The National SAT Validity Study:

Sharing Results from Recent College Success Research

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The College Board

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Presentation Outline

- Introduction
- Validity
- Overview of Study
  - Sample & Method
- Admission Validity
- Differential Validity
- Retention
- Discrepant HSGPA and SAT
- Admitted Class Evaluation Service™ (ACES ™) System
- Q&A

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Focus on Criterion-Related Validity
(or Predictive Validity)

- **Predictive validity** refers to the "power" or usefulness of test scores to predict future performance.
- Over time, validity evidence will continue to gather, either enhancing or contradicting previous findings.
- Establishing predictive validity is particularly useful when colleges or universities use standardized test scores as part of their admission criteria for enrollment or for admittance into a particular program.
    - This is *also* the responsibility of the test publisher.

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National SAT Validity Study

- Cross-institutional, longitudinal validity and higher education research informing ways to ensure that students are ready for and successful in college.
- Data supplied by four-year institutions from around the U.S. and matched to College Board data.
- Topics studied include:
  - Predictive validity of SAT with regard to FYGPA, cumulative GPA, retention (will study graduation when those data are available)
  - Understanding discrepant performance on SAT and HSGPA – implications for college performance
  - AP participation and performance and related college outcomes
  - Relationship between self-reported and actual HSGPA
  - Characteristics of students who switch from and remain in STEM majors
  - Many more

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Sampling Plan
(developed in 2006)

- The population of colleges: 726 institutions receiving 200 or more SAT score reports in 2005.
- The target sample of colleges: stratified target sample was 150 institutions on various characteristics (public/private, region, admission selectivity, and size)
- Institutions have been recruited via: E-mail invites and/or visits from CB staff; Conference Exhibit Booths; Print announcements in CB and Association for Institutional Research (AIR) publications; etc.

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Institutional Characteristics (*N*=110)
(entering class of Fall 2007 – 1st Yr)

Variable		Sample	Population
Region	Midwest	16%	16%
	Mid-Atlantic	21%	18%
	New England	18%	13%
	South	14%	25%
	Southwest	13%	10%
	West	18%	18%
Selectivity	under 50%	19%	20%
	50 to 75%	57%	44%
	over 75%	24%	36%
Size	Small: 750 to 1,999 undergrads	22%	18%
	Medium to Large: 2,000 to 7,499 undergrads	37%	43%
	Large: 7,500 to 14,999 undergrads	17%	20%
	Very large: 15,000 or more undergrads	24%	19%
Control	Public	46%	57%
	Private	54%	43%

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File Submission Takes Place with the Admitted Class Evaluation Service (ACES)

- ACES is a **free** online service that predicts how admitted students will perform at a college or university, generally (admission validity), and how successful students will be in specific courses (placement validity).

- By using ACES to submit the SAT Validity Study file, each institution receives a unique admission validity study and a returned file with supplementary variables from the College Board database (e.g. AP scores, SAT Questionnaire responses, etc.)

- www.collegeboard.com/aces

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National SAT Validity Study Data in House

Fall 2006 Entering Cohort

1st Year

- 110 institutions
- 196,364 students across the US; 151,316 students had complete data (SAT, HGPA, FYGPA)

2nd Year

- 67 returning institutions
- 109,153 students across the US; ~74,955 students had complete data (SAT, HGPA, FYGPA, SYGPA, cumGPA)

3rd Year

- Importing in progress
- 60 returning institutions

Fall 2007 Entering Cohort

1st Year

- 110 institutions
- 216,081 students across the US; 159,286 students had complete data (SAT, HGPA, FYGPA)

2nd Year

- Importing in progress
- 94 institutions submitted data

Fall 2008 Entering Cohort

1st Year

- Importing in progress
- 130 institutions submitted data

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Data Included in Files

For example, a First-Year Data on Fall 2008 Cohort *(first-time, first-year students that began at institution in fall 2008)* **would contain students':**

- Name
- SSN
- Date of birth
- Gender
- University-assigned student ID
- Retention to the 2nd year ("yes" or "no")
- First-year GPA
- Grades in first-year courses
- Course abbreviations for first-year courses (e.g., ENG 101)
- Course long names for first-year courses (e.g., Introductory English)
- Credit hours attempted for each course
- Semester each course was taken
- High School GPA (can be supplied by the ACES system or the institution)

After 1st year of data, we also ask for Major and CIP code

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Institutional data matched to CB records:

- Test scores (SAT, AP, SAT subject tests, PSAT/NMSQT)
- SAT Questionnaire responses
  - Gender
  - Race/Ethnicity
  - Self-reported HSGPA
  - High school coursework and activities
  - College plans
- Annual Survey of Colleges (institutional characteristics)
  - Size
  - Selectivity
  - Control
  - Region

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Cleaning the Data after ACES Processing

Student Level Checks to Remain in the Study

- Student earned enough credit to constitute completion of a full academic year
- Student took the SAT after March 2005 (SAT W score)
- Student indicated their HSGPA on the SAT Questionnaire (when registering for the SAT)
- Student had a valid FYGPA

Institution Level Checks to Remain in the Study

- Check for institutions with high proportion of zero FYGPA (should some be missing or null?)
- Grading system makes sense (e.g. an institution submitted a file with no failing grades)
- Recoding variables for consistency (e.g. fall semester or fall trimester or fall quarter = term **1** for placement analyses)

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Validating a Test for a Particular Use

The most common approach used to validate an admission test for educational selection has been through the computation of validity coefficients and regression lines.

Validity coefficients are the computed correlation coefficients between predictor variables and a criterion or outcome variable(s), which can determine the predictive validity of a test.

A large correlation indicates strong predictive validity of a test to the criterion, however, a large correlation by itself does not satisfy all facets required of test validity.

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SAT Validity Study results - snapshot

- Admission Validity Study

<u>SAMPLE (2007 entering cohort)</u>

110 colleges participating in Validity Study (N = 216,081)

- Schools provided first year performance data for Fall 2007 cohort through the Admitted Class Evaluation Service™ (ACES ™) portal

Restrict sample to students who completed the new SAT, submitted self reported HSGPA, and had a valid FYGPA (N=159,286)

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Admission Validity Results (1 of 2)

- SAT Writing has the highest correlation with FYGPA among the three individual SAT sections (*Adj. r* = 0.53).
  - SAT CR (*Adj. r* = 0.50); SAT M (*Adj. r* = 0.49)

- As expected, the best combination of predictors of FYGPA is HSGPA and SAT scores (Adj. *r* =0.64), reinforcing the recommendation that colleges use both HSGPA and SAT scores to make the best predictions of student success.

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Admission Validity Results (2 of 2)

- The adjusted correlation of HSGPA and FYGPA is 0.56, which is the *same as* the multiple correlation of the SAT (CR, M, and W combined) with FYGPA (Adj. *r* = 0.56).
- The increment in predictive validity attributable to the SAT when HSGPA is taken into account is 0.08.
- The increment in validity attributable to the Writing section over and above the CR and M sections is 0.02. When HSGPA is also considered, the increment in validity attributable to the Writing section is 0.01.

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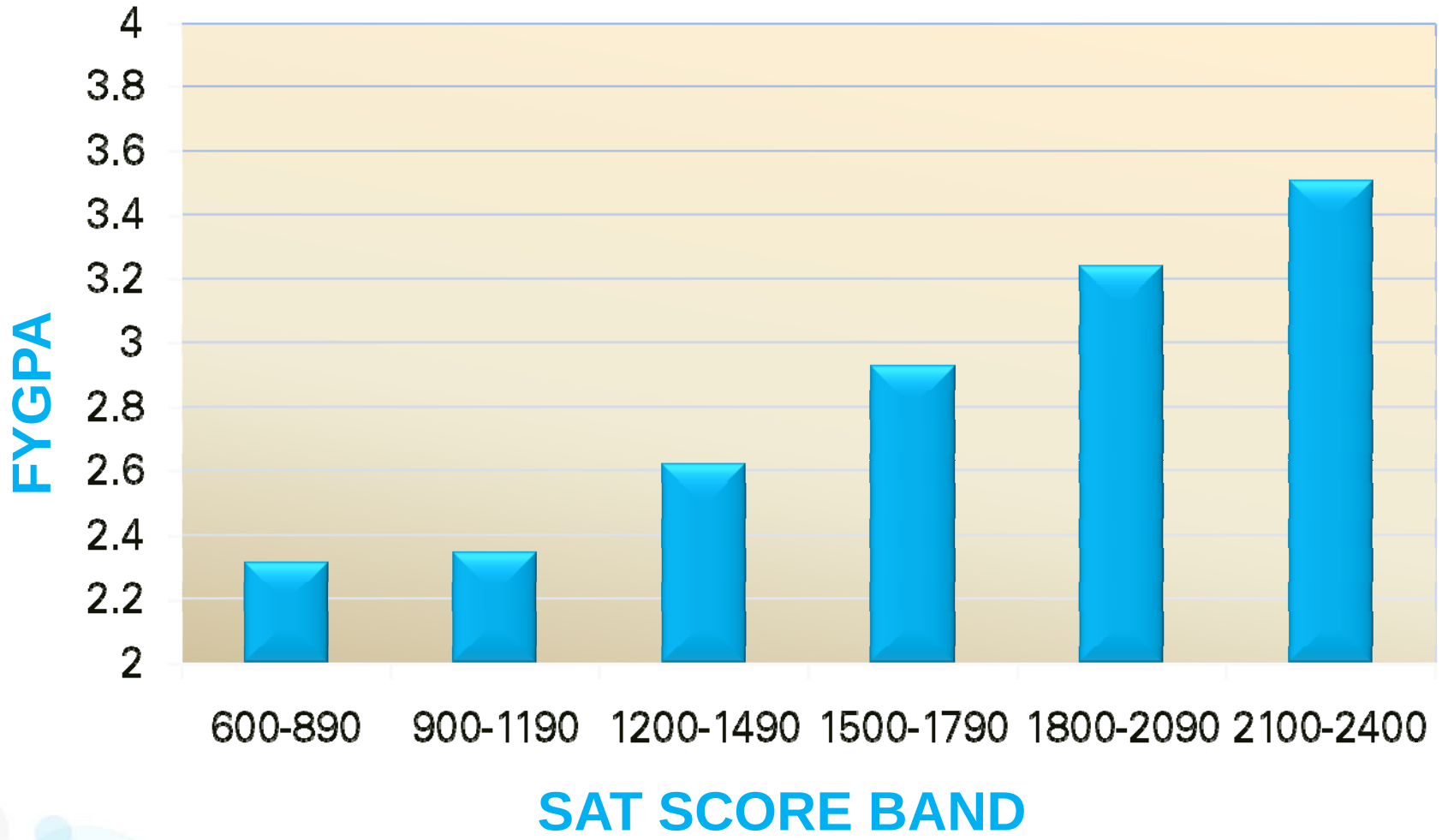
Another way to think of a correlation of 0.53
Mean FYGPA by SAT Score Band



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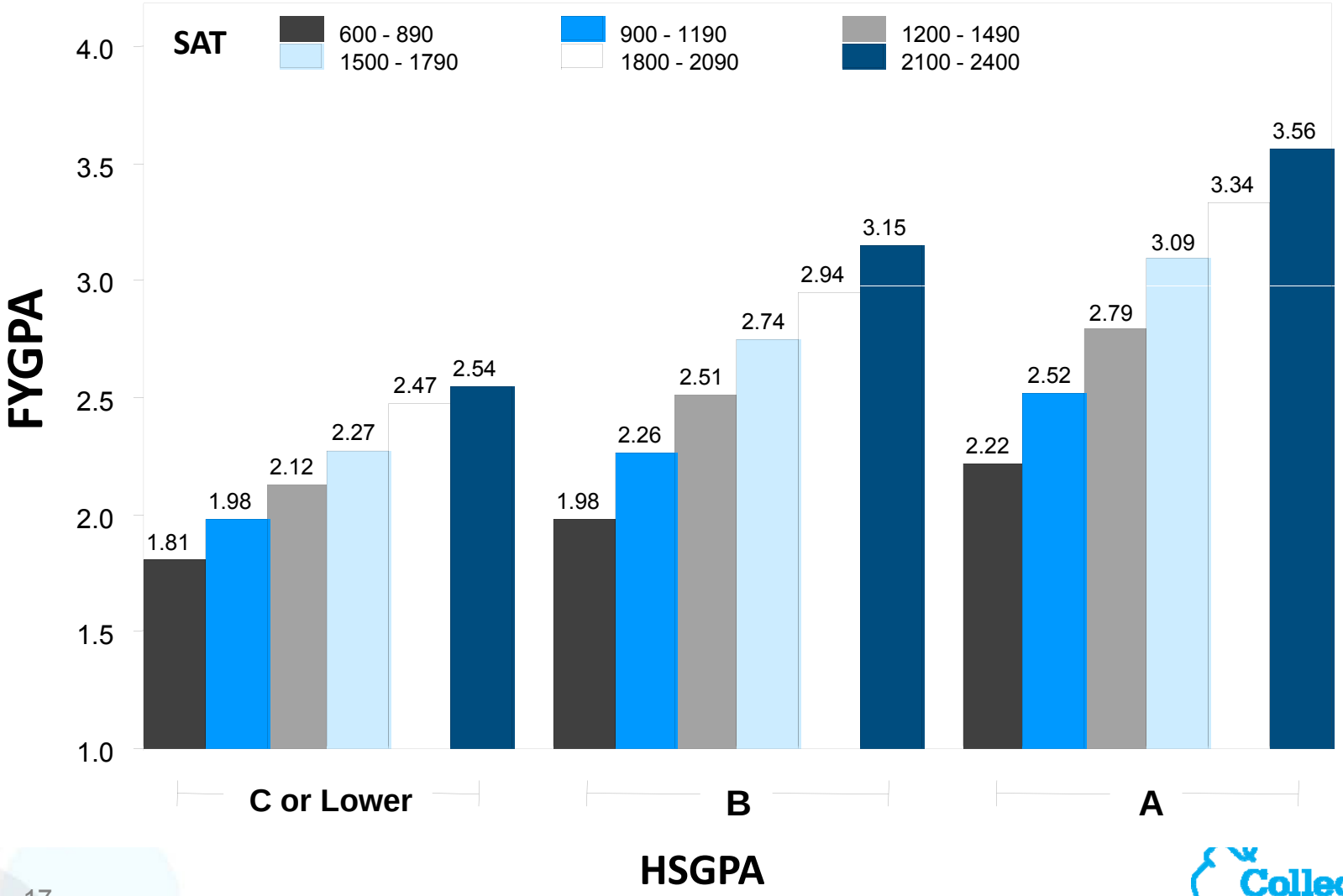
Another View of Incremental Validity

Mean FYGPA by SAT Score Band, Controlling for HSGPA



Differential Validity and Prediction

Differential Validity: refers to a finding where the computed validity coefficients are significantly different for different groups of examinees. (A test can be predictive for all groups but to different degrees.)

Differential Prediction: refers to a finding where the best prediction equations and/or the standard errors of estimate are significantly different for different groups of examinees. Differential prediction is therefore the result of varying degrees of validity for the variables across examinee groups.

- Underprediction: Performing better in college than was predicted.
- Overprediction: Performing worse in college than was predicted.

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Differential Validity Results

Similar to previous findings…

Differential Validity

- SAT and HSGPA were more predictive of FYGPA (higher correlations) for females versus males, White students versus other racial/ethnic groups, and students indicating English as best language versus English and Another or Another language as their best language.

- Within subgroups, SAT scores (versus HSGPA) were more predictive of FYGPA for females, American Indian or Alaska Native, Asian, Black, and "Other" students, as well as those indicating their best language to be Another language or English and Another.

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Differential Prediction Results

Differential Prediction

- SAT and HSGPA tend to underpredict FYGPA for females; however, magnitude is larger for the SAT.
- SAT and HSGPA tend to overpredict FYGPA for minority students; however, magnitude is larger for HSGPA
- SAT-CR & SAT-W tend to underpredict FYGPA for students whose best lang. is not English. SAT-M accurately predicts their FYGPA.
- SAT & HSGPA both tend to overpredict FYGPA for students whose best lang. is English and another language; however, magnitude is larger for HSGPA.

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SAT and Retention

This study answers:

- Is performance on the SAT related to retention?
- What are the demographic characteristics of returners vs. non-returners?
- Similarly, do retention rates vary by student and institutional characteristics?
  - If so, are these differences reduced or eliminated when controlling for SAT performance?

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Sample & Measures

Sample

- Analyses based on data collected for the national SAT Validity Study
  - The sample included the 147,999 students (106 institutions) that had complete data (SAT, HSGPA, retention)

Measures

- Institutions provided retention
- SAT scores (most recent) were obtained from CB records
- HSGPA was self-reported, obtained from the SAT-Questionnaire

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Analyses & Results

Comparison of returners (86%) and non-returners

- By student and institutional characteristics (%) – Of note:
  - % of non-returners that are American-Indian, African-American, and Hispanic were slightly higher than for the total group.
  - Students from lower SES families made-up a greater percentage of the non-returners as compared to the total group.
  - 15.4% of the sample attended a selective institution (i.e., admits fewer than 50% of applicants); however, this percentage varied markedly for returners (16.8%) and non-returners (7.2%).

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Comparison of Returners and Non-returners

- Mean performance on academic indicators

Measures	Returners	Non-returners
SAT - CR	562.5	526.3
SAT - M	580.8	538.7
SAT - W	556.2	516.8
HSGPA	3.6	3.4

- On average, returners had a SAT total score that was 97 points higher as compared to non-returners.

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Analyses & Results

Retention rates by:

- Academic characteristics (SAT, HSGPA)
- Student characteristics (Gender, Race/Ethnicity, Parental Income and Education)
  - Academic × Student Characteristics
- Institutional characteristics (Control, Size, Selectivity)
  - Academic × Institutional Characteristics

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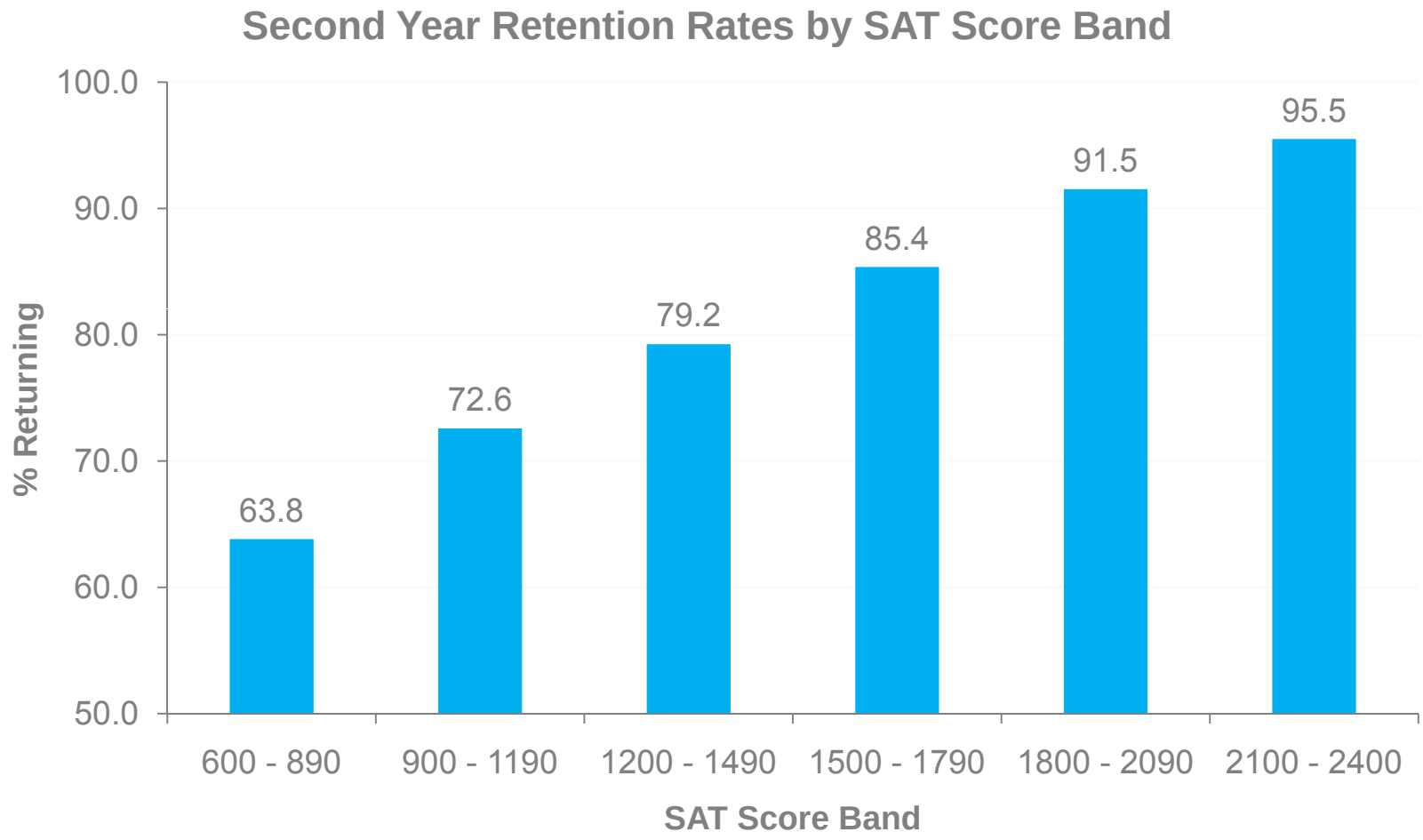
Retention Rates by Academic Characteristics



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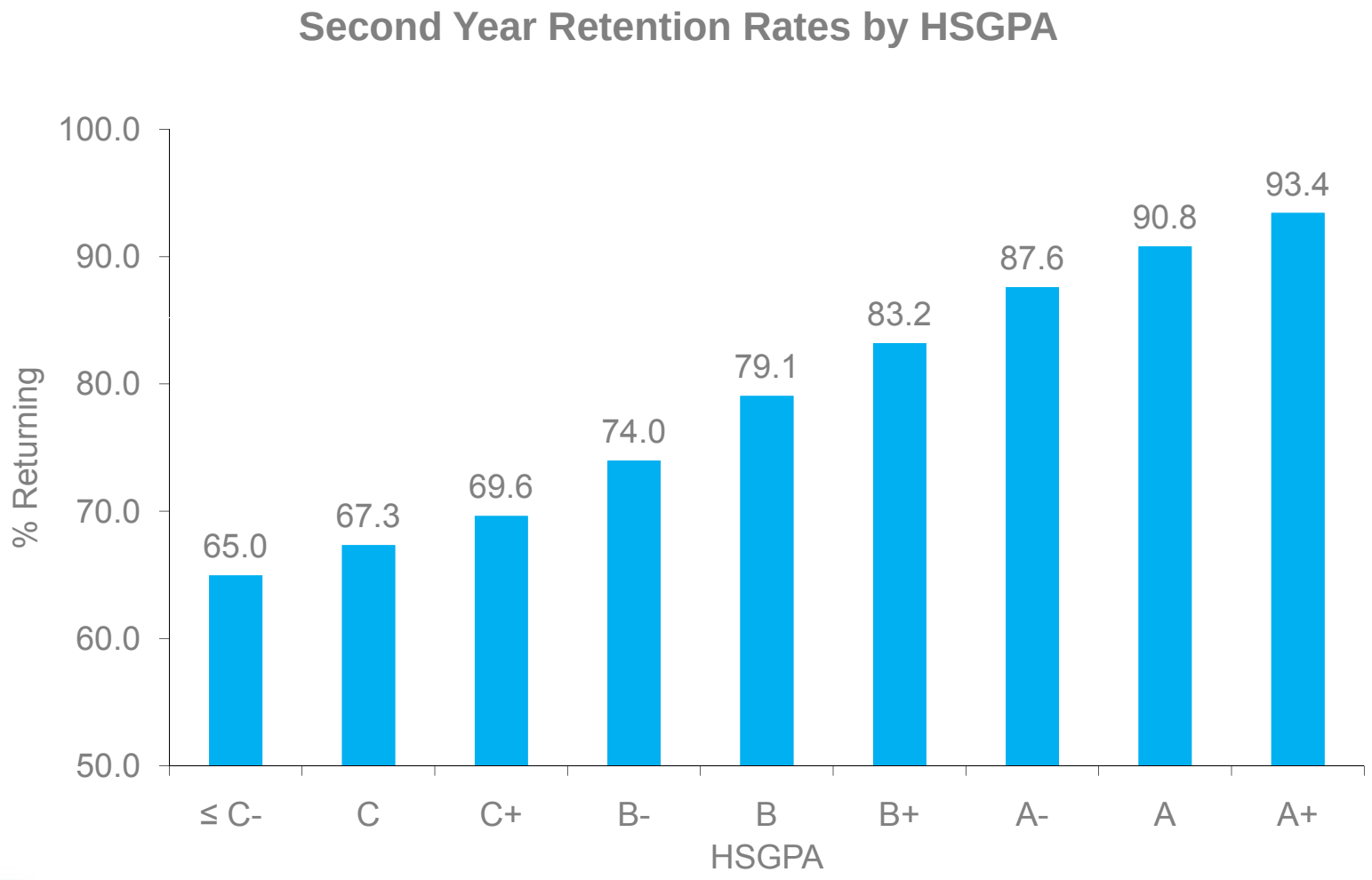
Retention Rates by Academic Characteristics



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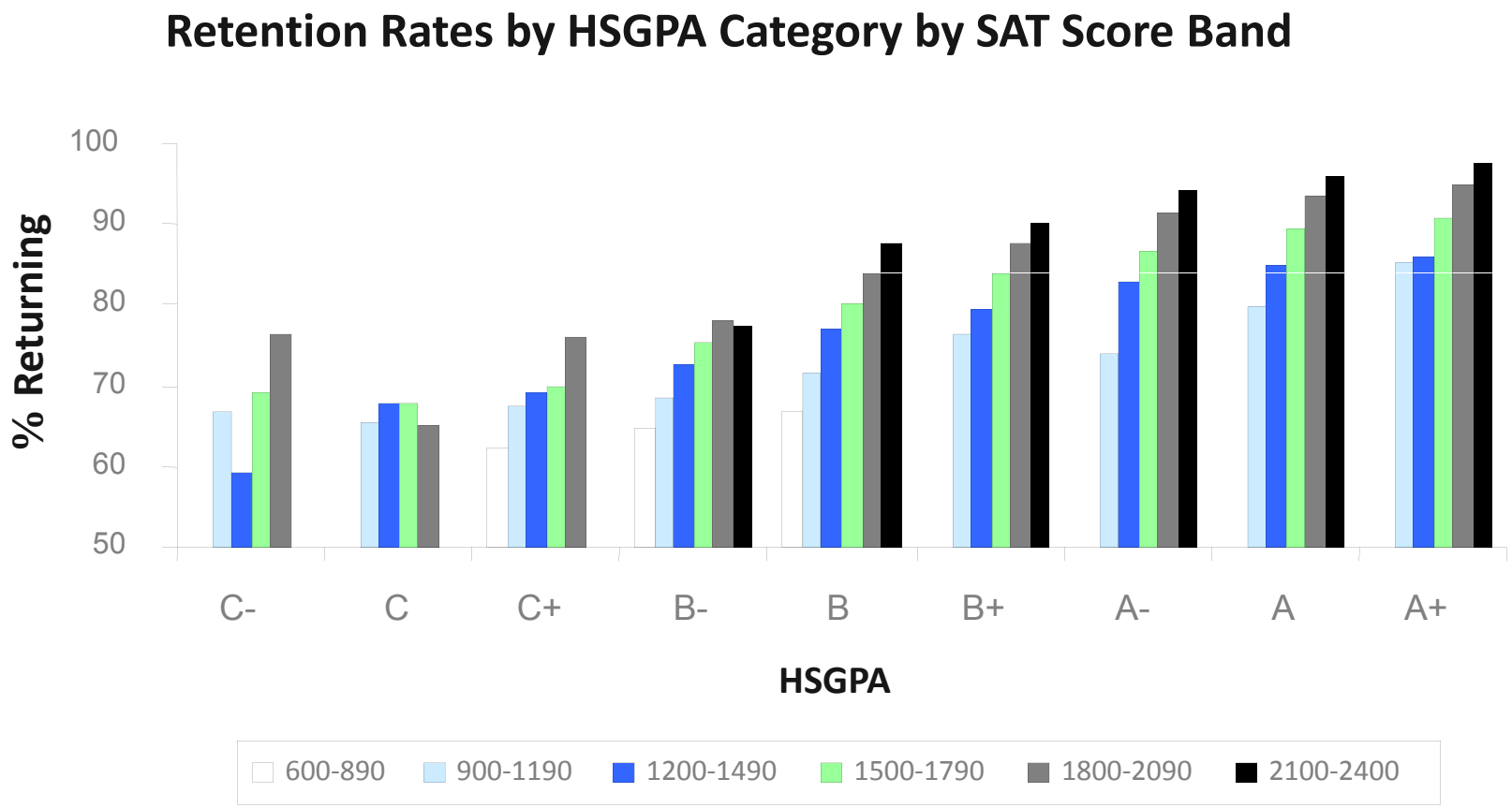
Even within HSGPA categories, SAT provided additional information…



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Retention Rates by Student Characteristics

- Gender: 86.3% - females; 85.7% - males
- Race/ethnicity: ranged from 89.3% for Asian students to 78.6% for American Indian students
- SES: As parental income and education increased, retention rates increased from 82% to 87%
- Differences in retention rates by student characteristics are minimized and, in some instances, eliminated when controlling for SAT scores.

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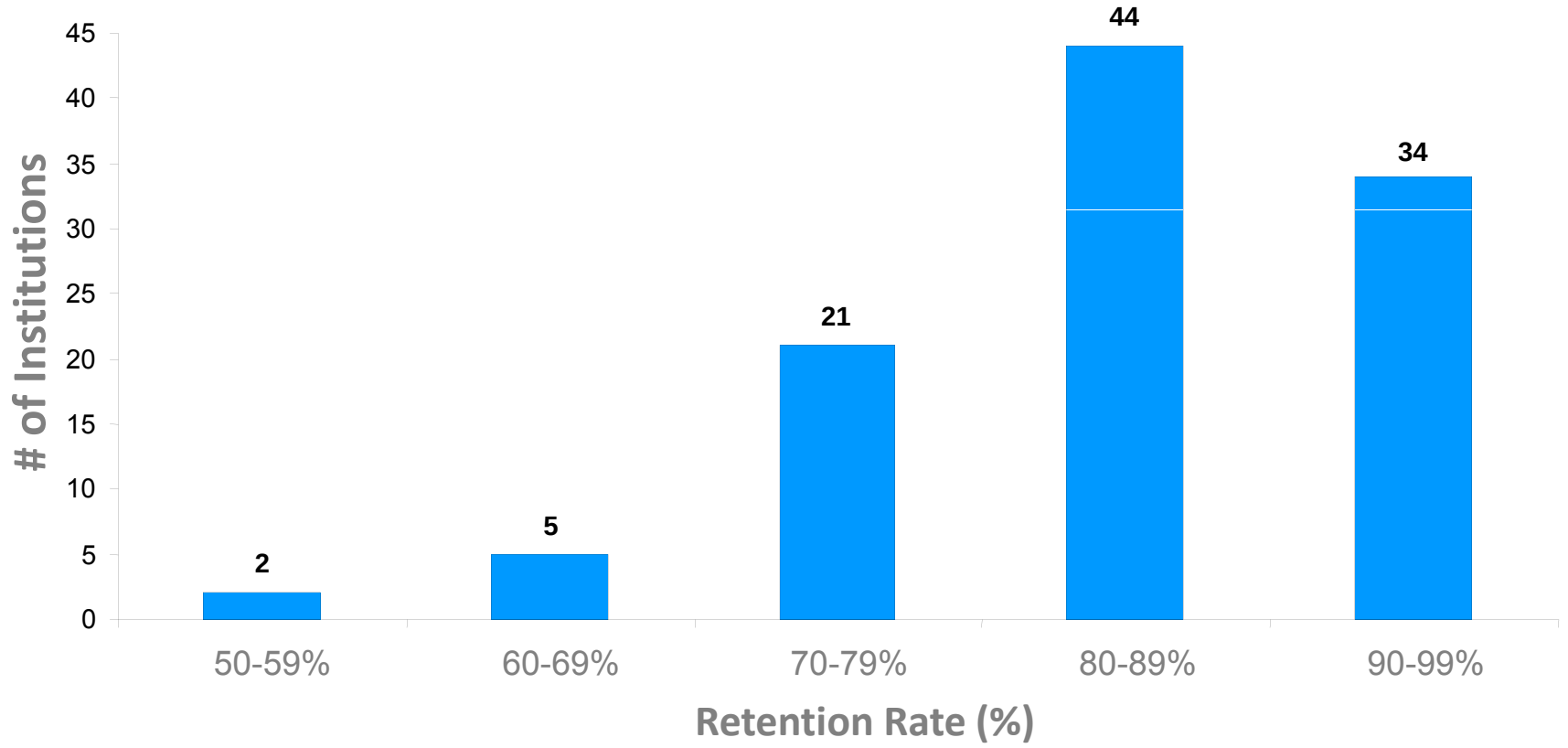
Retention Rates by Institutional Characteristics



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Retention Rates by Institutional Characteristics

Variable		Retention		
		n	Mean	SD
Overall		147,999	86.0	34.7
	Private	45,761	88.9	31.4
Control	Public	102,238	84.7	36.0
	Small	6,430	82.1	38.3
	Medium	30,110	86.1	34.6
	Large	41,851	84.9	35.8
Size	Very large	69,608	87.0	33.6
	Under 50%	22,848	93.5	24.7
	50% to 75%	84,784	85.7	35.1
Selectivity	Over 75%	40,367	82.5	38.0

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Summary

- Performance on the SAT is related to college retention
  - Retention rates by SAT score bands vary substantially with only 63.8% percent of low performers returning versus 95.5% of high performers
  - This is true even after controlling for HSGPA
- Retention rates do vary by student and institutional characteristics
  - This is partly attributable to differences in the academic achievement level

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Understanding Students with Discrepant SAT scores and HSGPA

- This study examines:
  - The frequency of students with discrepant HSGPA and SAT performance (difference ≥ 1 SD)
  - Whether certain students are disproportionately more likely to exhibit discrepant performance
  - Among those with discrepant performance, which measure is more indicative of college performance

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Distribution of Students by SAT-HSGPA Discrepant Groups

Discrepant Groups	Frequency	Percent
Higher HSGPA	26,094	17.4
Nondiscrepant	98,025	65.2
Higher SAT	26,258	17.5
Total	150,377	100.0

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Performance on Academic Measures by SAT-HSGPA Discrepant Groups

	Higher HSGPA		Nondiscrepant		Higher SAT	
Variable	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
SAT total	1468	177	1705	231	1871	247
SAT-CR	480	71	564	87	626	93
SAT-M	509	79	583	91	632	93
SAT-W	479	70	558	87	614	94
HSGPA	3.94	0.31	3.63	0.45	3.16	0.54
HS Rigor	2.24	1.85	2.98	2.07	3.30	2.11
FYGPA	2.91	0.69	3.01	0.69	2.90	0.76
Retention	86.8	33.8	88.3	32.2	86.4	34.3

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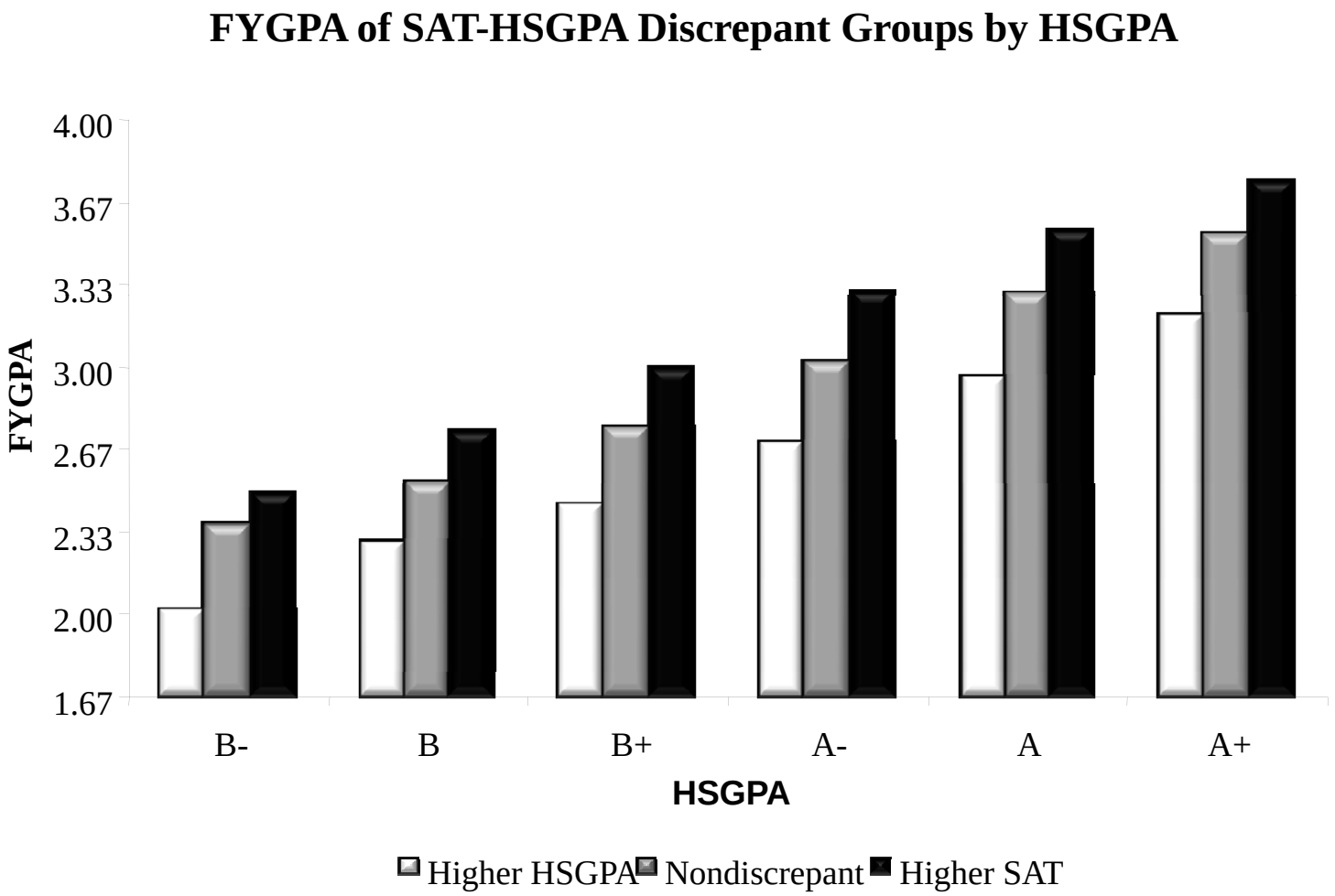
FYGPA of SAT-HSGPA Discrepant Groups by HSGPA



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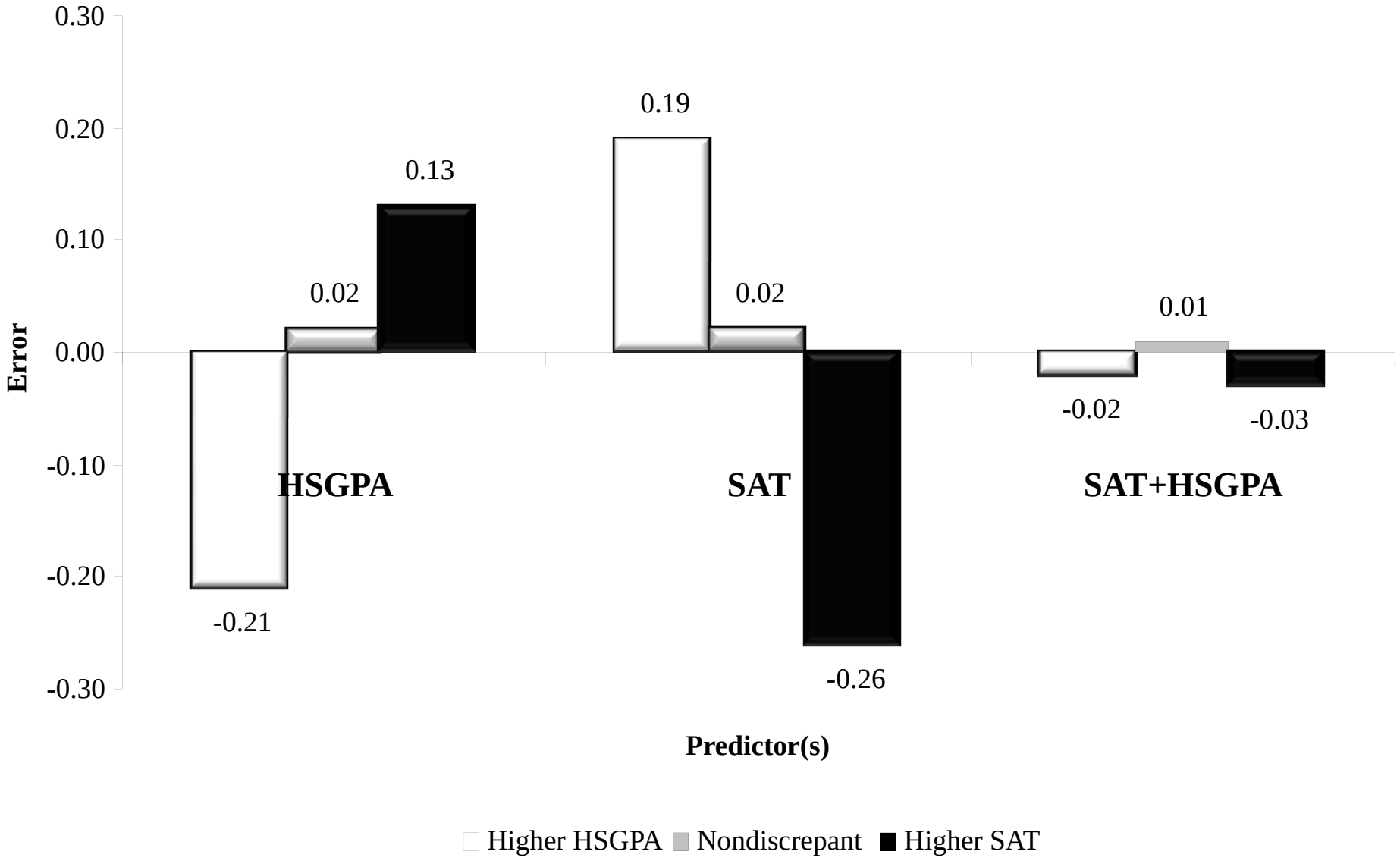
Average Overprediction (-) and Underprediction (+) of FYGPA for HSGPA and SAT by SAT-HSGPA Discrepant Groups



Summary

- Over one-third of students exhibited discrepant performance.
- Using only HSGPA for admission under-predicted college performance for those students who performed significantly higher on the SAT as compared to HSGPA.
- Results underscore the utility of using both HSGPA and test scores for admission decisions.

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Admitted Class Evaluation Service (ACES)

- The Admitted Class Evaluation Service (ACES) is a **free** online service that predicts how admitted students will perform at a college or university generally, and how successful students will be in specific classes.

http://professionals.collegeboard.com/higher-ed/validity/aces

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About ACES

- ACES offers two models of validity studies:
  - **Admission**
    - Predictive
  - **Placement**
    - Predictive
    - Concurrent

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Admission Validity Studies

- The primary purpose of an admission validity study is to validate measures used in admission decisions.
- Can determine how well admission criteria work alone and in combination with other predictors, *and* the most effective weighting for the predictors.
  - Success (the **criterion**) may be measured by college GPA
  - Relevant **predictors** may be
    - SAT scores – Critical Reading, Math, or Writing
    - High school GPA, or Class Rank
    - Interview scores, and
    - Other information

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Requesting an Admission Validity Study

- A minimum of 75 student records is required for an admission study.
- You may specify up to 5 additional predictors – either from ACES-supplied data or from your institution (provided that 75+ students in your sample have that additional variable).
- ACES automatically breaks down the results of your study on the basis of gender, race/ethnicity, and first language spoken (provided that there are 75+ students in the sample in at least 2 levels of the subgroup)
  - You may also specify 2 additional subgroups – either ACES-supplied (e.g. degree-level goal, ability rating in math), from your data (e.g. resident versus commuter), or a combination.

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Overview of ACES Process

- The institutional contact/submitter will:
  1. Click link on ACES web site for a new ACES study request: https://cbweb1s.collegeboard.org/aces/html/newrvs.html
  2. Enter contact info (name, email, position, institution, etc.)
  3. Design study (choose predictors, subgroups, etc.)
  4. Receive automatically e-mailed user account, password, and request number from ACES
  5. Login to submit data at this site: https://cbweb1s.collegeboard.org/aces/html/submit1.html
  6. Record all variable locations, indicate value labels, etc.
  7. Upload data file(s)
  8. ACES reports are returned to institutions 25 - 35 business days after the receipt of clean data.

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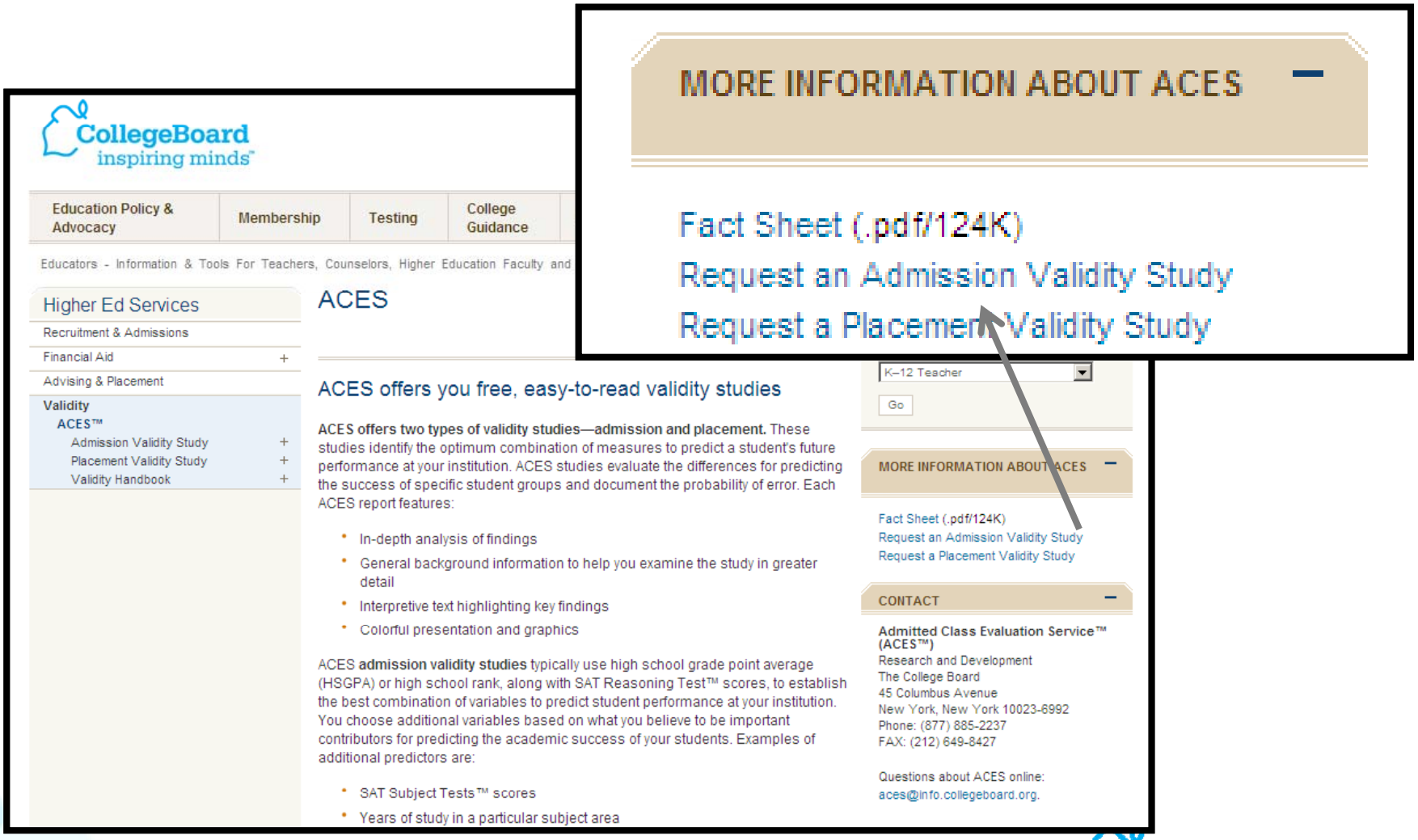
ACES Web Site – Requesting a Study



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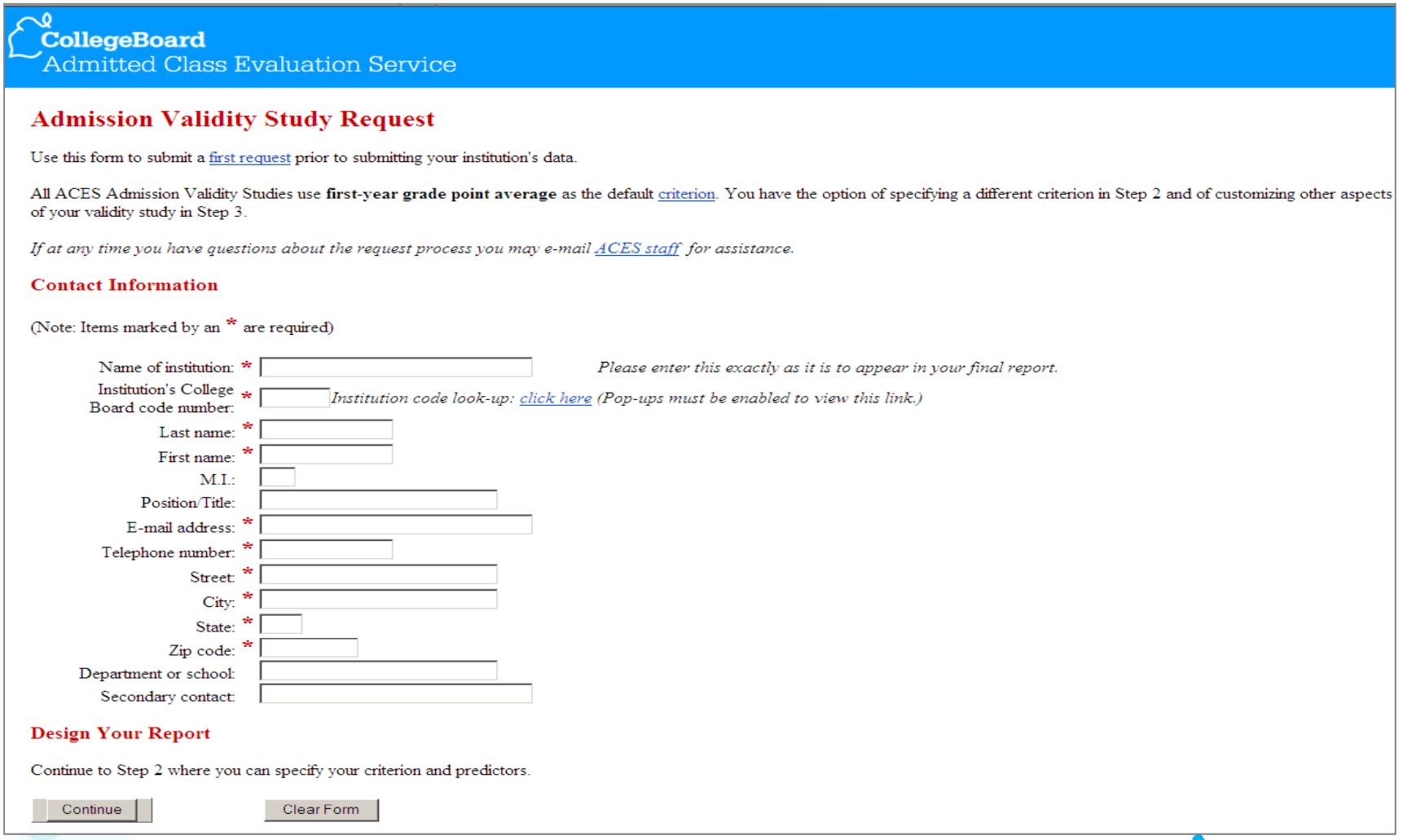
ACES Web Site – Requesting a Study
(contact information)



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Admitted Class Evaluation Service

Admission Validity Study Request

Use this form to submit a first request prior to submitting your institution's data.

All ACES Admission Validity Studies use **first-year grade point average** as the default criterion. You have the option of specifying a different criterion in Step 2 and of customizing other aspects of your validity study in Step 3.

If at any time you have questions about the request process you may e-mail ACES staff for assistance.

Contact Information

(Note: Items marked by an * are required)

Name of institution: * *Please enter this exactly as it is to appear in your final report.*
Institution's College Board code number: * *Institution code look-up: click here (Pop-ups must be enabled to view this link.)*
Last name: *
First name: *
M.I.:
Position/Title:
E-mail address: *
Telephone number: *
Street: *
City: *
State: *
Zip code: *
Department or school:
Secondary contact:

Design Your Report

Continue to Step 2 where you can specify your criterion and predictors.

Continue Clear Form

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Study Design
Specify Criterion; Specify Predictors – HS measure

Specify a Criterion

You may use the default criterion, first-year grade point average, or type in your own. Remember to type all information **exactly as you would like it to appear in your final report.**

(limit of 20 characters)

Specify Predictors

All ACES Admission Validity Studies use **high school grade point average (GPA) or class rank, SAT Reasoning Test scores** and **SAT Subject Test scores (optional)** as predictors. Please specify below your particular preferences for how these predictors should be used in your study.

Specify GPA or Class Rank

All Admission Validity Studies use either **high school GPA** or **high school class rank** as predictors. Please indicate below which predictor you would prefer. You must also specify if you will be providing this information or if you want to use ACES-supplied data.

Type of high school data *	Source of data *
○ HSGPA ○ HS rank	○ from data supplied by your institution ○ from ACES-supplied data

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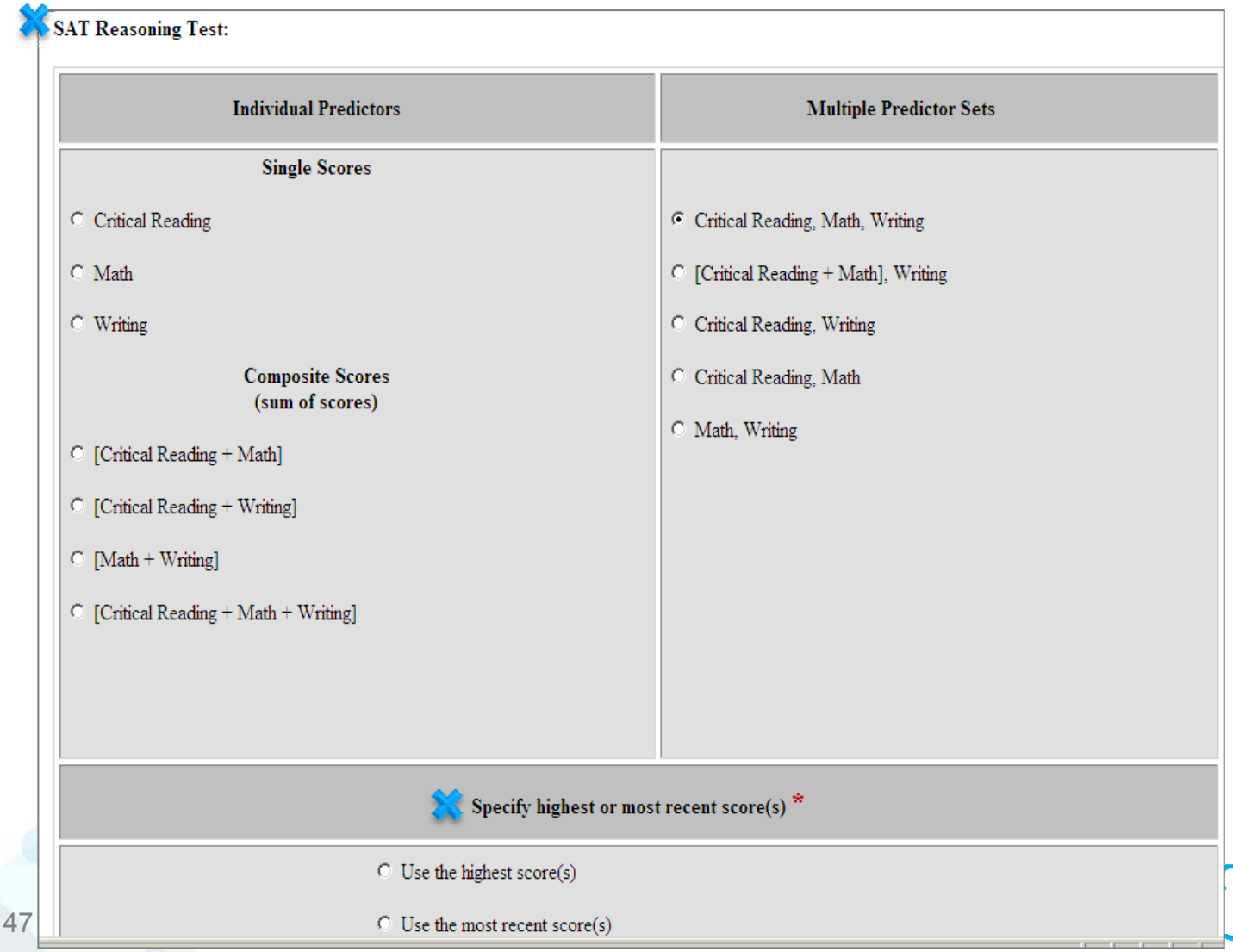
Specify Predictors - SAT Scores



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Specify Predictors - SAT Subject Tests

Using score(s) on specific SAT Subject Test(s)		- OR -	Using highest or average SAT Subject Tests
Select first SAT Subject Test predictor			**Select first SAT Subject Test predictor**
English ○ Literature **History & Social Sciences** ○ U. S. History ○ World History **Mathematics** ○ Mathematics Level 1 ○ Mathematics Level 2 **Science** ○ Biology ○ Chemistry ○ Physics	**Languages** ○ Chinese with Listening ○ French ○ French with Listening ○ German ○ German with Listening ○ Modern Hebrew ○ Italian ○ Japanese with Listening ○ Korean with Listening ○ Latin ○ Spanish ○ Spanish with Listening	- OR -	○ Highest Non-Language SAT Subject Test ○ Highest of All SAT Subject Tests ○ Average of Two Highest Non-Language SAT Subject Tests ○ Average of Two Highest SAT Subject Tests

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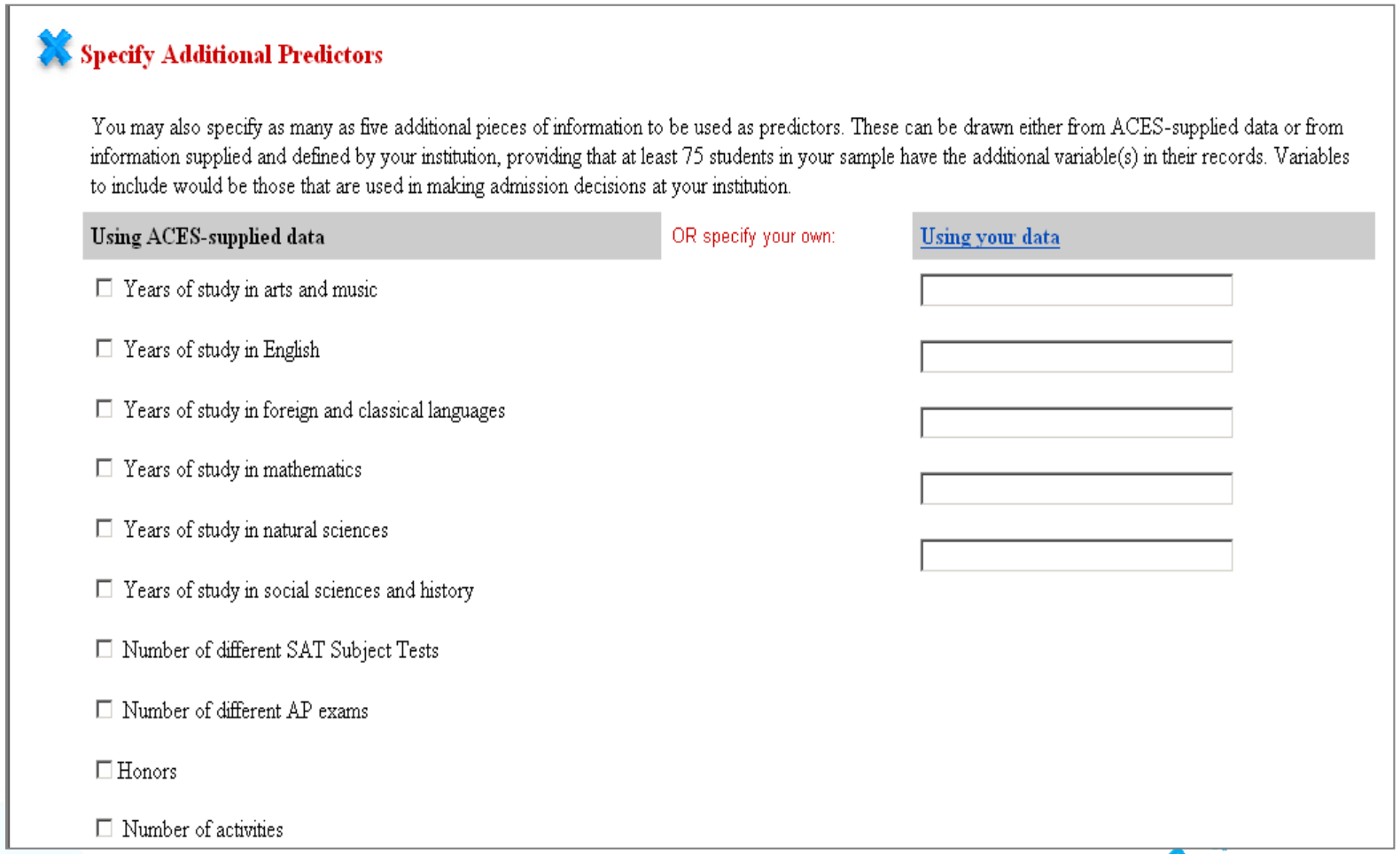
Specify Additional Predictors



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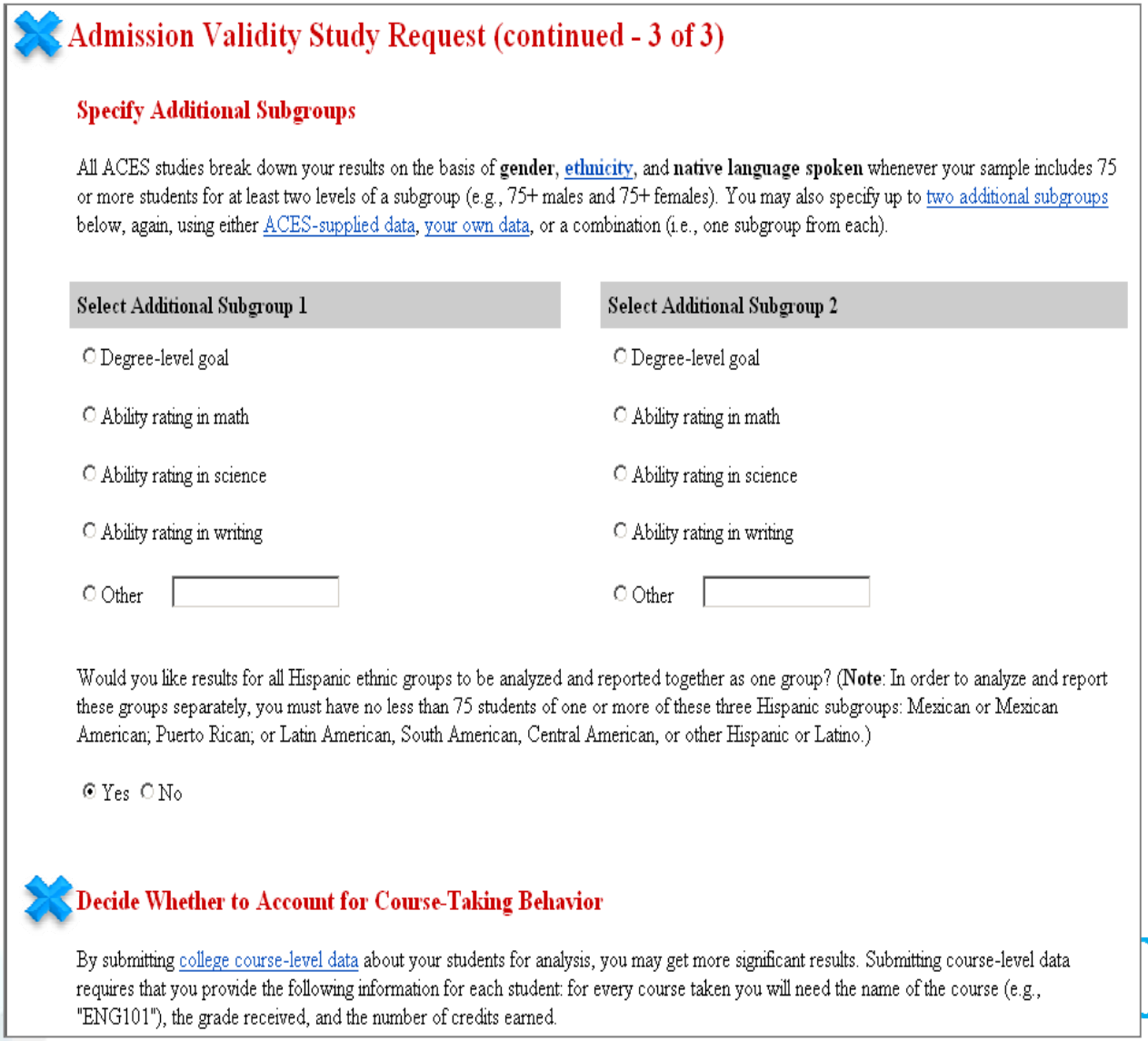
Examine Subgroups; Include Coursework



Admission Validity Study Request (continued - 3 of 3)

Specify Additional Subgroups

All ACES studies break down your results on the basis of **gender**, ethnicity, and **native language spoken** whenever your sample includes 75 or more students for at least two levels of a subgroup (e.g., 75+ males and 75+ females). You may also specify up to two additional subgroups below, again, using either ACES-supplied data, your own data, or a combination (i.e., one subgroup from each).

Select Additional Subgroup 1	Select Additional Subgroup 2
○ Degree-level goal	○ Degree-level goal
○ Ability rating in math	○ Ability rating in math
○ Ability rating in science	○ Ability rating in science
○ Ability rating in writing	○ Ability rating in writing
○ Other	○ Other

Would you like results for all Hispanic ethnic groups to be analyzed and reported together as one group? (**Note**: In order to analyze and report these groups separately, you must have no less than 75 students of one or more of these three Hispanic subgroups: Mexican or Mexican American; Puerto Rican; or Latin American, South American, Central American, or other Hispanic or Latino.)

◉ Yes ○ No

Decide Whether to Account for Course-Taking Behavior

By submitting college course-level data about your students for analysis, you may get more significant results. Submitting course-level data requires that you provide the following information for each student: for every course taken you will need the name of the course (e.g., "ENG101"), the grade received, and the number of credits earned.

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ACES Data Submission

- Choose from a variety of common formats including:
  - Excel
  - Access
  - SPSS
  - SAS
  - ASCII delimited format
- Upload the file directly from a PC to ACES
- ACES automatically encrypts the data during transmission to protect confidentiality

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Submitting Data (cont.)– Course grades, Number of files

Submitting Your Data (continued)

If at any time you have questions about the data submission process you may e-mail ACES staff for assistance.

Course Grade Information

You indicated on your request that you would be submitting college course-level data. Please answer the questions below specifying how you will be submitting these data.

Will grades appear in numeric or letter form?

- (•) letter grades
- ( ) numeric grades

What is the range of possible numeric grades, or numeric equivalents of alphabetic grades, at your school?

Lowest? [ ] Highest? [ ]

What is the maximum number of courses per student for which grades will be submitted?

[- Please Select - ▼]

Data File Information

When providing course grade data, you have the option of submitting a single file with all student data or submitting two separate files, one with admission-related data, the other with course grade data. When submitting separate files, certain requirements and restrictions and file formatting rules apply, which you may want to review.

In how many data files (and if two, in what format) will you be submitting data for this study request?

- (•) submitting one file (horizontal format)
- ( ) submitting two files (both in horizontal format)
- ( ) submitting two files (with course grade file in vertical format)

[Continue] [Clear All Values]

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Submitting Data (cont.) – Labeling Info

Submitting Your Data (continued)

If at any time you have questions about the data submission process you may e-mail ACES staff for assistance.

About Your Data File

Please select the year that students represented in your data entered college 2008 (required)

Please indicate what you would like to call the data file you will be submitting. This should be a simple descriptive label, e.g., "Entering Class of Fall 2008."

File label: (required)

Please specify how your student name is formatted: (required)

- In separate fields: first | middle | last (any order; e.g., Public | John | Q) (recommended)
- In a single field: last, first, middle (e.g., Public, John Q.)
- In a single field: first, middle, last (e.g., John Q. Public)

Specify your file type below: (required)

- Microsoft EXCEL Spreadsheet
- Tab-Delimited ASCII
- Fixed Length ASCII
- Microsoft ACCESS Database
- SPSS Portable File
- Comma-Delimited ASCII (CSV)
- SAS Transport File

Continue | Clear all values

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Submitting Data (cont.) - variable locations/values

Delimited (tab, comma) ASCII or XLS (Excel) Layout Table

	Label	Excel Column No. or ASCII Var. Position No.	Min.Value	Max.Value
First Name *				
Middle Name (Optional)				
Last Name *				
Gender *				
Date of Birth *				
SSN *				
Home ZIP (strongly recommended)				
HS Code (strongly recommended)				
Criterion *	First-Year GPA			
Cumulative GPA (if other than First-Year GPA) *				
Retention Indicator *				
Major area of study (when available)				
University-Assigned Student ID (required) *				
Add'l Predictor 1	Matrix			
Add'l Predictor 2	Need			
Add'l Predictor 3	Filed Fafsa			
Add'l Predictor 4	Residency			
Add'l Predictor 5	WUE			
Add'l Subgroup 1	Ability rating in math	From ACES		
Add'l Subgroup 2	Ability rating in science	From ACES		
HS Avg.*				
Course 1 Label (abbreviation) *				
Course 2 Label (abbreviation) *				

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Retrieving an ACES Study

- ACES notifies the file submitter by e-mail when the study is completed
- The document is password protected for confidentiality and is encrypted until downloaded at the institution
- Results of ACES studies are confidential and only released to the institution that requested the study
- Studies may also be mailed to an institution on a CD

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Inside of the ACES Admission Validity Report

- Information on the most useful predictors of success at an institution
- Optimal equations for predicting the success of future students
- A list of the students at risk

And…

- A matched student-level data set for use in follow-up studies

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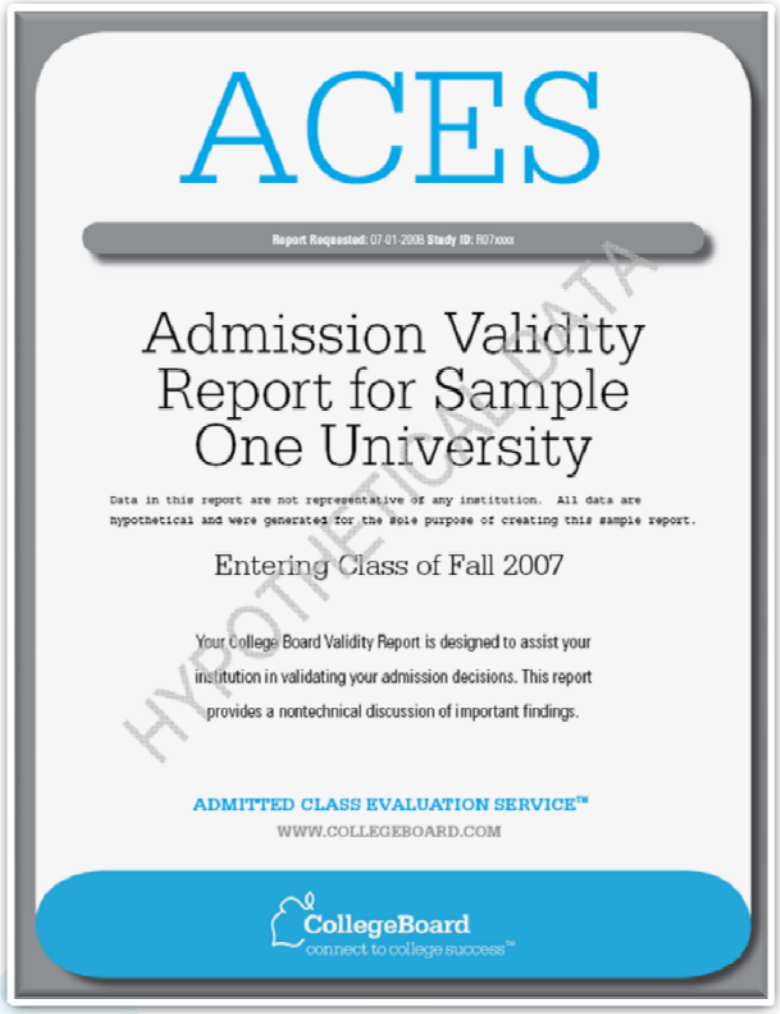
ACES Admission Validity Report



ACES

Report Requested: 07-01-2008 Study ID: R07xxxx

Admission Validity Report for Sample One University

Data in this report are not representative of any institution. All data are hypothetical and were generated for the sole purpose of creating this sample report.

Entering Class of Fall 2007

Your College Board Validity Report is designed to assist your institution in validating your admission decisions. This report provides a nontechnical discussion of important findings.

ADMITTED CLASS EVALUATION SERVICE™

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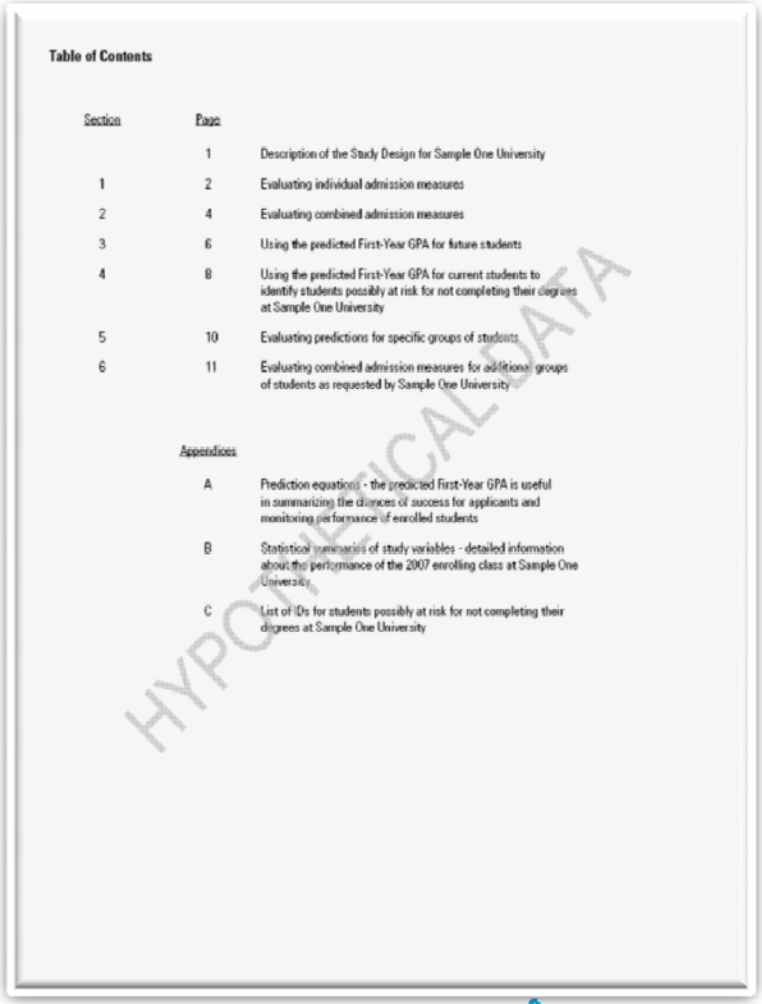
HYPOTHETICAL DATA



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HYPOTHETICAL DATA

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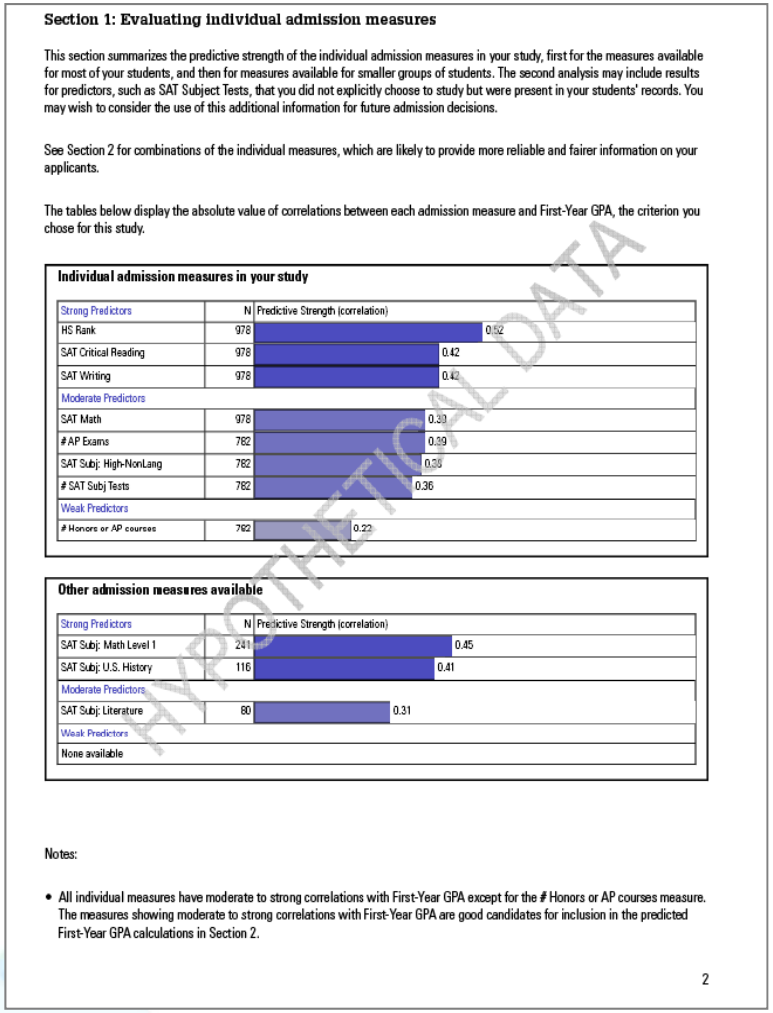
Evaluating Admission Measures

Section 1: Evaluating individual admission measures



Section 1: Evaluating individual admission measures

This section summarizes the predictive strength of the individual admission measures in your study, first for the measures available for most of your students, and then for measures available for smaller groups of students. The second analysis may include results for predictors, such as SAT Subject Tests, that you did not explicitly choose to study but were present in your students' records. You may wish to consider the use of this additional information for future admission decisions.

See Section 2 for combinations of the individual measures, which are likely to provide more reliable and fairer information on your applicants.

The tables below display the absolute value of correlations between each admission measure and First-Year GPA, the criterion you chose for this study.

Individual admission measures in your study

Strong Predictors	N	Predictive Strength (correlation)
HS Rank	978	0.52
SAT Critical Reading	978	0.42
SAT Writing	978	0.42
Moderate Predictors		
SAT Math	978	0.33
# AP Exams	782	0.39
SAT Subj: High-NonLang	782	0.38
# SAT Subj Tests	782	0.36
Weak Predictors		
# Honors or AP courses	782	0.22

Other admission measures available

Strong Predictors	N	Predictive Strength (correlation)
SAT Subj: Math Level 1	241	0.45
SAT Subj: U.S. History	116	0.41
Moderate Predictors		
SAT Subj: Literature	80	0.31
Weak Predictors		
None available		

Notes:

- All individual measures have moderate to strong correlations with First-Year GPA except for the # Honors or AP courses measure. The measures showing moderate to strong correlations with First-Year GPA are good candidates for inclusion in the predicted First-Year GPA calculations in Section 2.

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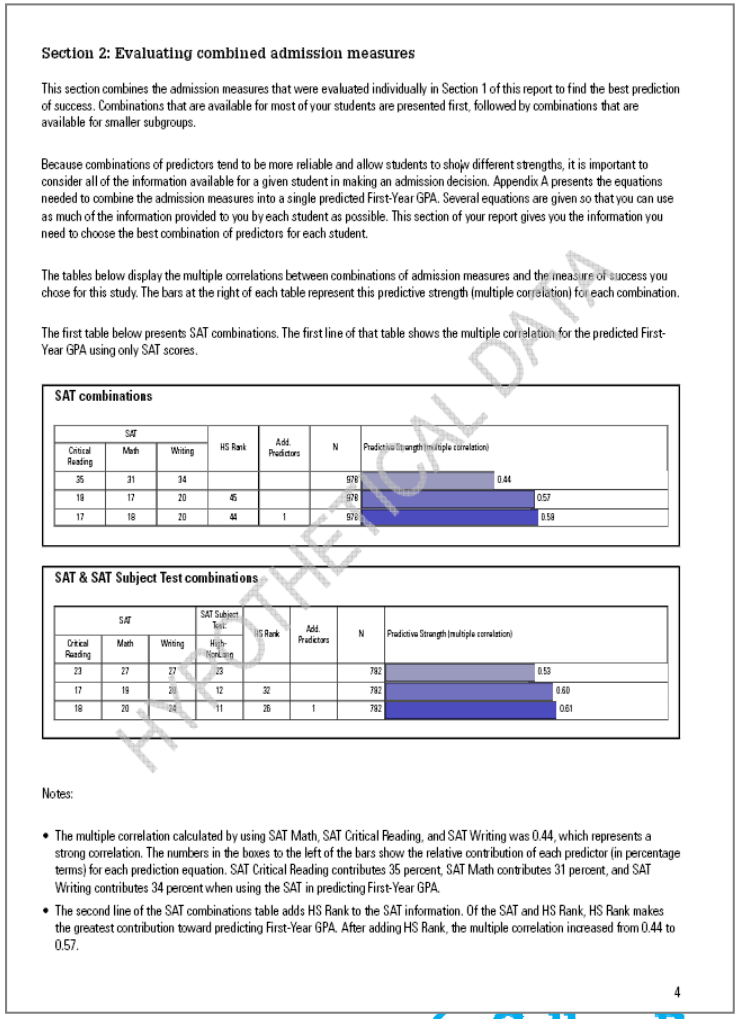
HYPOTHETICAL DATA

Section 2: Evaluating combined admission measures



Section 2: Evaluating combined admission measures

This section combines the admission measures that were evaluated individually in Section 1 of this report to find the best prediction of success. Combinations that are available for most of your students are presented first, followed by combinations that are available for smaller subgroups.

Because combinations of predictors tend to be more reliable and allow students to show different strengths, it is important to consider all of the information available for a given student in making an admission decision. Appendix A presents the equations needed to combine the admission measures into a single predicted First-Year GPA. Several equations are given so that you can use as much of the information provided to you by each student as possible. This section of your report gives you the information you need to choose the best combination of predictors for each student.

The tables below display the multiple correlations between combinations of admission measures and the measure of success you chose for this study. The bars at the right of each table represent this predictive strength (multiple correlation) for each combination.

The first table below presents SAT combinations. The first line of that table shows the multiple correlation for the predicted First-Year GPA using only SAT scores.

SAT combinations

SAT			HS Rank	Add. Predictors	N	Predictive Strength (multiple correlation)
Critical Reading	Math	Writing				
35	31	34			978	0.44
18	17	20	45		978	0.57
17	18	20	44	1	978	0.58

SAT & SAT Subject Test combinations

SAT			SAT Subject Tests:	HS Rank	Add. Predictors	N	Predictive Strength (multiple correlation)
Critical Reading	Math	Writing	High-NonLang				
23	27	27	23			782	0.53
17	19	20	12	32		782	0.60
18	20	21	11	26	1	782	0.61

Notes:

- The multiple correlation calculated by using SAT Math, SAT Critical Reading, and SAT Writing was 0.44, which represents a strong correlation. The numbers in the boxes to the left of the bars show the relative contribution of each predictor (in percentage terms) for each prediction equation. SAT Critical Reading contributes 35 percent, SAT Math contributes 31 percent, and SAT Writing contributes 34 percent when using the SAT in predicting First-Year GPA.
- The second line of the SAT combinations table adds HS Rank to the SAT information. Of the SAT and HS Rank, HS Rank makes the greatest contribution toward predicting First-Year GPA. After adding HS Rank, the multiple correlation increased from 0.44 to 0.57.

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HYPOTHETICAL DATA

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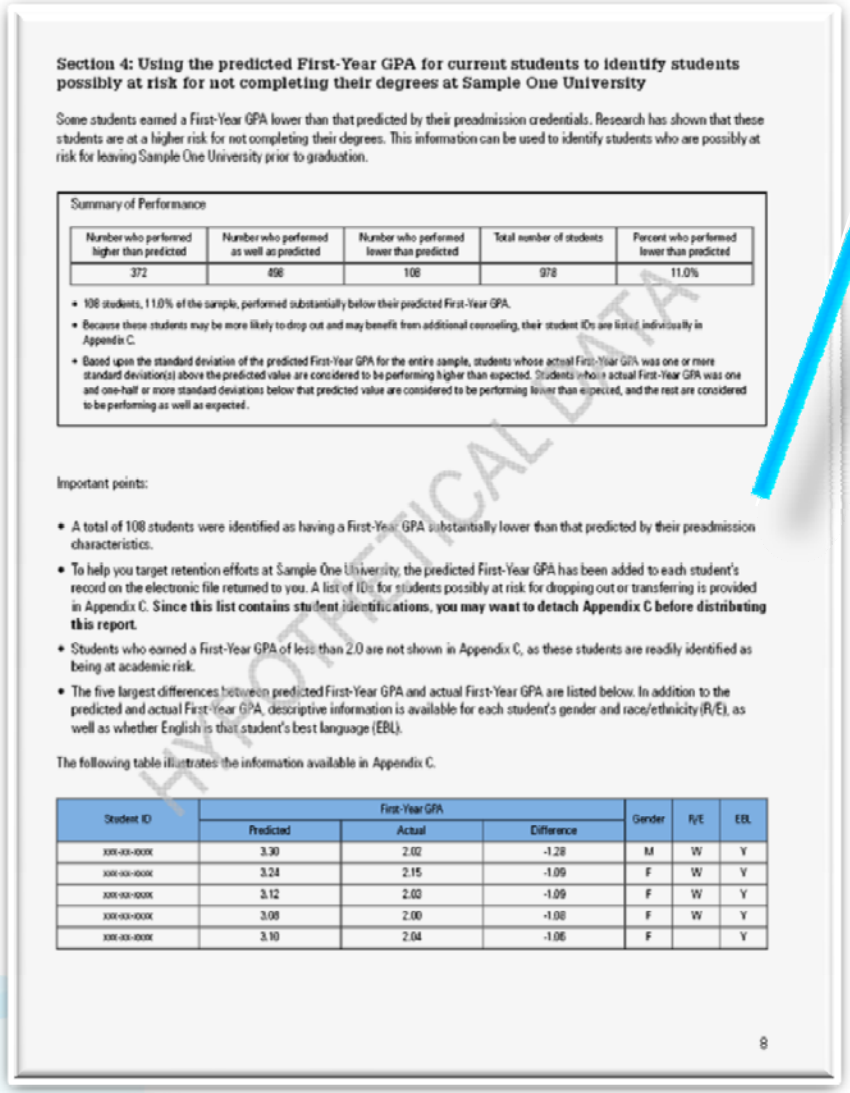
Identifying Students at Risk



Section 4: Using the predicted First-Year GPA for current students to identify students possibly at risk for not completing their degrees at Sample One University

Some students earned a First-Year GPA lower than that predicted by their preadmission credentials. Research has shown that these students are at a higher risk for not completing their degrees. This information can be used to identify students who are possibly at risk for leaving Sample One University prior to graduation.

Summary of Performance

Number who performed higher than predicted	Number who performed as well as predicted	Number who performed lower than predicted	Total number of students	Percent who performed lower than predicted
372	498	108	978	11.0%

- 108 students, 11.0% of the sample, performed substantially below their predicted First-Year GPA.
- Because these students may be more likely to drop out and may benefit from additional counseling, their student IDs are listed individually in Appendix C.
- Based upon the standard deviation of the predicted First-Year GPA for the entire sample, students whose actual First-Year GPA was one or more standard deviation(s) above the predicted value are considered to be performing higher than expected. Students whose actual First-Year GPA was one and one-half or more standard deviations below that predicted value are considered to be performing lower than expected, and the rest are considered to be performing as well as expected.

Important points:

- A total of 108 students were identified as having a First-Year GPA substantially lower than that predicted by their preadmission characteristics.
- To help you target retention efforts at Sample One University, the predicted First-Year GPA has been added to each student's record on the electronic file returned to you. A list of IDs for students possibly at risk for dropping out or transferring is provided in Appendix C. **Since this list contains student identifications, you may want to detach Appendix C before distributing this report.**
- Students who earned a First-Year GPA of less than 2.0 are not shown in Appendix C, as these students are readily identified as being at academic risk.
- The five largest differences between predicted First-Year GPA and actual First-Year GPA are listed below. In addition to the predicted and actual First-Year GPA, descriptive information is available for each student's gender and race/ethnicity (R/E), as well as whether English is that student's best language (EBL).

The following table illustrates the information available in Appendix C.

Student ID	First-Year GPA			Gender	R/E	EBL
	Predicted	Actual	Difference			
xxx-xx-xxxx	3.30	2.02	-1.28	M	W	Y
xxx-xx-xxxx	3.24	2.15	-1.09	F	W	Y
xxx-xx-xxxx	3.12	2.02	-1.09	F	W	Y
xxx-xx-xxxx	3.08	2.00	-1.08	F	W	Y
xxx-xx-xxxx	3.10	2.04	-1.06	F		Y

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HYPOTHETICAL DATA

To help you target retention efforts at Sample One University, the predicted First-Year GPA has been added to each student's record on the electronic file returned to you. A list of IDs for students possibly at risk for dropping out or transferring is provided in Appendix C.

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Questions?

- Thank you!
- To access College Board research and reports: www.collegeboard.org/research
- Feel free to email me with questions at eshaw@collegeboard.org
- Researchers are encouraged to freely express their professional judgment. Therefore, points of view or opinions stated in College Board presentations do not necessarily represent official College Board position or policy.

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