

Prediction of College GPA from New SAT Test Scores – A First Look
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Sam Agronow, Coordinator
Roger Studley, Assistant Director
Admissions Research and Evaluation
University of California, Office of the President

ABSTRACT

Beginning in 2006 The College Board replaced its venerable SAT I Verbal and SAT I Math exams with a new SAT revamped to include assessments of Critical Reading, Math, and Writing. The new tests are presumably more achievement and performance oriented and, as a consequence, perhaps more predictive of college performance than the tests they replaced. Using the data from the entering freshman class of fall term 2006, the first entering freshman class to take the new SAT scores and complete one year in college, this paper, via linear multiple regression, examines the amount of variance in college GPA explained by the new SAT scores after controlling for a variety of other high school academic and demographic measures. In addition, the amount of variance explained by the new SAT exam scores is compared with the amount explained by the old SAT scores in the 2004 freshman cohort. The results of these analyses show that the new SAT Reasoning tests in 2006 (Critical Reading, Math, and Writing) appear to be a little more effective in the prediction of UC GPA than the corresponding older combination of SAT I Math, Verbal and SAT II Writing. The SAT Subject tests in 2006 were not necessarily more useful in the prediction of UC GPA than their corresponding SAT II subject exams were in 2004, with the exception of the SAT Math subject test for Engineering students.

PURPOSE

The College Board, under considerable pressure from key clients, including the University of California (UC), recently replaced its SAT I Verbal and SAT I Math scores with a new set of tests. The older tests, while not measuring “aptitude” per say were criticized for not assessing the skills that are taught in high school. The new SAT exams, introduced in 2006, assess Critical Reading skills, achievements in Mathematics, and Writing performance. The focus on achievement and performance embodied in the new exams lead many to hypothesize that the new measures will be more effective at predicting college performance compared with the older tests. Others, however, are concerned that aside from adopting the SAT Writing assessment (previously part of the SAT II), the changes made to the other SAT exams are minimal and will not lead to much greater prediction of college performance.

The recent completion of one year in college by the first entering freshman class (fall 2006) to take the new exams, allow us to examine the relative amount of variance explained by the new SATs in predicting college GPA compared to the old SATs, controlling for a wide variety of high school academic and demographic measures.

Geiser and Studley (2002), in a ground breaking study, examined the relative contributions of the SAT I, SAT II, and High School GPA in predicting UC College GPA. However, the data set for 2006 matriculants with 2007 UC GPA outcomes employed in this study became available to the authors just before the completion of this paper. Consequently, unlike Geiser and Studley, this is a “*first look*” at the relationships among these variables and not a comprehensive one.¹

¹ Note, for example, that at time this paper was prepared the 2006 data set did not allow for the proper identification of individual SAT Subject tests, other than those taken in Mathematics.

METHOD

A cohort of 33,356 freshmen completing the new SAT scores and entering college in fall 2006 was studied. UC GPA after one year, at the end-of-term in Spring 2007, was used as an outcome measure. Using linear multiple regression, the amount of variance in college GPA contributed to the SAT scores was examined after controlling for high school GPA, number of courses taken in high school in A-G subject areas, number of honors or AP courses taken in high school, Eligible in Local Context status (ELC), measures of socio-economic status (e.g., parent education, parent income), English or another first language spoken at home, gender, ethnicity, academic performance index (API) of high school, and participation in academic preparation (outreach programs) in high school.

The regression analyses for 2006 are compared with similar analyses for the 28,500 freshmen entering college in fall 2004, and who took the old SAT exams, in prediction of the UC GPA at end-of-term in Spring 2005. The relative contributions of the old vs. the new SAT scores to the prediction of college GPA are examined. Of particular interest is the comparison of the combination of old SAT I Verbal with the new SAT Critical Reading test and the old SAT I Math with the new SAT Math test. A comparison of the new SAT Writing exam with the old SAT II Writing test is also of interest. Other variables introduced into the regression analyses, High School GPA, and a wide variety of other high school performance and demographic variables, are important for evaluating whether the predictive effects of the various SATs are enhanced or are muted by the introduction of these additional controls.

Models/Analyses:

Linear multiple regression was employed to predict the first-year UC GPA. The predictor variables described above are identified as follows:

1. Weighted, Capped High School GPA
2. In 2004, SAT I Verbal. – In 2006, SAT Reasoning – Critical Reading
3. In 2004, SAT I Math – In 2006, SAT Reasoning – Math
4. In 2004, SAT II Writing – In 2006, SAT Reasoning – Writing
5. In 2004, SAT II Math – In 2006, SAT Subject Exam – Highest Score #1 (paired with SAT Math Subject exam in select analyses)
6. In 2004, SAT II Highest Third Test. - In 2006, SAT Subject Exam – Highest Score #2
7. Number of semesters of A-G courses, reported individually, plus total semesters of honors courses taken, and ELC status.
8. Parent Income, Parent Education, First Language Spoken, and missing variable indicators, Academic Performance Index (API), missing API variable, Gender (being Female) and Ethnic Group (8-groups, including foreign, with “White” as a reference group).

The regression Models tested combine the variables or sets of variables numbered above in order to evaluate the specific contributions, as follows:

Model 1: **1** (i.e., Weighted, capped high school GPA only)

Model 2: **2 + 3** (i.e., In 2004, SAT I Verbal, Math. In 2006, SAT Critical Reading, Math)

Model 3: **4** (i.e., In 2004, SAT II Writing. In 2006, SAT Writing)

Model 4: **2 + 3 + 4**

*Model 5: **4 + 5** (i.e., In 2004, SAT II Writing, Math. In 2006, SAT Writing, SAT Math Subject)

*Model 6: **4 + 5 + 6** (i.e., In 2004, SAT II Writing, Math, Third Score. In 2006, SAT Writing, SAT Math Subject Score, SAT Other Subject Score)

Model 7: **2+ 3 + 4 + 5 + 6**

Model 8: **7** (i.e., number of A-G Courses, reported individually, Honors Courses, ELC)

Model 9: **8** (i.e., Parent Income, Parent Education, First Language, API, Gender, Ethnic Group)

Model 10: **7+ 8**

Model 11: **1 + 2 + 3**

Model 12: **1 + 4**

Model 13: **1 + 2 + 3 + 4**

*Model 14: **1 + 2 + 4 + 5**

*Model 15: **1 + 2 + 3 + 4 + 5**

Model 16: **1 + 2 + 3 + 4 + 5 + 6**

Model 17: **1 + 7+ 8**

Model 18: **1 + 2 + 3 + 7+ 8**

Model 19: **1 + 4 + 7+ 8**

Model 20: **1 + 2 + 3 + 4 + 7+ 8**

*Model 21: **1 + 2 + 3 + 4 + 5 + 7+ 8**

Model 22: **1 + 2 + 3 + 4 + 5 + 6 + 7+ 8**

Note that in some models in 2006 designated with a *, variables 5 and 6 reflect the SAT subject exam in math plus another exam, 62% of matriculants took the SAT subject exam in math.

These models are compared in two sets of regressions for ALL matriculants who had a GPA after one year of UC enrollment, and for those in enrolled in Engineering. Engineering students, unlike

most other UC freshmen, take courses in that major in their first year. Moreover, it is expected that the relative weight of the SAT exams in the prediction of first year GPA will be different for Engineers compared with the general freshmen pool.

RESULTS

The detailed tables that follow this narrative show the results of these regression analyses, first for the UC system (Tables 1 and 3) and then for Engineers (Tables 5 and 7) systemwide.² Tables of simple Pearson Correlations also are also provided for each set of analyses (see Tables 2, 4, 6 and 8). The multiple-R-squares shown in the top rows of each regression table allow the comparison of the twenty-two Models in terms of the amount of variance explained in UC GPA.

Comparison of 2004 vs. 2006 prediction:

Notable in the regression tables is that all of the predictor variable groups (SAT scores, High School GPAs, classes taken, API, and demographics) add *more* variance to the prediction of college GPA in 2006 than they did in 2004. Thus, in order to examine the relative importance of various variables it is necessary to examine the gains in variance explained among the Models, using adjusted R-squares. Figure 1 summarizes the variance gained for the different Models.

Figure 1: Comparison of Variance Explained in Models (ALL STUDENTS)

Model	HS GPA	SAT & SAT Subject Tests					A-G, Hon, ELC	Demog, API	Adjusted R-Square		
		V/CR	M	W	S1/M	S2			2004	2006	2006 – 2004
	1	2	3	4	5	6	7	8	2004	2006	2006 – 2004
1	x								0.182	0.196	0.014
2		x	x						0.154	0.178	0.024
3				x					0.158	0.183	0.025
4		x	x	x					0.172	0.200	0.028
5				x	x				0.169	0.196	0.027
6				x	x	x			0.172	0.198	0.026
7		x	x	x	x	x			0.177	0.209	0.032
8							x		0.073	0.088	0.015
9								x	0.098	0.113	0.015
10							x	x	0.169	0.191	0.022
11	x	x	x						0.249	0.270	0.021
12	x			x					0.250	0.274	0.024
13	x	x	x	x					0.258	0.282	0.024
14	x	x		x	x				0.258	0.283	0.025
15	x	x	x	x	x				0.258	0.283	0.025
16	x	x	x	x	x	x			0.259	0.284	0.025
17	x						x	x	0.254	0.275	0.021
18	x	x	x				x	x	0.279	0.303	0.024
19	x			x			x	x	0.277	0.303	0.026
20	x	x	x	x			x	x	0.283	0.308	0.025
21	x	x	x	x	x		x	x	0.283	0.309	0.026
22	x	x	x	x	x	x	x	x	0.286	0.314	0.028

² The specific regression models for individual UC campuses are not available at the time of this writing. However, some related regression models by UC campus using 2006 data have been prepared for release in another venue. Please contact the authors (samuel.agronow@ucop.edu or roger.studley@ucop.edu) for additional information.

By comparing the differences between the Models in adjusted R-square we are able to examine whether High School GPA and the new SAT exams lend the same, more or less to the prediction of UC GPA in 2006 as they did in 2004 (see Figure 2):

Figure 2: DIFFERNCE in Adjusted R-Squares BETWEEN Models (ALL STUDENTS)

High School GPA

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
11 - 2	0.095	0.092	-0.003
13 - 4	0.086	0.082	-0.004
16 - 7	0.082	0.075	-0.007
17 - 10	0.085	0.084	-0.001

SAT I Verbal +Math (2004) vs. SAT Critical Reading + Math (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
4 - 3	0.014	0.017	0.003
7 - 6	0.005	0.011	0.006
11 - 1	0.067	0.074	0.007
13 - 12	0.008	0.008	0.000
18 - 17	0.025	0.028	0.003

SAT II Writing (2004) vs. SAT Reasoning Writing (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
4 - 2	0.018	0.022	0.004
13 - 11	0.009	0.012	0.003
19 - 17	0.023	0.028	0.005
20 - 18	0.004	0.005	0.001

SAT Verbal + Math + SAT II Writing (2004) vs. SAT Critical Reading +Math +Writing (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
13 - 1	0.076	0.086	0.010
20 - 17	0.029	0.033	0.004

SAT II Math (2004) vs. SAT Math Subject Test (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
5 - 3	0.011	0.013	0.002
15 -13	0.000	0.001	0.001
21 - 20	0.000	0.001	0.001

SAT II Math + Other Subject Test (2004) vs. Two SAT Subject Tests (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
7 - 4	0.005	0.009	0.004
16 -13	0.001	0.002	0.001
22 - 20	0.003	0.006	0.003

Figure 3: Comparison of Variance Explained in ENGINEERING Models

Model	HS GPA	SAT & SAT Subject Tests					A-G, Hon, ELC	Demog, API	Adjusted R-Square		
		V/CR	M	W	S1/M	S2			2004	2006	2006 - 2004
	1	2	3	4	5	6	7	8			
1	x								0.182	0.188	0.006
2		x	x						0.154	0.185	0.031
3				x					0.158	0.154	-0.004
4		x	x	x					0.172	0.194	0.022
5				x	x				0.169	0.210	0.041
6				x	x	x			0.172	0.216	0.044
7		x	x	x	x	x			0.177	0.219	0.042
8							x		0.073	0.107	0.034
9								x	0.098	0.102	0.004
10							x	x	0.169	0.185	0.016
11	x	x	x						0.249	0.268	0.019
12	x			x					0.250	0.245	-0.005
13	x	x	x	x					0.258	0.271	0.013
14	x	x		x	x				0.258	0.284	0.026
15	x	x	x	x	x				0.258	0.284	0.026
16	x	x	x	x	x	x			0.259	0.284	0.025
17	x						x	x	0.254	0.263	0.009
18	x	x	x				x	x	0.279	0.285	0.006
19	x			x			x	x	0.277	0.276	-0.001
20	x	x	x	x			x	x	0.283	0.287	0.004
21	x	x	x	x	x		x	x	0.283	0.297	0.014
22	x	x	x	x	x	x	x	x	0.286	0.299	0.013

Figure 4 provides the same information related to evaluating the contributions of the SAT and High School GPA variables for ENGINEERING students:

Figure 4: DIFFERENCE in Adjusted R-Squares BETWEEN ENGINEERING Models

High School GPA

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
11 - 2	0.095	0.083	-0.012
13 - 4	0.086	0.077	-0.009
16 - 7	0.082	0.065	-0.017
17 - 10	0.085	0.078	-0.007

SAT I Verbal +Math (2004) vs. SAT Critical Reading + Math (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
4 - 3	0.014	0.040	0.026
7 - 6	0.005	0.003	-0.002
11 - 1	0.067	0.080	0.013
13 - 12	0.008	0.026	0.018
18 - 17	0.025	0.022	-0.003

SAT II Writing (2004) vs. SAT Reasoning Writing (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
4 - 2	0.018	0.009	-0.009
13 - 11	0.009	0.003	-0.006
19 - 17	0.023	0.013	-0.010
20 - 18	0.004	0.002	-0.002

SAT Verbal + Math + SAT II Writing (2004) vs. SAT Critical Reading +Math +Writing (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
13 - 1	0.076	0.083	0.007
20 - 17	0.029	0.024	-0.005

SAT II Math (2004) vs. SAT Math Subject Test (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
5 - 3	0.011	0.056	0.045
15 -13	0.000	0.013	0.013
21 - 20	0.000	0.010	0.010

SAT II Math + Other Subject Test (2004) vs. Two SAT Subject Tests (2006)

Models Compared	GAIN in Adjusted R-Square		
	2004	2006	2006 - 2004
7 - 4	0.005	0.025	0.020
16 -13	0.001	0.013	0.012
22 - 20	0.003	0.012	0.009

EVALUATION OF RESULTS

In reviewing the results presented in Figures 1 – 4 the following is observed:

- 1) In one-to-one comparisons, each predictor variable set in 2006 accounted for more variance in UC GPA than in 2004.
- 2) Relative to the other variables in the models, High School GPA accounts for less variance in the prediction of UC GPA in 2006 than it did in 2004. Also of note, in 2004 High School GPA (.182) compared with the SAT I Math + Verbal +SAT II Writing (.172) accounted for more variance in UC GPA. In contrast, in 2006 the combination of SAT Critical Reading + Math + Writing explained a little *more* variance (.200) in UC GPA than High School GPA (.196). This difference was even larger for Engineering students in 2006.
- 3) SAT Critical Reading + Math accounted for more variance in most models in 2006 than in the SAT I Verbal + Math did in 2004.
- 4) SAT Reasoning Writing accounted for more variance in most models in 2006 than in the SAT II Writing did in 2004 for all students, but not for Engineering students.
- 5) The combination of SAT Critical Reading + Math + Writing in 2006 contributed more than SAT Verbal + Math + SAT II Writing did to the prediction of UC GPA in 2004.
- 6) For Engineering students, the SAT Math Subject test in 2006 accounted for more variance in UC GPA than the SAT II Math test did in 2004. There was, however, little difference in this comparison for ALL students.

- 7) For Engineering students, the SAT Subject tests in 2006 accounted for more variance in UC GPA than the SAT II Subject tests did in 2004. Again, there was little difference in this comparison for ALL students.

Overall, the new SAT Reasoning tests in 2006 (Critical Reading, Math, and Writing) appear to be a little more effective in the prediction of UC GPA than the corresponding older combination of SAT I Math, Verbal and SAT II Writing. The SAT Subject tests in 2006 were not necessarily more useful in the prediction than in 2004, with the exception of the SAT Math subject test for Engineering students. This is our “first look”, additional work on the 2006 and 2004 data files may lead to more nuanced findings.

REFERENCE

Geiser, S. and Studley, R. UC and the SAT: Predictive validity and differential impact of the SAT I and SAT II at the University of California, *Educational Assessment*, 8(1), 1- 26.

University of California, Office of the President
A Comparison of SAT I and SAT II in Prediction of UC GPA after One Year of Matriculation
TABLE 1.

28,500 matriculants
Outcome: UC GPA After 1 Year Mean= 2.96

UC Systemwide: No exclusions
2004 Fall Freshman Entrants

		<u>Model 1</u>			<u>Model 2</u>			<u>Model 3</u>			<u>Model 4</u>			<u>Model 5</u>			<u>Model 6</u>			<u>Model 7</u>			<u>Model 8</u>			<u>Model 9</u>			<u>Model 10</u>			<u>Model 11</u>								
R-Square		0.182			0.154			0.158			0.172			0.169			0.172			0.177			0.074			0.099			0.169			0.249								
Adjusted R-Square		0.182			0.154			0.158			0.172			0.169			0.172			0.177			0.073			0.098			0.169			0.249								
Variables		B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p			
Intercept		.2212		.000	1.2205		.000	1.4539		.000	1.1525		.000	1.228		.000	1.1348		.000	1.0733		.000	2.7424		.000	1.9804		.000	1.6810		.000			.3488			.000			
Weighted, Capped High School GPA		.7225	.427	.000																																				
SAT	SAT I Verbal				.0009	.126	.000				.0006	.087	.000																						.5624	.332	.000			
	SAT I Math				.0020	.306	.000				.0009	.136	.000										.0009	.128	.000										.0016	.241	.000			
	SAT II Writing							.0025	.398	.000	.0015	.238	.000				.002	.326	.000	.0020	.311	.000	.0014	.221	.000															
	SAT II Math													.001	.126	.000	.0007	.107	.000	.0006	.101	.000																		
	SAT II Highest Subject Score																.0004	.062	.000	.0003	.052	.000																		
Course	History/Social Science																																							
	English																																							
	Mathematics																																							
	Lab Science																																							
	Language other than English																																							
	Visual and Performing Arts																																							
	College Preparatory Elective																																							
	Total Semesters of Honors Courses																																							
Is ELC? (1=Yes, 0=No)																																								
Demographic	Parent Income (with mean subs)																									.0000	.019	.002	.0000	.017	.005									
	Missing Parent Income? (1=Yes, 0=No)																									.0405	.028	.000	.0362	.025	.000									
	Highest Years of Parent Ed (with mean sub)																									.0270	.140	.000	.0199	.103	.000									
	Missing Parent Education? (1=Yes, 0=No)																									.0368	.012	.046	.0277	.009	.119									
	First Language Spoken (1=English, 3=Other)																									.0152	.019	.007	.0077	.009	.159									
	Number of Acad Prep Programs																									.0082	.011	.123	-.0023	-.003	.653									
	In Federal TRIO Program? (1=Yes, 0=No)																									-.0170	-.004	.480	.0156	.004	.500									
In UC Sponsored Acad Prep.? (1=Yes, 0=No)																									-.0413	-.020	.005	-.0677	-.033	.000										
API	API (2003)-with replacement																									.0007	.106	.000	.0012	.163	.000									
	Missing API? (1=Yes, 0=No)																									-.0362	-.023	.000	-.0144	-.009	.107									
Ethnicity	Female? (1=Yes, 0=No)																									.1367	.108	.000	.1174	.092	.000									
	American Indian/Alaskan? (1=Yes, 0=No)																									-.1762	-.019	.001	-.1604	-.018	.001									
	African American? (1=Yes, 0=No)																									-.2816	-.073	.000	-.2117	-.055	.000									
	Chicano/Latino? (1=Yes, 0=No)																									-.2322	-.129	.000	-.2123	-.118	.000									
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)																									-.1609	-.124	.000	-.1727	-.134	.000									
	Other Ethnic? (1=Yes, 0=No)																									-.1159	-.024	.000	-.1140	-.023	.000									
	Unknown/Decline to State? (1=Yes, 0=No)																									-.0274	-.011	.075	-.0448	-.018	.003									
Foreign Visa? (1=Yes, 0=No)																									-.0618	-.010	.078	-.0174	-.003	.608										

* White is Reference Group for Ethnicity

University of California, Office of the President
A Comparison of SAT I and SAT II in Prediction of UC GPA after One Year of Matriculation
TABLE 1.

28,500 matriculants

Outcome: UC GPA After 1 Year

Mean= 2.96

UC Systemwide: No exclusions

2004 Fall Freshman Entrants

	<u>Model 12</u>	<u>Model 13</u>	<u>Model 14</u>	<u>Model 15</u>	<u>Model 16</u>	<u>Model 17</u>	<u>Model 18</u>	<u>Model 19</u>	<u>Model 20</u>	<u>Model 21</u>	<u>Model 22</u>	
R-Square	0.251	0.258	0.258	0.258	0.259	0.255	0.280	0.278	0.284	0.284	0.287	
Adjusted R-Square	0.250	0.258	0.258	0.258	0.259	0.254	0.279	0.277	0.283	0.283	0.286	
Variables	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p
Intercept	-.1887		.000	-.3240		.000	-.3088		.000	-.3175		.000
Weighted, Capped High School GPA	.5511	.326	.000	.5371	.317	.000	.5337	.316	.000	.5341	.316	.000
SAT	SAT I Verbal			.0009	.129	.000	.0009	.131	.000	.0009	.129	.000
	SAT I Math			.0002	.031	.000	.0001	.013	.222	.0001	.010	.347
	SAT II Writing	.0018	.280	.000	.0010	.161	.000	.0010	.160	.000	.0010	.159
	SAT II Math				.0002	.033	.000	.0001	.022	.036	.0001	.016
	SAT II Highest Subject Score						.0002	.033	.000			
TOU	History/Social Science						.0010	.003	.655	.0014	.003	.543
	English						-.0083	-.013	.018	-.0015	-.002	.667
	Mathematics						-.0011	-.003	.571	-.0008	-.002	.662
	Lab Science						-.0014	-.004	.460	-.0033	-.010	.072
	Language other than English						.0121	.041	.000	.0079	.027	.000
	Visual and Performing Arts						.0041	.023	.000	.0026	.014	.005
	College Preparatory Elective						.0010	.005	.346	.0004	.002	.727
	Total Semesters of Honors Courses						.0010	.011	.074	-.0042	-.049	.000
Is ELC? (1=Yes, 0=No)						.0521	.035	.000	.0365	.024	.000	
Demographic	Parent Income (with mean subs)						.0000	.015	.007	.0000	.009	.112
	Missing Parent Income? (1=Yes, 0=No)						.0359	.025	.000	.0188	.013	.022
	Highest Years of Parent Ed (with mean sub)						.0156	.081	.000	.0080	.041	.000
	Missing Parent Education? (1=Yes, 0=No)						.0210	.007	.211	.0050	.002	.763
	First Language Spoken (1=English, 3=Other)						.0099	.012	.056	.0254	.031	.000
	Number of Acad Prep Programs						-.0061	-.008	.211	.0004	.001	.929
	In Federal TRIO Program? (1=Yes, 0=No)						.0228	.006	.299	.0346	.009	.109
In UC Sponsored Acad Prep.? (1=Yes, 0=No)						-.0563	-.028	.000	-.0433	-.021	.001	
API	API (2003)-with replacement						.0010	.147	.000	.0006	.090	.000
	Missing API? (1=Yes, 0=No)						-.0426	-.027	.000	-.0404	-.026	.000
Ethnicity	Female? (1=Yes, 0=No)						.0670	.053	.000	.0974	.077	.000
	American Indian/Alaskan? (1=Yes, 0=No)						-.1449	-.016	.002	-.1245	-.014	.007
	African American? (1=Yes, 0=No)						-.0884	-.023	.000	-.0309	-.008	.135
	Chicano/Latino? (1=Yes, 0=No)						-.1358	-.075	.000	-.1076	-.060	.000
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)						-.1400	-.108	.000	-.1256	-.097	.000
	Other Ethnic? (1=Yes, 0=No)						-.0657	-.013	.011	-.0346	-.007	.172
	Unknown/Decline to State? (1=Yes, 0=No)						-.0292	-.011	.038	-.0373	-.015	.007
Foreign Visa? (1=Yes, 0=No)						-.0455	-.008	.157	-.0244	-.004	.444	

University of California, Office of the President
A Comparison of SAT Reasoning and SAT Subject Exams in Prediction of UC GPA after One Year of Matriculation

TABLE 3.

33,356 matriculants (except as noted)

Outcome: UC GPA After 1 Year Mean= 2.97

UC Systemwide: No exclusions

2006 Fall Freshman Entrants

		<u>Model 1</u>			<u>Model 2</u>			<u>Model 3</u>			<u>Model 4</u>			<u>Model 5</u>			<u>Model 6</u>			<u>Model 7</u>			<u>Model 8</u>			<u>Model 9</u>			<u>Model 10</u>			<u>Model 11</u>											
R-Square		0.196			0.178			0.183			0.200			0.196			0.198			0.209			0.089			0.113			0.191			0.270											
Adjusted R-Square		0.196			0.178			0.183			0.200			0.196			0.198			0.209			0.088			0.113			0.191			0.270											
	Variables	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p						
		Intercept	.2579		.000	1.2476		.000	1.3519		.000	1.1184		.000	1.0993		.000	1.0399		.000	1.1086		.000	2.4107		.000	2.2048		.000	2.2048		.000	-0.2226		.000								
	Weighted, Capped High School GPA	.7168	.443	.000																															.5365	.331	.000						
SAT	SAT Reasoning Critical Reading				.0020	.326	.000				.0010	.162	.000							.0007	.117	.000													.0016	.256	.000						
	SAT Reasoning Math				.0009	.140	.000				.0005	.083	.000				(Math Subj, n=20,563)			.0000	-.001	.903													.0004	.060	.000						
	SAT Reasoning Writing							.0028	.428	.000	.0016	.249	.000				.0020	.319	.000				.0015	.228	.000																		
	SAT Subject Highest Score 1 (Math as noted)													.0011	.167	.000	.0009	.137	.000				-.0001	-.012	.103																		
	SAT Subject Highest Score 2													(Math Subj, n=20,563)	.0003	.057	.000	.0011	.175	.000																							
Course	History/Social Science																						-.0020	-.006	.283				-.0076	-.022	.000												
	English																						-.0107	-.020	.000				-.0020	-.004	.465												
	Mathematics																						-.0015	-.005	.363				.0003	.001	.854												
	Lab Science																						.0048	.015	.006				-.0016	-.005	.350												
	Language other than English																						.0351	.129	.000				.0137	.050	.000												
	Visual and Performing Arts																						.0125	.077	.000				.0043	.027	.000												
	College Preparatory Elective																						-.0035	-.021	.000				-.0058	-.034	.000												
	Total Semesters of Honors Courses																						.0135	.157	.000				.0137	.160	.000												
	Is ELC? (1=Yes, 0=No)																						.2147	.148	.000				.2783	.192	.000												
Demographic	Parent Income (with mean subs)																									.0000	.035	.000	.0000	.029	.000												
	Missing Parent Income? (1=Yes, 0=No)																									.0749	.049	.000	.0573	.038	.000												
	Highest Years of Parent Ed (with mean sub)																						.0234	.127	.000	.0159	.086	.000															
	Missing Parent Education? (1=Yes, 0=No)																						.0402	.016	.005	.0350	.014	.011															
	First Language Spoken (1=English, 3=Other)																						.0044	.006	.371	-.0027	-.003	.564															
	Number of Acad Prep Programs																						.0179	.019	.004	-.0013	-.001	.827															
Ethnicity	In Federal TRIO Program? (1=Yes, 0=No)																						-.0939	-.025	.000	-.0585	-.016	.003															
	In UC Sponsored Acad Prep.? (1=Yes, 0=No)																						-.0252	-.010	.125	-.0463	-.018	.003															
	API (2005)-with replacement																						.0277	.115	.000	.0404	.168	.000															
	Missing API? (1=Yes, 0=No)																						-.0570	-.038	.000	-.0262	-.018	.001															
	Female? (1=Yes, 0=No)																						.1126	.093	.000	.0959	.079	.000															
	American Indian/Alaskan? (1=Yes, 0=No)																						-.0763	-.009	.085	-.0682	-.008	.107															
	African American? (1=Yes, 0=No)																						-.3249	-.091	.000	-.2555	-.071	.000															
	Chicano/Latino? (1=Yes, 0=No)																						-.2307	-.138	.000	-.2150	-.129	.000															
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)																						-.1560	-.128	.000	-.1689	-.139	.000															
	Other Ethnic? (1=Yes, 0=No)																						-.1710	-.037	.000	-.1541	-.033	.000															
Unknown/Decline to State? (1=Yes, 0=No)																						.0119	.004	.452	-.0122	-.004	.418																
Foreign Visa? (1=Yes, 0=No)																						-.1161	-.023	.000	-.1109	-.022	.000																

* White is Reference Group for Ethnicity

University of California, Office of the President
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TABLE 3.

33,356 matriculants (except as noted)

Outcome: UC GPA After 1 Year Mean= 2.97

UC Systemwide: No exclusions

2006 Fall Freshman Entrants

	<u>Model 12</u>	<u>Model 13</u>	<u>Model 14</u>	<u>Model 15</u>	<u>Model 16</u>	<u>Model 17</u>	<u>Model 18</u>	<u>Model 19</u>	<u>Model 20</u>	<u>Model 21</u>	<u>Model 22</u>		
R-Square	0.274	0.282	0.283	0.283	0.284	0.276	0.304	0.303	0.309	0.310	0.314		
Adjusted R-Square	0.274	0.282	0.283	0.283	0.284	0.275	0.303	0.303	0.308	0.309	0.314		
Variables	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	
Intercept	-.1736		.000	-.2474		.000	-.3402		.000	-.3450		.000	
Weighted, Capped High School GPA	.5286	.327	.000	.5110	.316	.000	.5256	.319	.000	.5258	.319	.000	
SAT	SAT Reasoning Critical Reading			.0009	.139	.000	.0007	.105	.000	.0007	.104	.000	
	SAT Reasoning Math			.0001	.022	.000	.0000	.008	.498	-.0001	-.017	.017	
	SAT Reasoning Writing	.0019	.302	.000	.0012	.183	.000	.0011	.166	.000	.0011	.174	.000
	SAT Subject Highest Score 1 (Math as noted)				.0005	.075	.000	.0004	.070	.000	-.0001	-.018	.011
	SAT Subject Highest Score 2 (Math Subj, n=20,563)										.0006	.097	.000
Course	History/Social Science												
	English												
	Mathematics												
	Lab Science												
	Language other than English												
	Visual and Performing Arts												
	College Preparatory Elective												
	Total Semesters of Honors Courses												
Is ELC? (1=Yes, 0=No)													
Demographic	Parent Income (with mean subs)												
	Missing Parent Income? (1=Yes, 0=No)												
	Highest Years of Parent Ed (with mean sub)												
	Missing Parent Education? (1=Yes, 0=No)												
	First Language Spoken (1=English, 3=Other)												
	Number of Acad Prep Programs												
	In Federal TRIO Program? (1=Yes, 0=No)												
In UC Sponsored Acad Prep.? (1=Yes, 0=No)													
API	API (2005)-with replacement												
	Missing API? (1=Yes, 0=No)												
Ethnicity	Female? (1=Yes, 0=No)												
	American Indian/Alaskan? (1=Yes, 0=No)												
	African American? (1=Yes, 0=No)												
	Chicano/Latino? (1=Yes, 0=No)												
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)												
	Other Ethnic? (1=Yes, 0=No)												
	Unknown/Decline to State? (1=Yes, 0=No)												
Foreign Visa? (1=Yes, 0=No)													

TABLE 5.

3,253 matriculants

Outcome: UC GPA After 1 Year Mean= 2.86

UC Systemwide: ENGINEERING
2004 Fall Freshman Entrants

		<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>	<u>Model 5</u>	<u>Model 6</u>	<u>Model 7</u>	<u>Model 8</u>	<u>Model 9</u>	<u>Model 10</u>	<u>Model 11</u>																										
R-Square		0.193	0.152	0.114	0.161	0.169	0.175	0.178	0.087	0.087	0.168	0.255																										
Adjusted R-Square		0.193	0.152	0.113	0.160	0.169	0.175	0.177	0.084	0.082	0.161	0.255																										
	Variables	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p																
	Intercept	-.3197		.005	.6753		.000	1.4987		.000	.6895		.000	.733		.000	.6094		.000	.5156		.000	2.4013		.000	1.8056		.000	1.2645		.000	-1.1200		.000				
	Weighted, Capped High School GPA	.8215		.440	.000																										.6475		.347		.000			
SAT	SAT I Verbal			.0025	.315	.000				.0022	.278	.000								.0008	.105	.001										.0003	.035	.070				
	SAT I Math			.0008	.110	.000			.0000	.004	.870									.0000	-.005	.862										.0020	.244	.000				
	SAT II Writing					.0023	.337	.000	.0011	.159	.000			.001	.145	.000	.0008	.127	.000	.0008	.116	.000																
	SAT II Math								.002	.304	.000			.0020	.262	.000	.0014	.186	.000																			
	SAT II Highest Subject Score										.0006	.096	.000	.0006	.090	.000																						
Course	History/Social Science																																					
	English																																					
	Mathematics																																					
	Lab Science																																					
	Language other than English																																					
	Visual and Performing Arts																																					
	College Preparatory Elective																																					
	Total Semesters of Honors Courses																																					
	Is ELC? (1=Yes, 0=No)																																					
Demographic	Parent Income (with mean subs)																																					
	Missing Parent Income? (1=Yes, 0=No)																																					
	Highest Years of Parent Ed (with mean sub)																																					
	Missing Parent Education? (1=Yes, 0=No)																																					
	First Language Spoken (1=English, 3=Other)																																					
	Number of Acad Prep Programs																																					
	In Federal TRIO Program? (1=Yes, 0=No)																																					
	In UC Sponsored Acad Prep.? (1=Yes, 0=No)																																					
API	API (2003)-with replacement																																					
	Missing API? (1=Yes, 0=No)																																					
Ethnicity	Female? (1=Yes, 0=No)																																					
	American Indian/Alaskan? (1=Yes, 0=No)																																					
	African American? (1=Yes, 0=No)																																					
	Chicano/Latino? (1=Yes, 0=No)																																					
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)																																					
	Other Ethnic? (1=Yes, 0=No)																																					
	Unknown/Decline to State? (1=Yes, 0=No)																																					
	Foreign Visa? (1=Yes, 0=No)																																					

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University of California, Office of the President
A Comparison of SAT I and SAT II in Prediction of UC GPA after One Year of Matriculation
TABLE 5.

3,253 matriculants

Outcome: UC GPA After 1 Year

Mean= 2.86

UC Systemwide: ENGINEERING
2004 Fall Freshman Entrants

	<u>Model 12</u>			<u>Model 13</u>			<u>Model 14</u>			<u>Model 15</u>			<u>Model 16</u>			<u>Model 17</u>			<u>Model 18</u>			<u>Model 19</u>			<u>Model 20</u>			<u>Model 21</u>			<u>Model 22</u>								
R-Square	0.224			0.257			0.257			0.261			0.265			0.262			0.279			0.267			0.279			0.282			0.286								
Adjusted R-Square	0.223			0.256			0.256			0.260			0.263			0.255			0.272			0.260			0.272			0.275			0.278								
Variables	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p
Intercept	-.5348		.000	-.9469		.000	-.9469		.000	-1.0756		.000	-1.1383		.000	-1.1654		.000	-1.4058		.000	-1.1613		.000	-1.3753		.000	-1.3438		.000	-1.3222		.000						
Weighted, Capped High School GPA	.6778	.363	.000	.6122	.328	.000	.6122	.328	.000	.6160	.330	.000	.6101	.327	.000	.7389	.395	.000	.6645	.356	.000	.6977	.373	.000	.6580	.352	.000	.6393	.342	.000	.6334	.339	.000						
SAT	SAT I Verbal			.0001	.017	.494	.0001	.017	.494	.0000	.001	.958	-.0001	-.007	.785				.0001	.019	.377				.0000	-.001	.974	.0000	-.001	.964	-.0001	-.018	.507						
	SAT I Math			.0018	.235	.000				.0011	.132	.000	.0010	.123	.000				.0014	.173	.000				.0013	.167	.000	.0008	.098	.001	.0007	.085	.005						
	SAT II Writing	.0013	.191	.000	.0003	.043	.111	.0003	.043	.111	.0002	.035	.203	.0002	.029	.282				.0007	.098	.000	.0002	.034	.217	.0001	.020	.480	.0001	.012	.653								
	SAT II Math						.0018	.235	.000	.0010	.137	.000													.0008	.107	.001	.0006	.083	.008									
	SAT II Highest Subject Score												.0005	.073	.000													.0006	.085	.000									
Courses	History/Social Science															-.0109	-.026	.143	-.0069	-.016	.351	-.0098	-.023	.186	-.0067	-.016	.362	-.0053	-.012	.477	-.0052	-.012	.482						
	English															.0042	.006	.714	.0061	.009	.591	.0064	.010	.580	.0066	.010	.565	.0061	.009	.590	.0037	.006	.746						
	Mathematics												.0022	.007	.685	-.0008	-.002	.887	.0024	.008	.654	-.0007	-.002	.894	-.0019	-.006	.722	-.0007	-.002	.890									
	Lab Science												.0263	.086	.000	.0220	.072	.000	.0248	.081	.000	.0219	.071	.000	.0205	.067	.000	.0188	.061	.001									
	Language other than English												.0008	.003	.874	-.0015	-.005	.768	-.0024	-.007	.657	-.0021	-.006	.693	-.0015	-.005	.781	-.0001	.000	.979									
	Visual and Performing Arts												-.0006	-.003	.852	-.0010	-.005	.752	-.0014	-.007	.643	-.0011	-.006	.714	-.0008	-.004	.788	-.0009	-.005	.759									
	College Preparatory Elective												-.0016	-.008	.627	-.0021	-.010	.539	-.0021	-.010	.527	-.0021	-.010	.523	-.0019	-.009	.560	-.0013	-.006	.688									
	Total Semesters of Honors Courses												-.0012	-.014	.464	-.0039	-.043	.023	-.0029	-.033	.085	-.0040	-.044	.020	-.0043	-.049	.011	-.0047	-.053	.005									
Is ELC? (1=Yes, 0=No)															.0681	.045	.015	.0569	.038	.041	.0578	.039	.040	.0562	.037	.044	.0574	.038	.040	.0588	.039	.035							
Demographics	Parent Income (with mean subs)												.0000	.040	.017	.0000	.025	.135	.0000	.036	.032	.0000	.025	.133	.0000	.023	.170	.0000	.025	.135									
	Missing Parent Income? (1=Yes, 0=No)												.0516	.034	.043	.0330	.022	.191	.0456	.030	.073	.0327	.022	.195	.0293	.019	.245	.0290	.019	.249									
	Highest Years of Parent Ed (with mean sub)												.0102	.047	.014	.0045	.021	.283	.0064	.030	.131	.0041	.019	.328	.0040	.018	.347	.0039	.018	.358									
	Missing Parent Education? (1=Yes, 0=No)												.0480	.016	.342	.0416	.013	.405	.0415	.013	.410	.0423	.014	.397	.0447	.014	.370	.0396	.013	.426									
	First Language Spoken (1=English, 3=Other)												.0484	.056	.002	.0391	.046	.015	.0529	.062	.001	.0389	.045	.015	.0365	.043	.023	.0207	.024	.206									
	Number of Acad Prep Programs												.0099	.012	.541	.0097	.012	.545	.0091	.011	.572	.0095	.011	.553	.0102	.012	.524	.0091	.011	.566									
	In Federal TRIO Program? (1=Yes, 0=No)												.0787	.016	.320	.0717	.015	.360	.0744	.015	.346	.0708	.014	.366	.0751	.015	.336	.0605	.012	.438									
In UC Sponsored Acad Prep.? (1=Yes, 0=No)												-.0304	-.013	.500	-.0098	-.004	.827	-.0248	-.011	.582	-.0099	-.004	.825	-.0122	-.005	.785	-.0101	-.004	.821										
API	API (2003)-with replacement												.0010	.140	.000	.0006	.086	.000	.0008	.114	.000	.0006	.083	.000	.0006	.075	.000	.0005	.070	.000									
	Missing API? (1=Yes, 0=No)												-.0264	-.015	.342	-.0091	-.005	.742	-.0245	-.014	.377	-.0085	-.005	.758	-.0005	.000	.986	.0013	.001	.961									
Ethnicity	Female? (1=Yes, 0=No)												-.0228	-.013	.389	.0167	.010	.528	-.0248	-.015	.346	.0130	.008	.625	.0211	.012	.430	.0231	.014	.385									
	American Indian/Alaskan? (1=Yes, 0=No)												-.2551	-.023	.136	-.2382	-.021	.160	-.2263	-.020	.185	-.2336	-.021	.168	-.2130	-.019	.208	-.1961	-.017	.245									
	African American? (1=Yes, 0=No)												-.2578	-.050	.001	-.1997	-.039	.013	-.2423	-.047	.003	-.2013	-.039	.012	-.1821	-.035	.023	-.1717	-.033	.032									
	Chicano/Latino? (1=Yes, 0=No)												-.2250	-.105	.000	-.1667	-.078	.000	-.2141	-.100	.000	-.1673	-.078	.000	-.1650	-.077	.000	-.2019	-.094	.000									
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)												-.1002	-.074	.000	-.1089	-.080	.000	-.0958	-.070	.001	-.1084	-.080	.000	-.1138	-.084	.000	-.1087	-.080	.000									
	Other Ethnic? (1=Yes, 0=No)												-.0617	-.010	.514	-.0350	-.006	.708	-.0502	-.008	.594	-.0327	-.005	.727	-.0353	-.006	.705	-.0166	-.003	.859									
	Unknown/Decline to State? (1=Yes, 0=No)												-.0692	-.024	.141	-.0900	-.032	.054	-.0797	-.028	.090	-.0918	-.032	.049	-.0877	-.031	.060	-.0880	-.031	.058									
Foreign Visa? (1=Yes, 0=No)												.1067	.022	.189	.0626	.013	.437	.1126	.023	.164	.0636	.013	.430	.0485	.010	.548	.0311	.006	.700										

University of California, Office of the President
A Comparison of SAT I and SAT II in Prediction of UC GPA after One Year of Matriculation

TABLE 6. PEARSON CORRELATIONS

UC Systemwide: ENGINEERING
 2004 Fall Freshman Entrants

3,253 matriculants
 Outcome: UC GPA After 1 Year

	Variables	UC GPA	HS GPA	SAT I and SAT II							Total Courses							ELC	Demographics - Academic Prep.								API		Gender - Ethnicity*							
				V	M	W	M	S	A	B	C	D	E	F	G	Honors	Income		M Inc.	Educ	M Educ	F lang	#Ac P.	Trio	UC Prep	API	MAPI	Fem	Am Ind	Af Am	Ch/Lat	Asian	Other	Unk	For	
				1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	1 UC GPA After 1-Year (Spring 2005)	1.00	.44	.30	.38	.34	.40	.30	.02	.00	.07	.17	.09	.02	.02	.20	.19	.11	.09	.20	.03	-.01	-.06	-.04	-.10	.20	.02	.03	-.03	-.08	-.19	.03	.00	.03	.07	
	2 Weighted, Capped High School GPA	.44	1.00	.34	.33	.40	.38	.28	.01	-.04	.07	.11	.09	.02	.02	.42	.50	.04	.05	.13	.01	-.03	.02	-.03	-.01	.00	.04	.15	-.03	-.07	-.10	.02	-.01	.05	-.01	
SAT	3 SAT I Verbal	.30	.34	1.00	.60	.80	.57	.45	.07	-.05	.06	.19	.23	.07	.10	.38	.12	.25	.19	.43	.09	-.24	-.15	-.11	-.21	.36	.09	-.03	-.02	-.07	-.26	-.02	.00	.11	-.03	
	4 SAT I Math	.38	.33	.60	1.00	.63	.85	.53	.04	-.01	.14	.26	.19	.04	.10	.32	.06	.23	.17	.40	.05	.00	-.18	-.12	-.25	.47	-.01	-.11	-.02	-.12	-.38	.18	-.03	.09	.08	
	5 SAT II Writing	.34	.40	.80	.63	1.00	.63	.47	.06	-.05	.08	.20	.26	.08	.10	.38	.14	.23	.18	.43	.06	-.16	-.13	-.10	-.20	.39	.06	.04	-.04	-.07	-.26	.03	-.02	.12	-.01	
	6 SAT II Math	.40	.38	.57	.85	.63	1.00	.56	.03	.00	.16	.29	.18	.03	.09	.35	.08	.22	.16	.37	.04	.02	-.16	-.12	-.22	.46	-.03	-.10	-.04	-.14	-.35	.20	-.03	.06	.09	
	7 SAT II Highest Subject Score	.30	.28	.45	.53	.47	.56	1.00	.06	.05	.07	.25	.09	.03	.04	.30	.09	.07	.08	.17	.04	.20	-.04	-.10	.28	-.01	-.04	-.06	-.13	.00	.06	-.06	.04	.11		
Courses	8 History/Social Science	.02	.01	.07	.04	.06	.03	.06	1.00	.35	.19	.34	.19	.12	.10	.20	-.04	.02	-.02	.06	-.02	.03	-.01	-.02	-.04	.03	.17	.01	-.01	.00	-.05	.01	.02	.00	.14	
	9 English	.00	-.04	-.05	-.01	-.05	.00	.05	.35	1.00	.30	.27	.14	.09	.10	.02	-.05	-.08	-.05	-.05	-.03	.10	.01	.01	.00	-.02	.04	.00	.00	-.01	.00	.02	.05	-.02	.14	
	10 Mathematics	.07	.07	.06	.14	.08	.16	.07	.19	.30	1.00	.30	.24	.03	.08	.17	.00	-.01	.00	.01	.03	.03	.06	.01	.02	.04	.02	.01	.00	-.02	-.05	.04	.02	-.01	.12	
	11 Lab Science	.17	.11	.19	.26	.20	.29	.25	.34	.27	.30	1.00	.16	.02	.02	.31	-.01	.05	.01	.14	-.01	.09	-.03	-.02	-.07	.17	.08	.00	.00	-.04	-.15	.12	.01	.00	.21	
	12 Language other than English	.09	.09	.23	.19	.26	.18	.09	.19	.14	.24	.16	1.00	.02	.03	.20	-.01	.11	.05	.16	.04	-.06	-.06	-.03	-.09	.19	.07	.04	.01	-.01	-.09	.01	.02	.04	.02	
	13 Visual and Performing Arts	.02	.02	.07	.04	.08	.03	.03	.12	.09	.03	.02	.02	1.00	-.05	.04	-.04	.05	.03	.07	-.02	-.05	.00	-.03	-.03	.04	.01	.05	.04	.00	-.06	-.01	-.02	.00	.01	
	14 College Preparatory Elective	.02	.02	.10	.10	.10	.09	.04	.10	.10	.08	.02	.03	-.05	1.00	.20	-.05	.03	.00	.08	-.02	.02	.02	-.03	-.05	.10	.12	-.02	-.01	-.01	-.07	.08	.01	.01	.03	
	15 Total Semesters of Honors Courses	.20	.42	.38	.32	.38	.35	.30	.20	.02	.17	.31	.20	.04	.20	1.00	.21	.05	.05	.13	.02	.03	.05	-.02	.02	.04	.03	.06	-.02	-.05	-.07	.09	.00	.04	-.06	
	16 Is ELC? (1=Yes, 0=No)	.19	.50	.12	.06	.14	.08	.09	-.04	-.05	.00	-.01	-.01	-.04	-.05	.21	1.00	-.05	-.03	-.08	-.02	.02	.09	.05	.11	-.27	-.12	.10	-.03	-.02	.06	-.02	.01	.04	-.04	
Academic Prep	17 Parent Income (with mean subs)	.11	.04	.25	.23	.23	.22	.07	.02	-.08	-.01	.05	.11	.05	.03	.05	-.05	1.00	-.01	.38	-.02	-.24	-.14	-.10	-.15	.24	.09	-.01	-.01	-.04	-.16	-.05	-.02	.01	.05	
	18 Missing Parent Income? (1=Yes, 0=No)	.09	.05	.19	.17	.18	.16	.08	-.02	-.05	.00	.01	.05	.03	.00	.05	-.03	-.01	1.00	.19	.31	-.18	-.09	-.06	-.13	.16	.07	-.06	.00	.00	-.11	-.10	.00	.14	-.02	
	19 Highest Years of Parent Ed (with mean sub)	.20	.13	.43	.40	.43	.37	.17	.06	-.05	.01	.14	.16	.07	.08	.13	-.08	.38	.19	1.00	-.03	-.31	-.23	-.19	-.27	.39	.06	-.03	.00	.00	-.37	-.02	.02	.07	.03	
	20 Missing Parent Education? (1=Yes, 0=No)	.03	.01	.09	.05	.06	.04	.04	-.02	-.03	.03	-.01	.04	-.02	-.02	.02	-.02	-.02	.31	-.03	1.00	-.06	-.04	-.03	-.03	.04	.02	-.03	.01	.02	-.05	-.04	-.01	.21	-.02	
	21 First Language Spoken (1=English, 3=Other)	-.01	-.03	-.24	.00	-.16	.02	.20	.03	.10	.03	.09	-.06	-.05	.02	.03	.02	-.24	-.18	-.31	-.06	1.00	.13	.08	.15	-.02	-.13	.03	-.05	-.07	.14	.33	.00	-.09	.16	
	22 Number of Acad Prep Programs	-.06	.02	-.15	-.18	-.13	-.16	-.04	-.01	.01	.06	-.03	-.06	.00	.02	.05	.09	-.14	-.09	-.23	-.04	.13	1.00	.30	.58	-.27	-.06	.09	-.02	.08	.22	-.02	.02	-.02	-.03	
	23 In Federal TRIO Program? (1=Yes, 0=No)	-.04	-.03	-.11	-.12	-.10	-.12	.00	-.02	.01	.01	-.02	-.03	-.03	-.03	-.02	.05	-.10	-.06	-.19	-.03	.08	.30	1.00	.15	-.16	-.03	.05	-.01	.01	.19	-.04	-.02	-.04	-.02	
	24 In UC Sponsored Acad Prep.? (1=Yes, 0=No)	-.10	-.01	-.21	-.25	-.20	-.22	-.10	-.04	.00	.02	-.07	-.09	-.03	-.05	.02	.11	-.15	-.13	-.27	-.03	.15	.58	.15	1.00	-.36	-.09	.08	-.02	.08	.25	-.02	.01	-.05	-.05	
API	25 API (2003)-with replacement	.20	.00	.36	.47	.39	.46	.28	.03	-.02	.04	.17	.19	.04	.10	.04	-.27	.24	.16	.39	.04	-.02	-.27	-.16	-.36	1.00	.09	-.05	-.02	-.06	-.30	.16	-.02	.03	.05	
	26 Missing API? (1=Yes, 0=No)	.02	.04	.09	.09	.06	.03	-.01	.17	.04	.02	.08	.07	.01	.12	.03	-.12	.09	.07	.06	.02	-.13	-.06	-.03	-.09	.09	1.00	.01	-.02	.01	.01	-.10	-.02	.01	.11	
Ethnicity	27 Female? (1=Yes, 0=No)	.03	.15	-.03	-.11	.04	-.10	-.04	.01	.00	.01	.00	.04	.05	-.02	.06	.10	-.01	-.06	-.03	-.03	.03	.09	.05	.08	-.05	.01	1.00	.00	.00	.04	.01	.02	.00	.02	
	28 American Indian/Alaskan? (1=Yes, 0=No)	-.03	-.03	-.02	-.02	-.04	-.04	-.06	-.01	.00	.00	.00	.01	.04	-.01	-.02	-.03	-.01	.00	.00	.01	-.05	-.02	-.01	-.02	-.02	-.02	.00	1.00	-.01	-.02	-.06	-.01	-.02	-.01	
	29 African American? (1=Yes, 0=No)	-.08	-.07	-.07	-.12	-.07	-.14	-.13	.00	-.01	-.02	-.04	-.01	.00	-.01	-.05	-.02	-.04	.00	.00	.02	-.07	.08	.01	.08	-.06	.01	.00	-.01	1.00	-.05	-.13	-.02	-.03	-.02	
	30 Chicano/Latino? (1=Yes, 0=No)	-.19	-.10	-.26	-.38	-.26	-.35	.00	-.05	.00	-.05	-.15	-.09	-.06	-.07	-.07	.06	-.16	-.11	-.37	-.05	.14	.22	.19	.25	-.30	.01	.04	-.02	-.05	1.00	-.35	-.04	-.09	-.05	
	31 Asian, Filipino, Pac. Isle? (1=Yes, 0=No)	.03	.02	-.02	.18	.03	.20	.06	.01	.02	.04	.12	.01	-.01	.08	.09	-.02	-.05	-.10	-.02	-.04	.33	-.02	-.04	-.02	.16	-.10	.01	-.06	-.13	-.35	1.00	-.11	-.25	-.14	
	32 Other Ethnic? (1=Yes, 0=No)	.00	-.01	.00	-.03	-.02	-.03	-.06	.02	.05	.02	.01	.02	-.02	.01	.00	.01	-.02	.00	.02	-.01	.00	.02	-.02	.01	-.02	-.02	.02	-.01	-.02	-.04	-.11	1.00	-.03	-.02	
	33 Unknown/Decline to State? (1=Yes, 0=No)	.03	.05	.11	.09	.12	.06	.04	.00	-.02	-.01	.00	.04	.00	.01	.04	.04	.01	.14	.07	.21	-.09	-.02	-.04	-.05	.03	.01	.00	-.02	-.03	-.09	-.25	-.03	1.00	-.04	
	34 Foreign Visa? (1=Yes, 0=No)	.07	-.01	-.03	.08	-.01	.09	.11	.14	.14	.12	.21	.02	.01	.03	-.06	-.04	.05	-.02	.03	-.02	.16	-.03	-.02	-.05	.05	.11	.02	-.01	-.02	-.05	-.14	-.02	-.04	1.00	

* White is Reference Group for Ethnicity

University of California, Office of the President
A Comparison of SAT Reasoning and SAT Subject Exams in Prediction of UC GPA after One Year of Matriculation
TABLE 7.

3,578 matriculants (except as noted)

Outcome: UC GPA After 1 Year Mean= 2.86

UC Systemwide: ENGINEERING
2006 Fall Freshman Entrants

		<u>Model 12</u>	<u>Model 13</u>	<u>Model 14</u>	<u>Model 15</u>	<u>Model 16</u>	<u>Model 17</u>	<u>Model 18</u>	<u>Model 19</u>	<u>Model 20</u>	<u>Model 21</u>	<u>Model 22</u>																									
R-Square		0.246	0.272	0.285	0.285	0.285	0.269	0.291	0.282	0.293	0.305	0.306																									
Adjusted R-Square		0.245	0.271	0.284	0.284	0.284	0.263	0.285	0.276	0.287	0.297	0.299																									
Variables	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p	B	Beta	p																			
Intercept	-.5455		.000	-.9409		.000	-.9484		.000	-.9866		.000	-.8527		.000	-.4293		.007	-.8629		.000	-.6119		.000	-.8570		.000	-.7878		.000	-.7176		.000				
Weighted, Capped High School GPA	.6075	.330	.000	.5630	.306	.000	.5462	.295	.000	.5463	.295	.000	.5253	.285	.000	.6700	.364	.000	.5885	.319	.000	.6153	.334	.000	.5795	.314	.000	.5311	.287	.000	.5364	.291	.000				
SAT	SAT Reasoning Critical Reading			.0004	.064	.007	.0004	.066	.013	.0004	.064	.018	.0002	.025	.308				.0006	.090	.000				.0003	.052	.033	.0003	.043	.116	.0000	.003	.913				
	SAT Reasoning Math			.0015	.197	.000				.0003	.040	.185	.0006	.085	.000				.0011	.154	.000				.0011	.141	.000	.0001	.015	.635	.0003	.038	.135				
	SAT Reasoning Writing	.0018	.262	.000	.0006	.094	.000	.0005	.072	.011	.0004	.066	.021	.0005	.075	.003						.0011	.158	.000	.0005	.070	.007	.0003	.042	.152	.0003	.052	.043				
	SAT Subject Highest Score 1 (Math as noted)						.0017	.240	.000	.0004	.066	.021	.0005	.075	.003											.0015	.212	.000	.0004	.050	.055						
	SAT Subject Highest Score 2 (Math Subj, n=2,894)									.0015	.211	.000	.0001	.011	.642																						
Course	History/Social Science																																				
	English																																				
	Mathematics																																				
	Lab Science																																				
	Language other than English																																				
	Visual and Performing Arts																																				
	College Preparatory Elective																																				
	Total Semesters of Honors Courses																																				
Demographic	Is ELC? (1=Yes, 0=No)																																				
	Parent Income (with mean subs)																																				
	Missing Parent Income? (1=Yes, 0=No)																																				
	Highest Years of Parent Ed (with mean sub)																																				
	Missing Parent Education? (1=Yes, 0=No)																																				
	First Language Spoken (1=English, 3=Other)																																				
	Number of Acad Prep Programs																																				
	In Federal TRIO Program? (1=Yes, 0=No)																																				
API	In UC Sponsored Acad Prep.? (1=Yes, 0=No)																																				
	API (2005)-with replacement																																				
Ethnicity	Missing API? (1=Yes, 0=No)																																				
	Female? (1=Yes, 0=No)																																				
	American Indian/Alaskan? (1=Yes, 0=No)																																				
	African American? (1=Yes, 0=No)																																				
	Chicano/Latino? (1=Yes, 0=No)																																				
	Asian, Filipino, Pac. Isle? (1=Yes, 0=No)																																				
	Other Ethnic? (1=Yes, 0=No)																																				
	Unknown/Decline to State? (1=Yes, 0=No)																																				
Foreign Visa? (1=Yes, 0=No)																																					

University of California, Office of the President
A Comparison of SAT Reasoning and SAT Subject Exams in Prediction of UC GPA after One Year of Matriculation

TABLE 8. PEARSON CORRELATIONS

UC Systemwide: ENGINEERING
 2006 Fall Freshman Entrants

3,578 matriculants (except as noted)
 Outcome: UC GPA After 1 Year

	Variables	UC GPA	HS GPA	SAT Reasoning & SAT Subject				Total Courses								ELC	Demographics - Academic Prep.								API		Gender - Ethnicity*									
				CR		M	W	S1	S2	A	B	C	D	E	F		G	Honors	Income	M Inc.	Educ	M Educ	F lang	#Ac P.	Trio	UC Prep	API	MAPI	Fem	Am Ind	Af Am	Ch/Lat	Asian	Other	Unk	For
				1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	1 UC GPA After 1-Year (Spring 2007)	1.00	.43	.37	.40	.39	.37	.45	.02	-.03	.13	.20	.12	.04	-.03	.24	.19	.14	.15	.24	.04	-.08	-.09	-.09	-.11	.23	.02	.02	-.01	-.09	-.17	-.02	-.03	.06	.06	
	2 Weighted, Capped High School GPA	.43	1.00	.36	.34	.40	.34	.40	.01	-.06	.14	.14	.11	.04	-.02	.42	.51	.10	.11	.15	.02	-.05	.01	-.04	-.02	.05	.04	.13	-.01	-.12	-.08	-.01	-.01	.03	.00	
SAT	3 SAT Reasoning Critical Reading	.37	.36	1.00	.61	.79	.50	.65	.05	-.09	.16	.22	.25	.09	.04	.42	.13	.25	.25	.43	.07	-.23	-.11	-.14	-.16	.36	.09	-.02	.00	-.09	-.23	-.02	-.06	.10	.00	
	4 SAT Reasoning Math	.40	.34	.61	1.00	.64	.68	.77	.02	-.03	.26	.29	.21	.07	.01	.39	.06	.24	.22	.43	.06	-.03	-.14	-.14	-.18	.46	.01	-.11	-.02	-.14	-.35	.16	-.05	.06	.10	
	5 SAT Reasoning Writing	.39	.40	.79	.64	1.00	.52	.65	.05	-.09	.19	.25	.28	.09	.05	.44	.14	.27	.23	.45	.07	-.17	-.12	-.14	-.17	.41	.09	.03	.00	-.09	-.25	.02	-.06	.09	.04	
	6 SAT Subject Highest Score 1	.37	.34	.50	.68	.52	1.00	.81	.02	.04	.20	.28	.14	.04	-.02	.36	.10	.13	.15	.24	.04	.17	-.06	-.09	-.08	.32	-.04	-.05	-.03	-.16	-.08	.08	-.08	.04	.11	
	7 SAT Subject Highest Score 2	.45	.40	.65	.77	.65	.81	1.00	.04	.00	.23	.35	.18	.06	-.01	.44	.12	.19	.19	.37	.05	.07	-.09	-.11	-.14	.40	-.02	-.06	-.04	-.14	-.24	.12	-.08	.06	.13	
	8 History/Social Science	.02	.01	.05	.02	.05	.02	.04	1.00	.20	.07	.23	.07	.07	.03	.19	-.04	.04	.01	.05	.00	.00	.00	-.05	-.01	.04	.17	.00	.01	-.02	-.01	-.04	.02	.00	.12	
9 English	-.03	-.06	-.09	-.03	-.09	.04	.00	.20	1.00	.09	.15	-.04	.05	.07	-.04	-.05	-.05	-.02	-.04	-.03	.11	.04	.02	.02	-.03	.07	-.01	-.02	.02	.02	.00	.03	.01	.10		
10 Mathematics	.13	.14	.16	.26	.19	.20	.23	.07	.09	1.00	.21	.08	.01	-.02	.24	.08	.05	.02	.10	-.02	-.02	.04	.03	-.02	.08	-.04	.01	.01	-.04	-.08	.07	-.02	.05	.02		
11 Lab Science	.20	.14	.22	.29	.25	.28	.35	.23	.15	.21	1.00	.12	.01	-.05	.29	.01	.06	.06	.17	.00	.07	.01	-.03	-.04	.22	.11	.05	.01	-.05	-.12	.10	-.03	.03	.18		
12 Language other than English	.12	.11	.25	.21	.28	.14	.18	.07	-.04	.08	.12	1.00	.01	-.03	.22	-.01	.12	.11	.18	.03	-.08	.00	-.04	-.06	.21	.05	.04	.00	-.02	-.09	.03	-.03	.03	-.01		
13 Visual and Performing Arts	.04	.04	.09	.07	.09	.04	.06	.07	.05	.01	.01	.01	1.00	-.08	.03	-.02	.07	-.01	.12	-.01	-.02	-.03	-.06	-.03	.08	.03	.08	-.02	-.05	-.04	.00	.02	.00	.02		
14 College Preparatory Elective	-.03	-.02	.04	.01	.05	-.02	-.01	.03	.07	-.02	-.05	-.03	-.08	1.00	.09	-.04	-.04	.03	.04	.04	.03	.01	-.01	.00	.05	.11	-.04	.02	.00	-.06	.06	.01	.00	-.02		
15 Total Semesters of Honors Courses	.24	.42	.42	.39	.44	.36	.44	.19	-.04	.24	.29	.22	.03	.09	1.00	.25	.06	.08	.19	.01	.01	.05	-.02	.02	.09	.01	-.03	-.01	-.06	-.05	.06	-.02	.04	.00		
16 Is ELC? (1=Yes, 0=No)	.19	.51	.13	.06	.14	.10	.12	-.04	-.05	.08	.01	-.01	-.02	-.04	.25	1.00	-.04	.01	-.05	-.01	-.03	.09	.04	.09	-.23	-.16	.05	.00	-.06	.07	-.06	.03	.01	-.01		
Academic Prep	17 Parent Income (with mean subs)	.14	.10	.25	.24	.27	.13	.19	.04	-.05	.05	.06	.12	.07	-.04	.06	-.04	1.00	.03	.42	.00	-.26	-.09	-.11	-.13	.28	.12	-.03	.01	-.03	-.14	-.07	-.01	.01	-.01	
	18 Missing Parent Income? (1=Yes, 0=No)	.15	.11	.25	.22	.23	.15	.19	.01	-.02	.02	.06	.11	-.01	.03	.08	.01	.03	1.00	.22	.43	-.16	-.07	-.07	-.09	.19	.08	-.03	-.02	-.03	-.14	-.08	-.03	.16	-.02	
	19 Highest Years of Parent Ed (with mean sub)	.24	.15	.43	.43	.45	.24	.37	.05	-.04	.10	.17	.18	.12	.04	.19	-.05	.42	.22	1.00	-.01	-.29	-.16	-.21	-.19	.44	.13	-.04	.00	-.01	-.34	-.01	.01	.07	.07	
	20 Missing Parent Education? (1=Yes, 0=No)	.04	.02	.07	.06	.07	.04	.05	.00	-.03	-.02	.00	.03	-.01	.04	.01	-.01	.00	.43	-.01	1.00	-.03	-.03	-.03	-.03	.07	.02	.01	-.02	.00	-.06	.00	-.03	.14	-.02	
	21 First Language Spoken (1=English, 3=Other)	-.08	-.05	-.23	-.03	-.17	.17	.07	.00	.11	-.02	.07	-.08	-.02	.03	.01	-.03	-.26	-.16	-.29	-.03	1.00	.09	.09	.07	-.09	-.12	.06	-.06	-.09	.11	.30	.05	-.09	.16	
	22 Number of Acad Prep Programs	-.09	.01	-.11	-.14	-.12	-.06	-.09	.00	.04	.04	.01	.00	-.03	.01	.05	.09	-.09	-.07	-.16	-.03	.09	1.00	.35	.54	-.27	-.03	.09	.01	.07	.19	-.03	.00	-.03	-.03	
	23 In Federal TRIO Program? (1=Yes, 0=No)	-.09	-.04	-.14	-.14	-.14	-.09	-.11	-.05	.02	.03	-.03	-.04	-.06	-.01	-.02	.04	-.11	-.07	-.21	-.03	.09	.35	1.00	.11	-.23	-.04	-.01	-.01	.05	.13	-.02	.01	.00	-.02	
	24 In UC Sponsored Acad Prep.? (1=Yes, 0=No)	-.11	-.02	-.16	-.18	-.17	-.08	-.14	-.01	.02	-.02	-.04	-.06	-.03	.00	.02	.09	-.13	-.09	-.19	-.03	.07	.54	.11	1.00	-.32	-.08	.04	.02	.06	.21	-.07	.01	-.02	-.03	
API	25 API (2005)-with replacement	.23	.05	.36	.46	.41	.32	.40	.04	-.03	.08	.22	.21	.08	.05	.09	-.23	.28	.19	.44	.07	-.09	-.27	-.23	-.32	1.00	.24	.00	-.02	-.08	-.34	.14	-.01	.04	.09	
	26 Missing API? (1=Yes, 0=No)	.02	.04	.09	.01	.09	-.04	-.02	.17	.07	-.04	.11	.05	.03	.11	-.01	-.16	.12	.08	.13	.02	-.12	-.03	-.04	-.08	.24	1.00	.06	.02	.02	-.04	-.07	.00	.02	.09	
Ethnicity	27 Female? (1=Yes, 0=No)	.02	.13	-.02	-.11	.03	-.05	-.06	.00	-.01	.01	.05	.04	.08	-.04	.03	.05	-.03	-.03	-.04	.01	.06	.09	-.01	.04	.00	.06	1.00	.02	.00	.02	.03	-.01	.00	.01	
	28 American Indian/Alaskan? (1=Yes, 0=No)	-.01	-.01	.00	-.02	.00	-.03	-.04	.01	-.02	.01	-.01	.00	-.02	.02	-.01	.00	.01	-.02	.00	-.02	-.06	.01	-.01	.02	-.02	.02	.02	1.00	-.01	-.03	-.07	-.01	-.01	-.01	
	29 African American? (1=Yes, 0=No)	-.09	-.12	-.09	-.14	-.09	-.16	-.14	-.02	.02	-.04	-.05	-.02	-.05	.00	-.06	-.06	-.03	-.03	-.01	.00	-.09	.07	.05	.06	-.08	.02	.00	-.01	1.00	-.05	-.13	-.01	-.03	-.02	
	30 Chicano/Latino? (1=Yes, 0=No)	-.17	-.08	-.23	-.35	-.25	-.08	-.24	-.01	.02	-.08	-.12	-.09	-.04	-.06	-.05	.07	-.14	-.14	-.34	-.06	.11	.19	.13	.21	-.34	-.04	.02	-.03	-.05	1.00	-.41	-.04	-.08	-.06	
	31 Asian, Filipino, Pac. Isle? (1=Yes, 0=No)	-.02	-.01	-.02	.16	.02	.08	.12	-.04	.00	.07	.10	.03	.00	.06	.06	-.06	-.07	-.08	-.01	.00	.30	-.03	-.02	-.07	.14	-.07	.03	-.07	-.13	-.41	1.00	-.12	-.22	-.16	
	32 Other Ethnic? (1=Yes, 0=No)	-.03	-.01	-.06	-.05	-.06	-.08	-.08	.02	.03	-.02	-.03	-.03	.02	.01	-.02	.03	.01	-.03	.01	-.03	.05	.00	.01	.01	-.01	.00	-.01	-.01	-.01	-.04	-.12	1.00	-.02	-.02	
	33 Unknown/Decline to State? (1=Yes, 0=No)	.06	.03	.10	.06	.09	.04	.06	.00	.01	.05	.03	.03	.00	.00	.04	.01	.01	.16	.07	.14	-.09	-.03	.00	-.02	.04	.02	.00	-.01	-.03	-.08	-.22	-.02	1.00	.00	
	34 Foreign Visa? (1=Yes, 0=No)	.06	.00	.10	.04	.11	.13	.12	.10	.02	.18	-.01	.02	-.02	.00	-.01	-.01	-.01	-.02	.07	-.02	.16	-.03	-.02	-.03	.09	.09	.01	-.01	-.02	-.06	-.16	-.02	.00	1.00	

* White is Reference Group for Ethnicity