, the Smarter Balanced Assessment (SBAC), predict first-year outcomes for students enrolled at UC campuses. Our analysis covers 2015 to 2024, a period spanning the years before the pandemic, the pandemic itself, and the more recent years in which UC did not consider any standardized assessments. Given recent attention on math preparation for college, we also examine high school math course-taking among UC applicants and enrolled students.

[1] University of California admissions policies differ somewhat by campus. Two campuses (UC Merced and UC Riverside) use a process that gives slightly more weight to quantifiable factors like GPA. The other campuses use "holistic review," a comprehensive scoring of an application where no fixed weight is given to any single aspect. See: https://www.universityofcalifornia.edu/news/how-the-university-of-california-evaluates-student-applications

[2] University of California Admissions

[3] From UC Infocenter

[4] University of California Regents Meeting (2026, Sept 26). "UC STEM Outcomes and Math Innovation". https://regents.universityofcalifornia.edu/regmeet/sept26/a1.pdf;
Kurlaender, M. (2026, Jan 29) "California colleges must partner with K-12 schools — not blame them — for students facing barriers to college" Cal Matters. https://calmatters.org/commentary/2026/01/college-barriers-uc-california-students/ ;
Senate-Administration Workgroup on Admissions (2025, Nov 6). Report. University of California San Diego Senate. https://senate.ucsd.edu/media/740347/sawg-report-on-admissions-review-docs.pdf

DATA DESCRIPTION

For our analysis, we use data from the University of California Office of the President (UCOP) that includes all first-time freshmen from California public high schools who applied to at least one UC Campus for fall enrollment between 2015 and 2024.[5] We then match these students to the records of California public high school graduating seniors[6] from the previous spring provided by the California Department of Education (CDE). To link these data, we apply fuzzy matching techniques using a student's name (first, middle, last), date of birth, gender, and high school of attendance.[7] In order to be included in our analysis for any given year, we must be able to find a student's high school record. In cohorts for which either the SAT or the SBAC was administered, a student must also have valid SAT and/or SBAC scores.[8]

This validity study uses three primary explanatory measures to predict first year college grade point average (GPA) at a UC campus (first year college GPA), and whether or not a student enrolls at a UC in the fall semester following the fall of their first year (persistence to the second year). Our primary explanatory measures are high school GPA[9] SAT scores for math and reading, and SBAC scale scores for math and English Language Arts (ELA). High school GPA is available the entire timespan (2015-2024). SAT scores are available for students entering in the fall of each year between 2015-2020, the years in our sample that the UC required the SAT scores for admission. The SAT was redesigned during this period; students entering in 2015 and 2016 took the former SAT, students entering in 2017 took the old, redesigned, or both versions; and students entering in 2018 through 2020 took the redesigned SAT.[10] The SBAC is administered to California public students in grades 3 through 8 and grade 11. Statewide administration of the SBAC began in the spring of 2015, allowing us to observe the SBAC scores of students entering the UC campuses in the fall of 2016 onward, with the exception of students entering in fall 2021 and fall 2022, for whom the SBAC was suspended due to the COVID-19 pandemic.[11]

In all models we also control for unobserved differences between UC campuses.[12] In some of our models we include a binary measure of whether a student is socioeconomically disadvantaged (SED) as defined by the CDE. The CDE considers a student SED if the student qualifies for free or reduced-price lunch, or if none of the student's parents or guardians completed high school. Summary statistics are available in Appendix Tables A1-A3.

[5] UCOP supplied us with application, acceptance, and enrollment information for students who applied for the Fall of 2025, but sufficient time had not passed for first year GPA and persistence to the second year to be recorded, so these students are excluded from the analysis.

[6] Students enrolled in 12th grade on April 15th of the relevant year are counted as high school graduates for that academic year.

[7] Our match rates are: 2015: 96.7%; 2016: 97.3%; 2017: 98.7%; 2018: 98.8%; 2019: 98.2%; 2020: 98.8%; 2021: 98.1%; 2022: 98.1%; 2023: 98.0%; 2024: 98.1

[8] The percent of students who had valid SAT scores in the years the UCs accepted the SAT for admission was: 2015: 81.7; 2016: 79.2; 2017: 76.8; 2018: 53.1; 2019: 83.6; 2020: 81.9. The percent of students who had valid SBAC scores in the years that the SBAC was administered was: 2016: 90.7; 2017: 94.8; 2018: 95.8; 2019: 94.5; 2020: 96.1; 2023: 92.7; 2024: 94.7. The percent of the entering class included in the analysis: 2015: 79.2; 2016: 72.4; 2017: 73.3; 2018: 51.3; 2019: 79.4; 2020: 79.1; 2021: 98.1; 2022: 98.1; 2023: 92.7; 2024: 94.7.

[9] We predict first-year outcomes using both weighted and unweighted high school GPA separately. There are no substantive differences in the results. Results here are presented using weighted high school GPA. Results with unweighted high school GPA are available at request from the authors.

[10] For visual simplicity in all figures, we present the results from 2017 using students who took the redesigned test. Tables in the Appendix contain results for students who took the SAT before the redesign and after the redesign.

[11] The SBAC was suspended in 2020 and 2021. Prior to the pandemic, the SBAC summative assessment for 11th grade students was 7.5 hours long; following the pandemic, the assessment is 5.5 hours long.

[12] We do this using binary indicator variables that are set equal to one if a student applied to a specific campus.

METHODOLOGY

We follow a standard validity study approach and compare how well different groupings of explanatory variables predict college outcomes.[13] To do this, we calculate the correlation coefficient between each model's predicted outcome for a given student and that student's actual outcome.[14] Correlation coefficients range from zero to one and measure the strength of the linear relationship between two variables.[15] Appendix Figures A1 - A3 give a visual sense of how well each of the main predictor variables in this study explain first year college GPA. While each predictor is correlated with first year GPA, there is also substantial variation that remains unexplained.

RESULTS

Overall we find that high school GPA, the SAT, and the SBAC each moderately predict first-year GPA, at similar strength, and these relationships have stayed stable over time. High school GPA remains at least as strong a predictor as before, despite concerns about grade inflation and the end of the SAT in admissions. Combining high school GPA with a test score (SAT or SBAC) modestly improves prediction beyond GPA alone. All three measures have low and almost equal predictive power when it comes to college persistence into the second year. Lastly, we investigate the math preparation for UC enrollees, and document a steadily shrinking share of UC students who enrolled in precalculus and calculus in high school, a decline that began before the pandemic and before the SAT was dropped.

Figure 1shows the correlations between first year college GPA and models using high school GPA, SAT scores, and/or SBAC scores to predict first year college GPA (the full set of coefficients are reported in Appendix Table A4). These coefficients range from .44 to .64, reflecting the moderately strong relationship typical of similar types of analyses.[16] At the same time, these coefficients are all substantially less than one, reflecting the reality that for any given high school GPA or test score, there is a wide range of college outcomes (see Figures A1 - A3 in the Appendix). These correlation coefficients have also been quite steady over this nearly 10-year period. We find that when the UCs stopped using the SATs in the admissions process, the correlation coefficients between models that only use high school GPA to predict first year college GPA increased to the levels (.57 to .62) of models which used both high school GPA and SAT scores to predict outcomes before the change (.57 to .63). This suggests that post-pandemic high school GPA seems to be at least as predictive of first year college performance as it was prior to the pandemic.

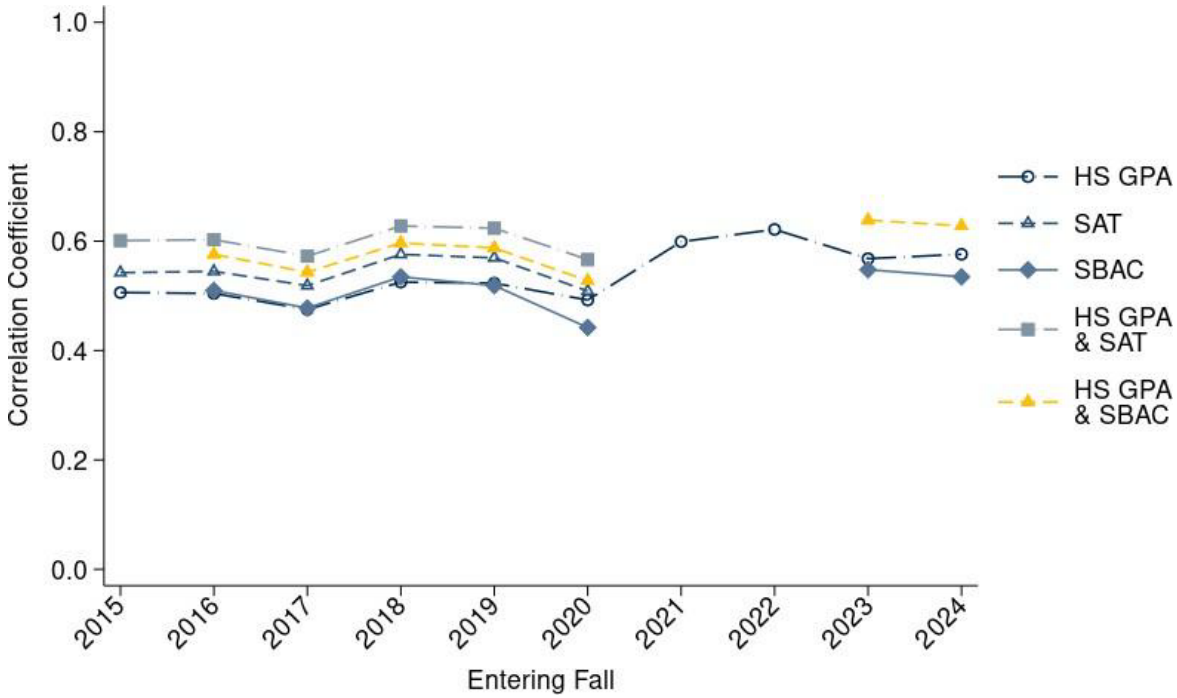
[13] The first six groupings are: high school GPA, individual SAT math and reading scores; individual math and ELA SBAC scale scores; high school GPA and SAT scores; high school GPA and SBAC scores; and high school GPA, SAT scores, and SBAC scores. The second six groupings are identical except for the addition of SED.

[14] This is equivalent to the square root of the R^2 of a linear regression. For the exact methodology, including the restriction of range correction. Kurlaender, M. Dykeman, K. A. (2019) "Predicting College Success: How Do Different High School Assessments Measure Up?" PACE. https://edpolicyinca.org/publications/predicting-college-success-how-do-different-high-school-assessments-measure-2019

[15] If two variables have a correlation coefficient of zero, the variables are completely unrelated and cannot be used to predict each other. If two variables have a correlation coefficient of one, each variable perfectly predicts the values of the other variable.

[16] Kobrin, J. L., Patterson, B. F., Shaw, E. J., Mattern, K. D., & Barbuti, S. M. (2008). Validity of the SAT for Predicting First-Year College Grade Point Average. College Board.
Marini, J. P., Westrick, P. A., Young, L., & Shaw, E. J. (2024). SAT Score Relationships with College GPA. College Board.

Figure 1: Correlation between predictors & 1st year GPA (all students)

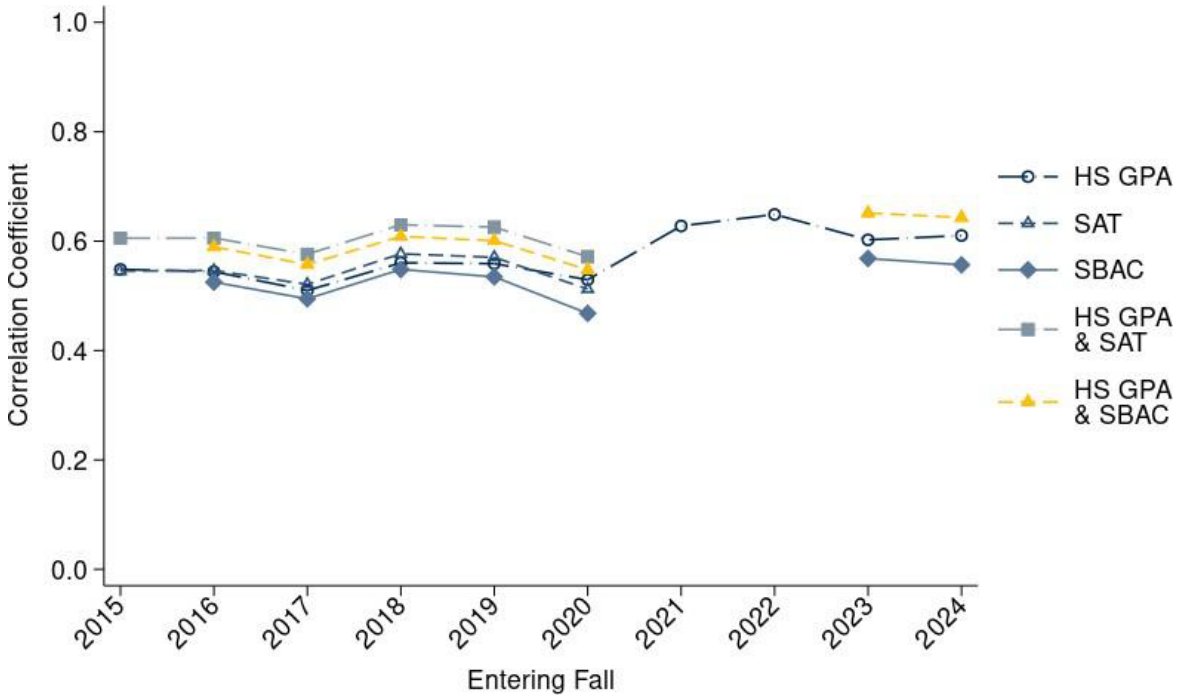


Note: High school GPA is the weighted high school GPA, which allows for grade points beyond 4 for more rigorous coursework such as AP classes. In 2017, students taking the revised SAT are included on the graph; results for students who took the SAT before it was revised can be found in Table A4 in the appendix. As the HS GPA, SAT, and SBAC series is visually difficult to distinguish between the HS GPA and SAT series, it is excluded from the graph but can be found in Table A4 in the appendix.

Adding SED to these models marginally improves predictions and slightly shrinks the range of coefficients to .47-.65 as shown in Figure 2 and Appendix Table A5. With the addition of SED, high school GPA and SAT scores become practically interchangeable as independent predictors of first year college GPA, indicating that any advantage SAT scores may have over high school GPA in prediction is in part due to its higher relative correlation with socioeconomic status.[17] These models also replicate the increase in predictive power of high school GPA in the years that the UCs have stopped using the SAT in admissions.

[17] In 2019, the correlation of SED and weighted high school GPA was -.22, SED math SAT scores -.46, SED and SAT reading scores -.47, SED and SBAC math scores -.36, and SED and SBAC ELA scores was -.27.

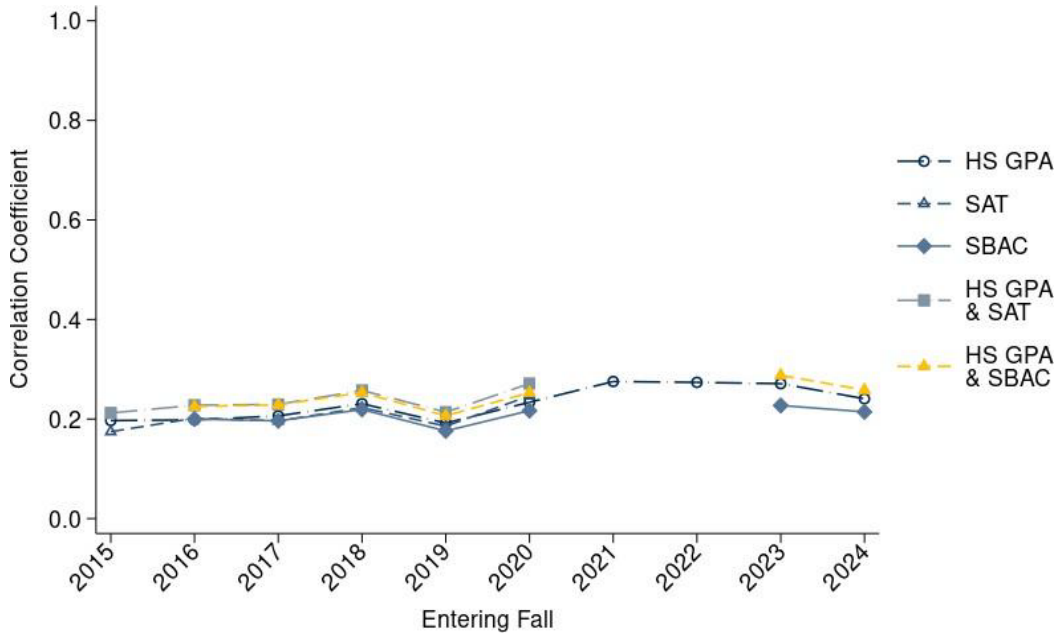
Figure 2: Correlation between predictors & 1st year GPA, SED included (all students)



Note: High school GPA is the weighted high school GPA, which allows for grade points beyond 4 for more rigorous coursework such as AP classes. In 2017, students taking the revised SAT are included on the graph; results for students who took the SAT before it was revised can be found in Table A5 in the appendix. As the HS GPA, SAT, and SBAC series is visually difficult to distinguish between the HS GPA and SAT series, it is excluded from the graph but can be found in Table A5 in the appendix.

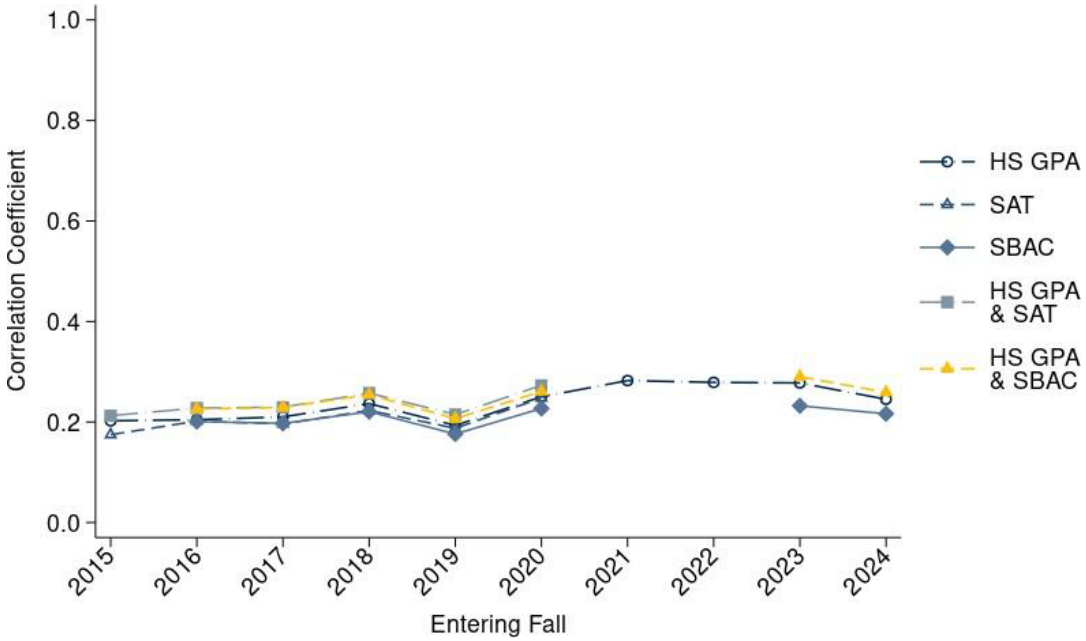
In addition to first year GPA, we also examine the strength of the relationship between GPA and test scores with persistence to the second year of college. To investigate persistence, we used the above models to predict persistence to the second year and calculate the correlation between those models' predicted values with a student's actual persistence. These coefficients are reported in Figures 3 & 4 and in Appendix Tables A6 & A7. The correlation coefficients are about half the size of those from the models that predict first year GPA. Some of that difference could be due to persistence being harder to predict than first year college GPA, but much of it is an artifact of trying to fit a linear model to a binary outcome. As such, the differences in scale should not be overinterpreted. The relative strength of predictors is marginally different in these models. High school GPA is almost always a better predictor of persistence to the second year than SAT scores, though the differences are so small that they are functionally equivalent. As above, here the predictive power of high school GPA also rises in 2021 and stays relatively higher from then on.

Figure 3: Correlation between predictors & persistence to the 2nd year, (all students)



Note: High school GPA is the weighted high school GPA, which allows for grade points beyond 4 for more rigorous coursework such as AP classes. In 2017, students taking the revised SAT are included on the graph; results for students who took the SAT before it was revised can be found in Table A6 in the appendix. As the HS GPA, SAT, and SBAC series is visually difficult to distinguish between the HS GPA and SAT series, it is excluded from the graph but can be found in Table A6 in the appendix.

Figure 4: Correlation between predictors & persistence to the 2nd year, SED included (all students)

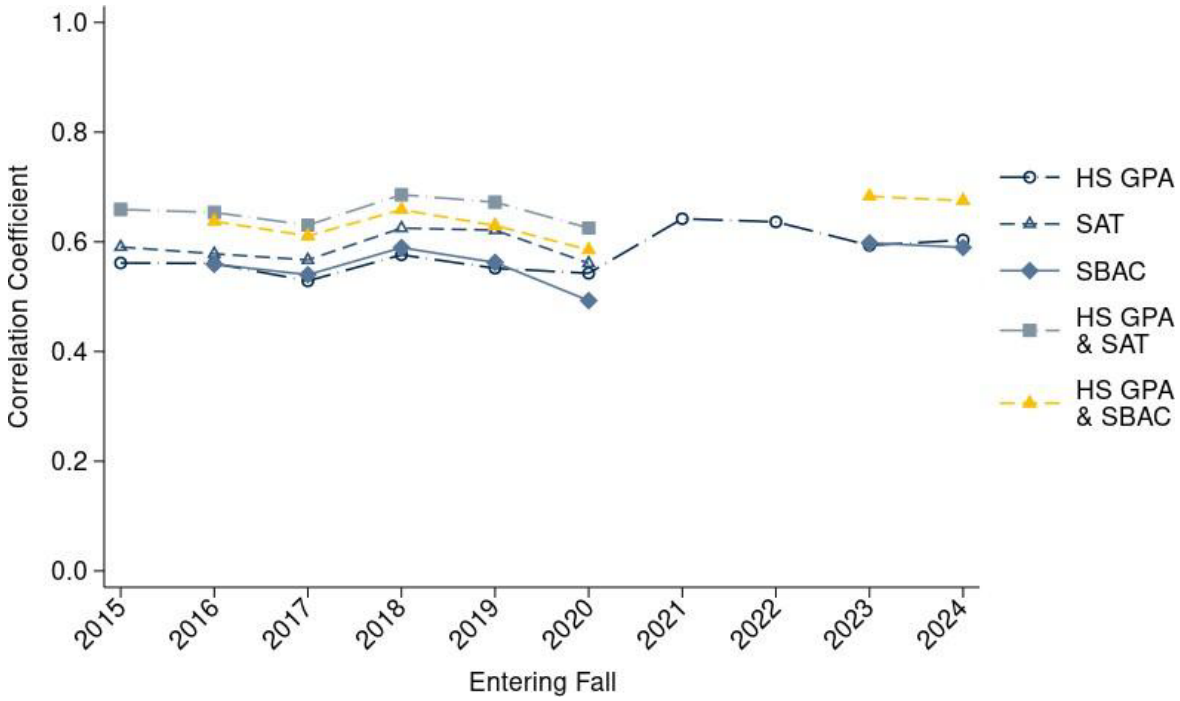


Note: High school GPA is the weighted high school GPA, which allows for grade points beyond 4 for more rigorous coursework such as AP classes. In 2017, students taking the revised SAT are included on the graph; results for students who took the SAT before it was revised can be found in Table A7 in the appendix. As the HS GPA, SAT, and SBAC series is visually difficult to distinguish between the HS GPA and SAT series, it is excluded from the graph but can be found in Table A7 in the appendix.

A Closer look at STEM

Focusing solely on STEM (Science, Technology, Engineering and Mathematics) majors yields similar results. We focus on STEM[18] students by restricting our population of enrolled students to students majoring in STEM. We find the same patterns over time as with the full sample of students, with correlations of .51 to .69 for all predictors of first year GPA, and from .17 to .30 for predictors of first year persistence. These results suggest that for STEM majors, the predictors perform at least as well as they do for the general population of students. For brevity, we graph the correlation coefficients between actual and predicted first year GPA below in Figure 5 and report the rest in Appendix Tables A8-A11. The patterns follow that of the general population, with the predictive power of high school GPA increasing after 2020.

Figure 5: Correlation between predictors & 1st year GPA, (for STEM majors)



Note: High school GPA is the weighted high school GPA, which allows for grade points beyond 4 for more rigorous coursework such as AP classes. In 2017, students taking the revised SAT are included on the graph; results for students who took the SAT before it was revised can be found in Table A8 in the appendix. As the HS GPA, SAT, and SBAC series is visually difficult to distinguish between the HS GPA and SAT series, it is excluded from the graph but can be found in Table A8 in the appendix.

A Notable Decline in High School Mathematics Course Taking

In prior work we document mathematics coursetaking among California high school students.[19] We find that the proportion of graduating seniors who took Algebra 2 or its equivalent (the foundation required for admissions eligibility at CSU and UC) has remained stable over time, but that 12th-grade math course-taking has declined in recent years. We also document that the proportion of students reaching precalculus and/or calculus during high school has decreased over the last 8 years. These declines are not explained by

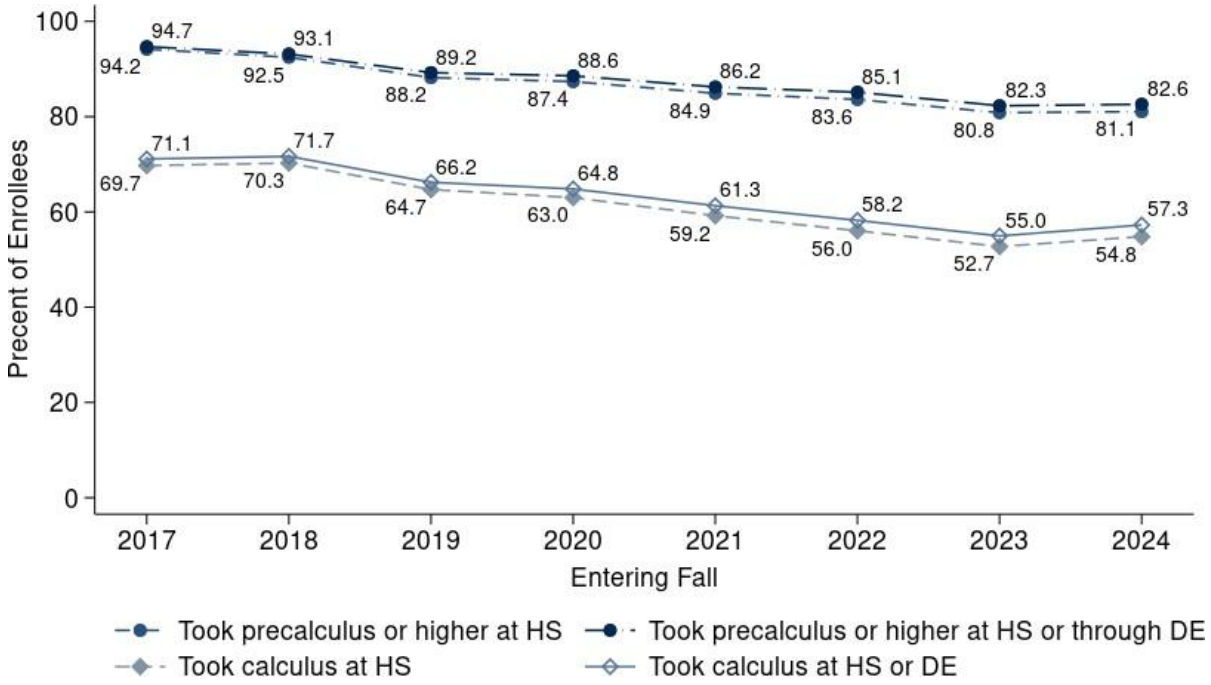
[18] We define STEM students as students with a first-year major that is on the current (last updated July 22, 2024) DHS STEM Designated Degree Program List Last. For more information, see: https://www.ice.gov/doclib/sevis/pdf/stemList2024.pdf
[19] https://edpolicyinca.org/publications/subtraction-and-substitution ;

rates of AP statistics (which has been steady over the past decade), or by the modest increases in dual enrollment. Here, we investigate whether these overall patterns are similar for UC students in particular, and for UC STEM students specifically.

Fewer high school students in California are taking math during their senior year. In prior work we found that 12th grade math coursetaking declined from 74.5% in 2107 to 71.6% in 2024 (including dual enrollment math). That nearly four percentage point drop is reflected among UC enrollees as well. From 2017 to 2014, the percentage of students who took 12th grade math dropped from 87.9% to 84.1%. Even STEM majors saw declines in 12th grade math course taking (89.0% to 85.3%).

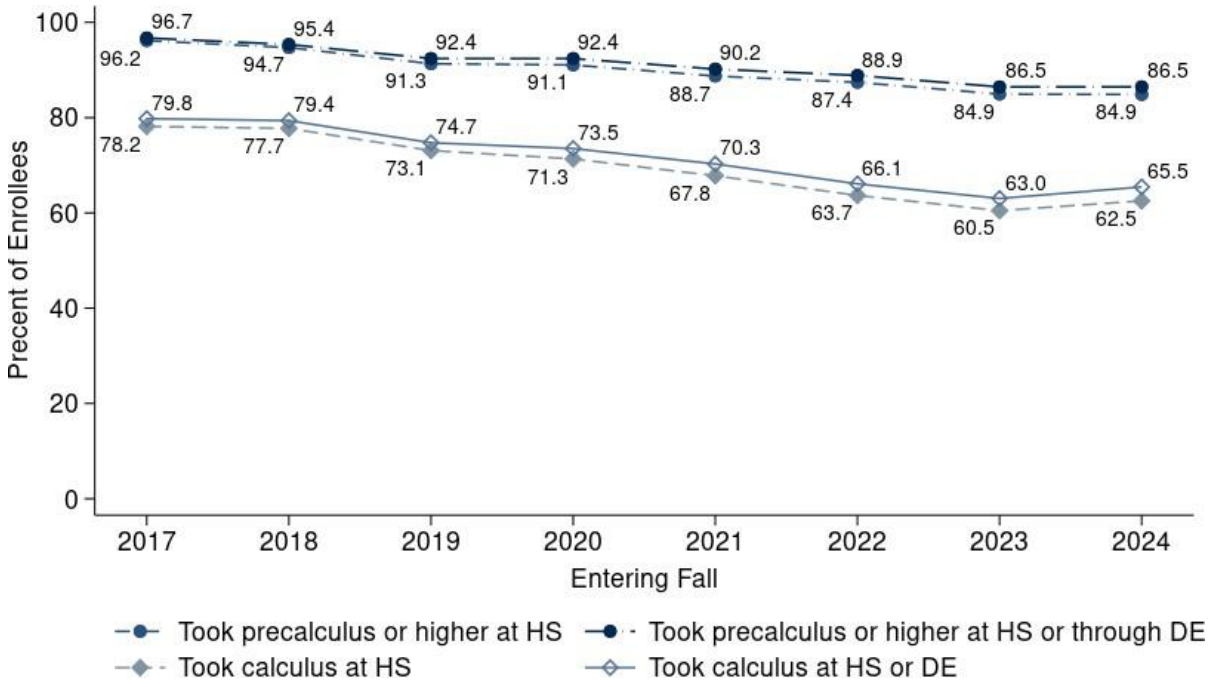
Fewer students who enroll at UC are taking advanced math courses in high school. Figure 6 shows the percentage of entering UC students who took a precalculus or calculus course during high school from 2017-2024. In 2017, the great majority (94.2%) of students enrolling in a UC took precalculus or calculus in high school, with an additional 0.5% taking it through dual enrollment. By 2024, however, the percent of students taking precalculus or calculus had dropped 13.1 percentage points to 81.1% (with an additional 1.5% taking precalculus or calculus through dual enrollment). There is a similar drop with calculus. Among those entering a UC in 2017, 69.7% had taken calculus (with an additional 1.4% taking calculus through dual enrollment), and in 2024, only 54.8% (with an additional 2.5% taking calculus though dual enrollment) of students had taken calculus. These trends suggest that today's UC students have, on average, less preparation in advanced math coursework in high school than students from prior cohorts. These trends are not concentrated among non-STEM students; Figure 7 shows similar patterns with STEM majors. In 2017, 79.8% of entering students who majored in STEM took calculus either at their high school or through dual enrollment. By 2024 that number was down to 65.5%.

Figure 6: Precalculus and calculus coursetaking in high school (all students)



Note: We are first able to observe course taking data in 2014. As such, 2015 and 2016 are excluded from the graph because we are unable to observe four years of coursetaking data.

Figure 7: Precalculus and calculus coursetaking in high school (STEM majors)



Note: We are first able to observe course taking data in 2014. As such, 2015 and 2016 are excluded from the graph because we are unable to observe four years of coursetaking data.

SUMMARY

In this working paper, we examine how well different high school achievement indicators have predicted UC first-year GPA and second-year persistence from 2015 to 2024. Consistent with previous research, we find that high school GPA, the SAT, and the SBAC each moderately predict first-year college GPA, at similar magnitudes, both for all UC enrollees and for STEM majors. Even so, first-year GPA varies widely among students with similar high school GPAs or test scores. The models are considerably weaker at predicting second-year persistence, but the patterns mirror those for first-year performance.

These relationships have been notably stable over time. Despite concerns about grade inflation and the removal of the SAT from admissions, high school GPA remains at least as strong a predictor of first-year college GPA as it was in the past. Adding a test score to high school GPA does improve prediction. Before the SAT was removed, combining high school GPA with either the SAT or the SBAC improved the correlation between predicted and actual outcomes. In recent years, combining high school GPA with the SBAC still improves prediction beyond high school GPA alone.

The more striking change over this period is in students' math preparation. Consistent with our recent statewide findings for all California public high school students, a shrinking share of UC students is completing advanced high school math. In 2017, 94.2 percent of entering UC students had taken precalculus or calculus in high school, and by 2024 that share had fallen to 81.1 percent. Calculus-taking fell from 69.7 to 54.8 percent. The decline appears even among STEM majors: the share who took calculus, in high school or through dual enrollment, fell from 79.8 to 65.5 percent. This decline has been steady since 2017, which predates both the pandemic and the end of SAT use in admissions.

As the UC considers whether to once again use testing in admissions, it should not ignore one likely root cause for declining math performance in college. Concerns about the preparation of entering UC students need to be addressed through strengthening the connection between UC and high school math preparation. In recent years, UC has encouraged a broader set of advanced math courses beyond the calculus pathway to meet eligibility.[20] That flexibility should come with a clear expectation that all students, including those not headed for STEM majors, continue taking advanced math and arrive prepared for the quantitative demands of UC coursework. In STEM fields, UC must work with K–12 schools, and ideally with CSU and the California Community Colleges, to address the declines in precalculus and calculus course taking and to make expectations for both admission and success in STEM majors clear to students, families, and schools. UC and the state must also ensure that every California high school student has access to these courses. Where high schools do not offer them, dual enrollment can help fill the gap, and as noted above, its use for calculus has already grown modestly, from 1.4 to 2.5 percent of entering students. Reinstating a test may change how UC selects its students, but only a sustained investment in high school math will improve how prepared those students are.

[20] Reed, S., Bracco, K., Kurlaender, M., & Merritt, C. (2023, February). Innovating high school math through K–12 and higher education partnerships [Report]. Policy Analysis for California Education. edpolicyinca.org/publications/innovating-high-school-math-courses-through-k12higher-education-partnership

APPENDIX

Table A1: Summary Statistics, students who applied to the UC

	Entering Fall										
	2015	2016	2017a	2017b	2018	2019	2020	2021	2022	2023	2024
SED											
No (%)	55.5	53.1	78.2	48.1	51.1	51.2	51.1	55.5	55.4	54.9	51.4
Yes (%)	44.5	46.9	21.8	51.9	48.9	48.8	48.9	44.5	44.6	45.1	48.6
STEM Major (%)	-	-	-	-	-	-	-	-	-	-	-
Mean unweighted HS GPA	3.5	3.5	3.6	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6
Mean weighted HS GPA	3.7	3.7	3.9	3.7	3.8	3.8	3.8	3.8	3.9	3.9	3.8
Mean SAT Math Score (old)	580	570	640	-	-	-	-	-	-	-	-
Mean SAT Reading Score (old)	550	550	600	-	-	-	-	-	-	-	-
Mean SAT Math Score (new)	-	-	-	580	610	610	600	-	-	-	-
Mean SAT Reading Score (new)	-	-	-	580	600	600	600	-	-	-	-
Mean SBAC Math Scale Score	-	2687	2751	2680	2692	2689	2697	-	-	2661	2663
Mean SBAC ELA Scale Score	-	2690	2731	2693	2704	2696	2700	-	-	2687	2689
N	71,817	67,429	18,457	63,902	54,339	81,165	79,130	109,860	114,010	107,534	111,550

Note: This table does not have rows for the % of STEM Majors, SBAC scores for STEM majors, mean first year GPA, or persistence to the second year, as in Table A3, as students need to enroll at a UC for these factors to be observed.

Table A2: Summary Statistics, students admitted to the UC											
	Entering Fall										
	2015	2016	2017a	2017b	2018	2019	2020	2021	2022	2023	2024
SED											
No (%)	58.2	55.1	78.8	48.6	52.7	53.0	52.2	55.1	54.8	55.5	51.5
Yes (%)	41.8	44.9	21.2	51.4	47.3	47.0	47.8	44.9	45.2	44.5	48.5
Mean unweighted HS GPA	3.6	3.6	3.7	3.6	3.7	3.7	3.6	3.7	3.7	3.7	3.7
Mean weighted HS GPA	3.9	3.9	4.0	3.9	4.0	4.0	3.9	3.9	4.0	4.0	3.9
Mean SAT Math Score (old)	610	590	660	-	-	-	-	-	-	-	-
Mean SAT Reading Score (old)	590	570	620	-	-	-	-	-	-	-	-
Mean SAT Math Score (new)	-	-	-	610	640	630	620	-	-	-	-
Mean SAT Reading Score (new)	-	-	-	600	620	620	610	-	-	-	-
Mean SBAC Math Scale Score	-	2709	2765	2703	2720	2714	2714	-	-	2679	2680
Mean SBAC ELA Scale Score	-	2705	2740	2710	2723	2715	2712	-	-	2701	2701
N	44,990	47,503	14,487	40,253	34,841	52,534	58,626	73,447	75,225	74,849	79,932

Note: This table does not have rows for the % of STEM Majors, SBAC scores for STEM majors, mean first year GPA, or persistence to the second year, as in Table A3, as students need to enroll at a UC for these factors to be observed.

Table A3: Summary Statistics, students who enrolled at the UCs

	Entering Fall										
	2015	2016	2017a	2017b	2018	2019	2020	2021	2022	2023	2024
SED											
No (%)	55.5	53.1	77.0	47.1	52.5	54.2	55.2	58.1	57.6	57.1	55.2
Yes (%)	44.5	46.9	23.0	52.9	47.5	45.8	44.8	41.9	42.4	42.9	44.8
STEM Major (%)	50.3	48.9	55.0	50.3	54.6	54.8	54.4	54.1	53.9	54.7	57.0
Mean unweighted HS GPA	3.7	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.8	3.8	3.8
Mean weighted HS GPA	4.0	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.0
Mean SAT Math Score (old)	610	600	660	-	-	-	-	-	-	-	-
Mean SAT Reading Score (old)	590	580	620	-	-	-	-	-	-	-	-
Mean SAT Math Score (new)	-	-	-	620	650	650	640	-	-	-	-
Mean SAT Reading Score (new)	-	-	-	610	630	630	630	-	-	-	-

Note: continued next page.

Table 3 (cont.): Summary Statistics, students who enrolled at the UCs

	Entering Fall										
	2015	2016	2017a	2017b	2018	2019	2020	2021	2022	2023	2024
Mean SBAC Math Scale Score	-	2715	2768	2711	2731	2727	2733	-	-	2699	2706
Mean SBAC ELA Scale Score	-	2710	2743	2716	2730	2724	2725	-	-	2715	2719
Mean SBAC Math Scale Score (STEM majors)	-	2732	2781	2727	2746	2744	2750	-	-	2716	2722
Mean SBAC ELA Scale Score (STEM majors)	-	2715	2747	2722	2736	2730	2731	-	-	2721	2725
Mean first year GPA	3.0	3.0	3.3	3.0	3.1	3.3	3.3	3.2	3.3	3.3	3.3
Persistence to the 2nd year (%)	93.7	92.9	96.0	91.3	93	93.8	92.2	92.2	93.4	93.3	93.9
N	25,846	27,937	8,539	22,851	19,565	28,276	29,800	35,739	36,116	36,066	36,419

Table A4: Predicting first year college GPA (all students)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.51 [.38]	.54 [.46]		.60 [.50]		
2016	.50 [.39]	.54 [.47]	.51 [.43]	.60 [.52]	.58 [.48]	.61 [.52]
2017a	.52 [.41]	.50 [.41]	.48 [.39]	.58 [.49]	.57 [.47]	.59 [.50]
2017b	.48 [.36]	.52 [.44]	.48 [.39]	.57 [.48]	.54 [.44]	.57 [.48]
2018	.53 [.38]	.58 [.48]	.53 [.43]	.63 [.52]	.60 [.48]	.63 [.52]
2019	.52 [.38]	.57 [.48]	.52 [.42]	.62 [.52]	.59 [.47]	.62 [.52]
2020	.49 [.37]	.51 [.42]	.44 [.35]	.57 [.47]	.53 [.42]	.57 [.47]
2021	.60 [.45]					
2022	.62 [.45]					
2023	.57 [.43]		.55 [.47]		.64 [.53]	
2024	.58 [.43]		.53 [.45]		.63 [.51]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A5: Predicting first year college GPA, SED status included (all students)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.55 [.44]	.55 [.46]		.61 [.51]		
2016	.54 [.45]	.55 [.48]	.53 [.45]	.61 [.52]	.59 [.50]	.61 [.53]
2017a	.53 [.43]	.50 [.41]	.49 [.40]	.59 [.50]	.57 [.48]	.59 [.50]
2017b	.51 [.41]	.52 [.44]	.49 [.41]	.58 [.49]	.56 [.46]	.58 [.49]
2018	.56 [.44]	.58 [.48]	.55 [.45]	.63 [.53]	.61 [.50]	.63 [.53]
2019	.56 [.43]	.57 [.48]	.53 [.44]	.63 [.52]	.60 [.49]	.63 [.52]
2020	.53 [.43]	.51 [.43]	.47 [.38]	.57 [.48]	.55 [.45]	.57 [.48]
2021	.63 [.50]					
2022	.65 [.50]					
2023	.60 [.48]		.57 [.50]		.65 [.55]	
2024	.61 [.49]		.56 [.47]		.64 [.53]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A6: Predicting persistence to the 2nd year, SED status not included (all students)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.20 [.14]	.17 [.13]		.21 [.16]		
2016	.20 [.15]	.20 [.16]	.20 [.16]	.23 [.18]	.23 [.18]	.23 [.19]
2017a	.17 [.13]	.14 [.10]	.14 [.11]	.18 [.14]	.18 [.14]	.18 [.14]
2017b	.21 [.15]	.20 [.15]	.20 [.15]	.23 [.18]	.23 [.18]	.23 [.18]
2018	.23 [.16]	.22 [.16]	.22 [.16]	.26 [.19]	.25 [.19]	.26 [.19]
2019	.19 [.13]	.19 [.14]	.18 [.13]	.21 [.16]	.21 [.15]	.21 [.16]
2020	.23 [.17]	.25 [.20]	.22 [.17]	.27 [.22]	.25 [.20]	.27 [.22]
2021	.28 [.19]					
2022	.27 [.18]					
2023	.27 [.19]		.23 [.17]		.29 [.21]	
2024	.24 [.17]		.21 [.16]		.26 [.19]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A7: Predicting persistence to the 2nd year, SED status included (all students)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.20 [.15]	.17 [.13]		.21 [.16]		
2016	.20 [.16]	.20 [.16]	.20 [.16]	.23 [.18]	.23 [.18]	.23 [.19]
2017a	.17 [.13]	.14 [.10]	.14 [.11]	.18 [.14]	.18 [.14]	.18 [.14]
2017b	.21 [.16]	.20 [.15]	.20 [.15]	.23 [.18]	.23 [.18]	.23 [.18]
2018	.24 [.17]	.22 [.16]	.22 [.16]	.26 [.19]	.25 [.19]	.26 [.19]
2019	.19 [.14]	.19 [.14]	.18 [.13]	.21 [.16]	.21 [.15]	.22 [.16]
2020	.25 [.19]	.25 [.20]	.23 [.18]	.27 [.22]	.26 [.21]	.27 [.22]
2021	.28 [.20]					
2022	.28 [.19]					
2023	.28 [.20]		.23 [.18]		.29 [.21]	
2024	.25 [.17]		.22 [.16]		.26 [.19]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A8: Predicting first year college GPA, SED status not included (STEM majors)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.56 [.39]	.59 [.48]		.66 [.54]		
2016	.56 [.42]	.58 [.49]	.56 [.46]	.65 [.55]	.64 [.53]	.66 [.55]
2017a	.56 [.43]	.55 [.45]	.54 [.43]	.64 [.53]	.62 [.51]	.65 [.54]
2017b	.53 [.40]	.57 [.48]	.54 [.46]	.63 [.53]	.61 [.51]	.63 [.54]
2018	.58 [.40]	.63 [.52]	.59 [.47]	.69 [.56]	.66 [.52]	.69 [.56]
2019	.55 [.39]	.62 [.52]	.56 [.45]	.67 [.56]	.63 [.50]	.67 [.56]
2020	.54 [.40]	.56 [.47]	.49 [.39]	.63 [.52]	.59 [.46]	.63 [.52]
2021	.64 [.48]					
2022	.64 [.45]					
2023	.59 [.45]		.60 [.53]		.68 [.58]	
2024	.60 [.46]		.59 [.51]		.68 [.56]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A9: Predicting first year college GPA, SED status included (STEM majors)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.60 [.45]	.59 [.49]		.66 [.54]		
2016	.59 [.47]	.58 [.49]	.57 [.48]	.66 [.55]	.65 [.54]	.66 [.56]
2017a	.58 [.44]	.55 [.45]	.54 [.44]	.64 [.53]	.63 [.51]	.65 [.54]
2017b	.56 [.44]	.57 [.49]	.55 [.47]	.63 [.53]	.62 [.52]	.64 [.54]
2018	.61 [.45]	.63 [.52]	.60 [.49]	.69 [.56]	.67 [.54]	.69 [.57]
2019	.59 [.44]	.62 [.52]	.58 [.47]	.67 [.56]	.64 [.52]	.67 [.56]
2020	.58 [.45]	.56 [.47]	.51 [.42]	.63 [.52]	.60 [.48]	.63 [.52]
2021	.67 [.52]					
2022	.66 [.50]					
2023	.62 [.50]		.61 [.55]		.69 [.59]	
2024	.63 [.51]		.60 [.53]		.68 [.58]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A10: Predicting persistence to the 2nd year, SED status not included (STEM majors)

	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.23 [.15]	.21 [.15]		.25 [.18]		
2016	.23 [.16]	.22 [.17]	.22 [.17]	.26 [.20]	.25 [.19]	.26 [.20]
2017a	.21 [.15]	.17 [.12]	.20 [.15]	.22 [.16]	.23 [.17]	.23 [.17]
2017b	.22 [.16]	.22 [.17]	.22 [.17]	.25 [.19]	.25 [.19]	.25 [.20]
2018	.25 [.16]	.26 [.19]	.25 [.18]	.29 [.21]	.28 [.20]	.29 [.21]
2019	.19 [.13]	.21 [.16]	.19 [.14]	.23 [.17]	.21 [.15]	.23 [.17]
2020	.26 [.18]	.27 [.21]	.24 [.18]	.30 [.23]	.28 [.21]	.30 [.23]
2021	.29 [.19]					
2022	.29 [.18]					
2023	.27 [.18]		.25 [.20]		.29 [.22]	
2024	.25 [.17]		.23 [.18]		.27 [.21]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Table A11: Predicting persistence to the 2nd year, SED status included (STEM majors)

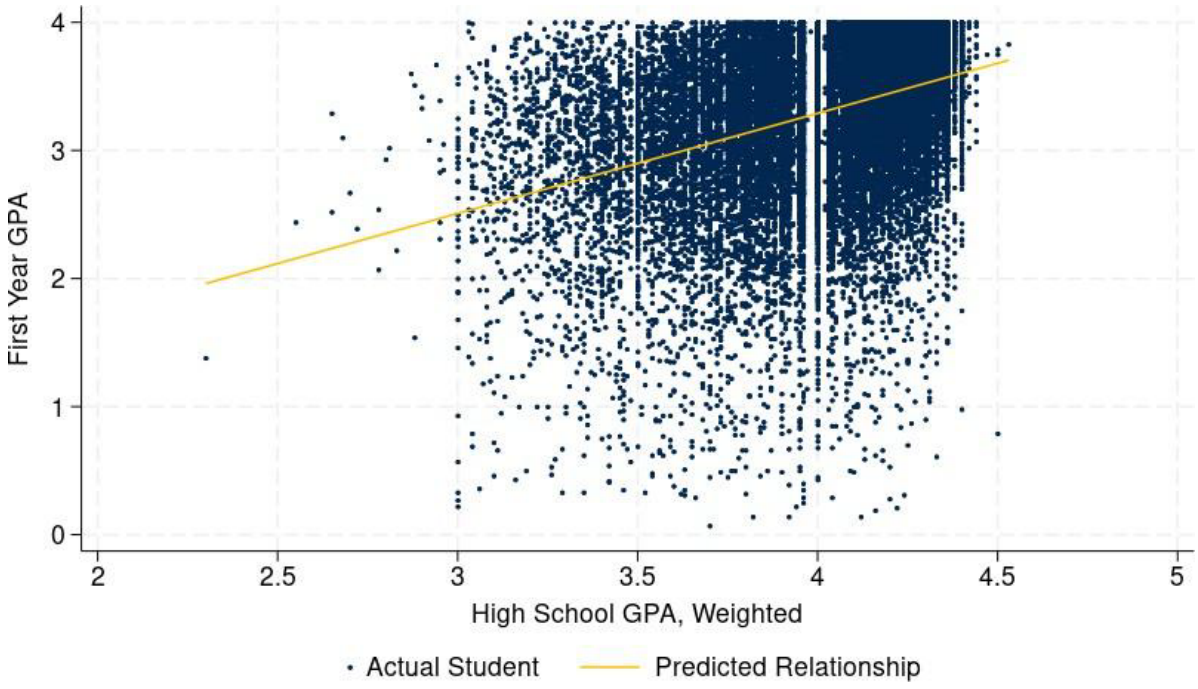
	HSGPA	SAT	SBAC	HSGPA & SAT	HSGPA & SBAC	HSGPA & SAT & SBAC
2015	.24 [.16]	.21 [.15]		.25 [.18]		
2016	.23 [.17]	.22 [.17]	.22 [.17]	.26 [.20]	.26 [.20]	.26 [.20]
2017a	.21 [.15]	.18 [.12]	.20 [.15]	.22 [.16]	.23 [.17]	.23 [.17]
2017b	.23 [.17]	.22 [.17]	.22 [.17]	.25 [.19]	.25 [.19]	.25 [.20]
2018	.26 [.17]	.26 [.19]	.25 [.18]	.29 [.21]	.29 [.20]	.29 [.21]
2019	.20 [.13]	.21 [.16]	.19 [.14]	.23 [.17]	.21 [.16]	.23 [.17]
2020	.27 [.20]	.27 [.21]	.25 [.19]	.30 [.23]	.28 [.22]	.30 [.23]
2021	.30 [.21]					
2022	.29 [.19]					
2023	.28 [.20]		.25 [.20]		.30 [.22]	
2024	.25 [.18]		.23 [.18]		.27 [.21]	

Note: The first number in each cell represents the correlation between the predicted values of a model and the actual values of the model adjusted with the restriction of range correction. The second number in brackets is without the restriction of range correction. The high school GPA used is the weighted high school GPA. The SAT Scores used in 2015, 2016, and 2017[a] are from before the SAT redesign with both math and reading scores included in our models. The scores used in 2017[b], 2018, 2019, and 2020 are from the redesigned SAT with both math and reading/writing scores included in our models.

Scatterplots

Figures A1 - A3 give a visual sense of how well each of the main predictor variables in this study explain first year college GPA for students enrolling in a UC in the fall of 2019 (the year before the pandemic). The yellow line in Figure A1 describes the average relationship between high school GPA and first year college GPA. Each blue dot on the graph represents an individual student's actual high school GPA and college GPA. As observed, on average, higher high school GPAs are associated with higher college GPAs. For example, 70% of students entering the UCs in the fall of 2019 with a high school GPA of at least a 4.0, the average weighted high school GPA for that year, exit their first year of college with the average first year GPA (3.3) or higher. At the same time, these averages mask the wide distribution of first year college GPA for any given high school GPA. These same students graduating from high school with at least a 4.0, have first year college GPAs that range from 0.1 to 4.0.

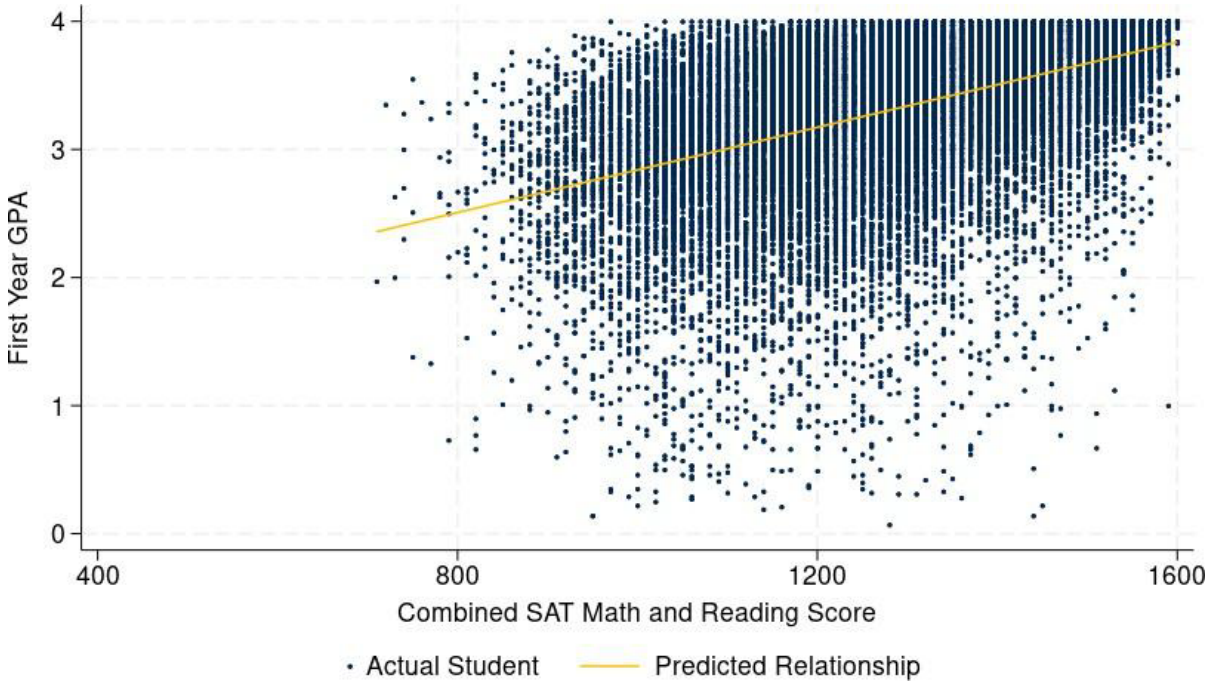
Figure A1: Weighted High School GPA vs First Year College GPA



Note: the sample includes first time freshman from California public high schools who enrolled at a UC in the fall of 2019. The R^2 of the linear prediction is .14.

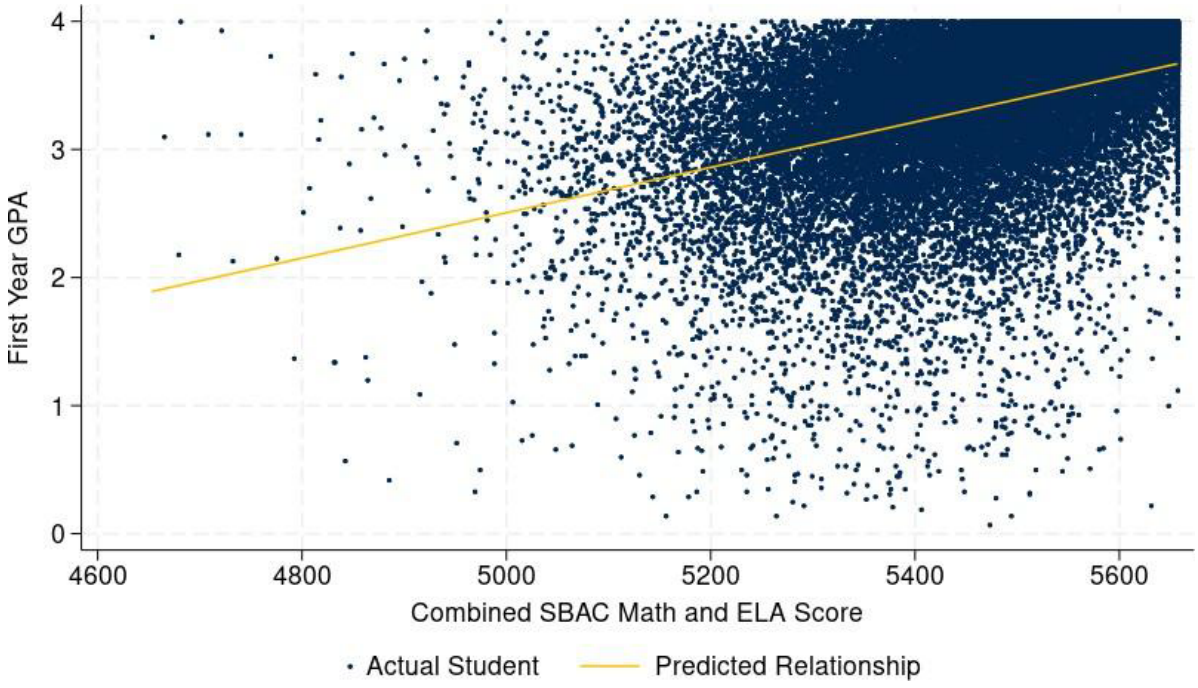
Figures A2 and A3 are similar, representing SAT scores and SBAC scores respectively. For visual simplicity, we add math and reading SAT scores to create a total SAT score for each student. We also add math and ELA SBAC scores to create a total SBAC score. In all three graphs we can see that the higher a student's GPA or test scores, the higher we would expect their first-year GPA. At the same time, these graphs also show the wide variability of outcomes for any given high school GPA or test score. Students with scores at or above the mean SAT score (1280) or SBAC score (5452) have first year college GPAs that range from .07 to 4.0 in both cases.

Figure A2: Combined SAT Math and Reading Scores vs First Year College GPA



Note: the sample includes first time freshman from California public high schools who enrolled at a UC in the fall of 2019. The R^2 of the linear prediction is .23.

Figure A3: Combined SBAC Math and ELA Score vs First Year College GPA



Note: the sample includes first time freshman from California public high schools who enrolled at a UC in the fall of 2019. The R^2 of the linear prediction is .17.