College Sports Project

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Overview: Purpose of College Sports Project, Center for Data Collection and Analysis:

The primary purpose of the CSP database is to enable participating colleges and universities to quantify student athletes' academic outcomes in terms of their "representativeness," and to track institutional changes over time.

These data will not be used to "police" institutional behavior. They will be provided to the president who may find them helpful in meeting institutional goals. Responsible tracking of outcomes that colleges and universities care about is increasingly recognized as a "best practice" in higher education.

The Mellon Foundation's experience suggests that research is an important tool, not only for uncovering shortcomings and monitoring trends, but also for documenting and communicating successes.

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Research questions and goals:

- **How "representative" are student athletes of their own student bodies, with regard to academic outcomes?**
- **How do subgroups (gender, race, recruiting status, types of colleges) of students compare in their representative-ness?**
- **Provide useful information to college Presidents about their own institutions, some in a broader context**
- **Provide similar data to 4 participating athletic conferences**
- **How is the picture changing through time?**
- **Can we "explain" the differences in academic outcomes that we observe for various institutions and student subgroups?**
- **Do athletes achieve at a level expected, given their academic qualifications and demographic characteristics?**

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What data are collected?

- **Student incoming characteristics such as high school class rank, standardized test scores, sport recruitment, high school**
- **Student demographics such as gender, race and citizenship**
- **College experiences such as athletic participation, college GPA and current college class level**
- **Student identifying information: name, date of birth and permanent home address**
- **These data are augmented by information from other national databases—in 2008 College Board Data about high school quality was received.**

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How are data assembled and submitted?

- **Institutions establish a primary CPS contact, usually an IR officer, who works with admissions and athletics staff on campus to assemble the data file.**

- **Data are submitted to Northwestern through a secure electronic site and are protected behind several firewalls and encrypted.**

- **Once received, data are extensively cleaned by CSP staff prior to analyses to identify and correct inconsistencies between years at the student and institution level.**

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Data for this talk:

- **37,097 students at 71 NCAA Division-III institutions**
- **6 other participating institutions lacked data for the underperformance analysis**
- **<u>All</u> students entering these colleges between July 1, 2005 and June 30, 2006**
- **Data collected in winter 2008 after 2 years of tracking**
- **Admissions data on this cohort collected in winter 2007**

Technical Note: Many of our analyses are in the percentile class rank scale (0 to 100), but this presentation uses only 4pt. GPAs.

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Summary of Some Key Findings
Descriptive information about this data set:

Counts and Mean GPA for Gender x Recruiting Status

	Non-athlete	Recruited	Non-recruited	Totals
Male	10,279 **3.02**	3,946 **2.83**	1,752 **3.00**	15,977 **2.97**
Female	16,379 **3.22**	2,808 **3.17**	1,933 **3.23**	21,120 **3.22**

Combined SAT and HS Standing for Gender x Recruiting Status

	Non-athlete	Recruited	Non-recruited	Totals
Male	**1262** 1.59	**1179** 1.34	**1248** 1.61	**1240** 1.53
Female	**1231** 1.86	**1199** 1.81	**1249** 1.98	**1229** 1.86

For technical reasons, HS standing is recorded as decile class rank in a logistic scale. Its only use today is as a predictor in the regression model that leads to estimates of underperformance.

Let's take a look at GPAs…

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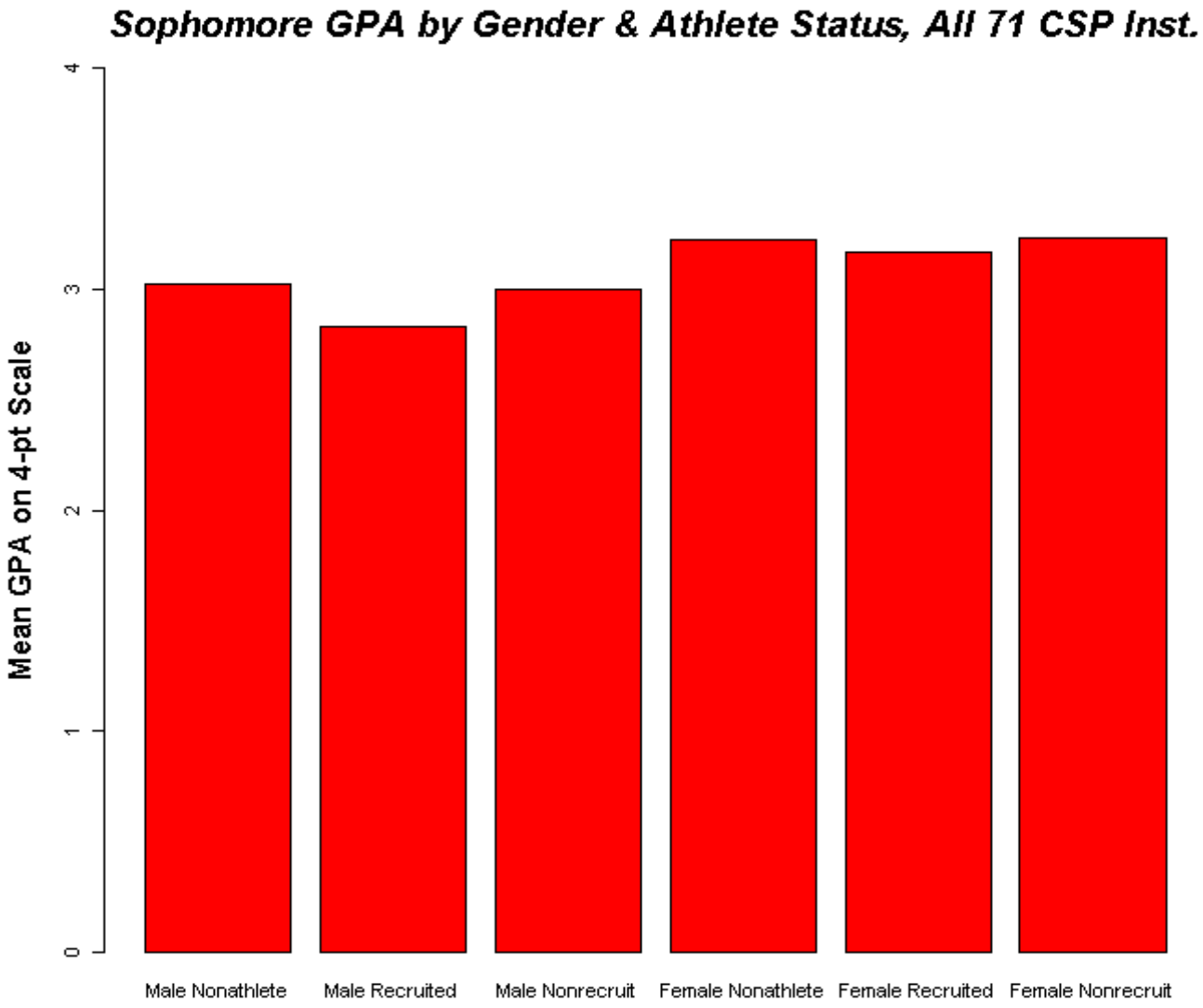
Mean GPA for Sophomore by Gender and Athlete Status



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Broad Findings About Students from NCAA D-III

1. Intercollegiate athletes generally have lower college grades than non-athletes at the same institution.

2. Male students generally have lower college grades than female students, and athletes differ from non-athletes by a wider margin for males than for females.

3. The majority of athletes are recruited. The non-recruited athletes perform better academically than do the recruited athletes. Women non-recruited athletes often do as well as and sometimes better than non-athletes.

4. When students entered college, males had higher SATs but lower high school class rank than females. Recruited athletes have lower SATs, lower grades than non-athletes.

Let's take a closer look using graphical displays, primarily.

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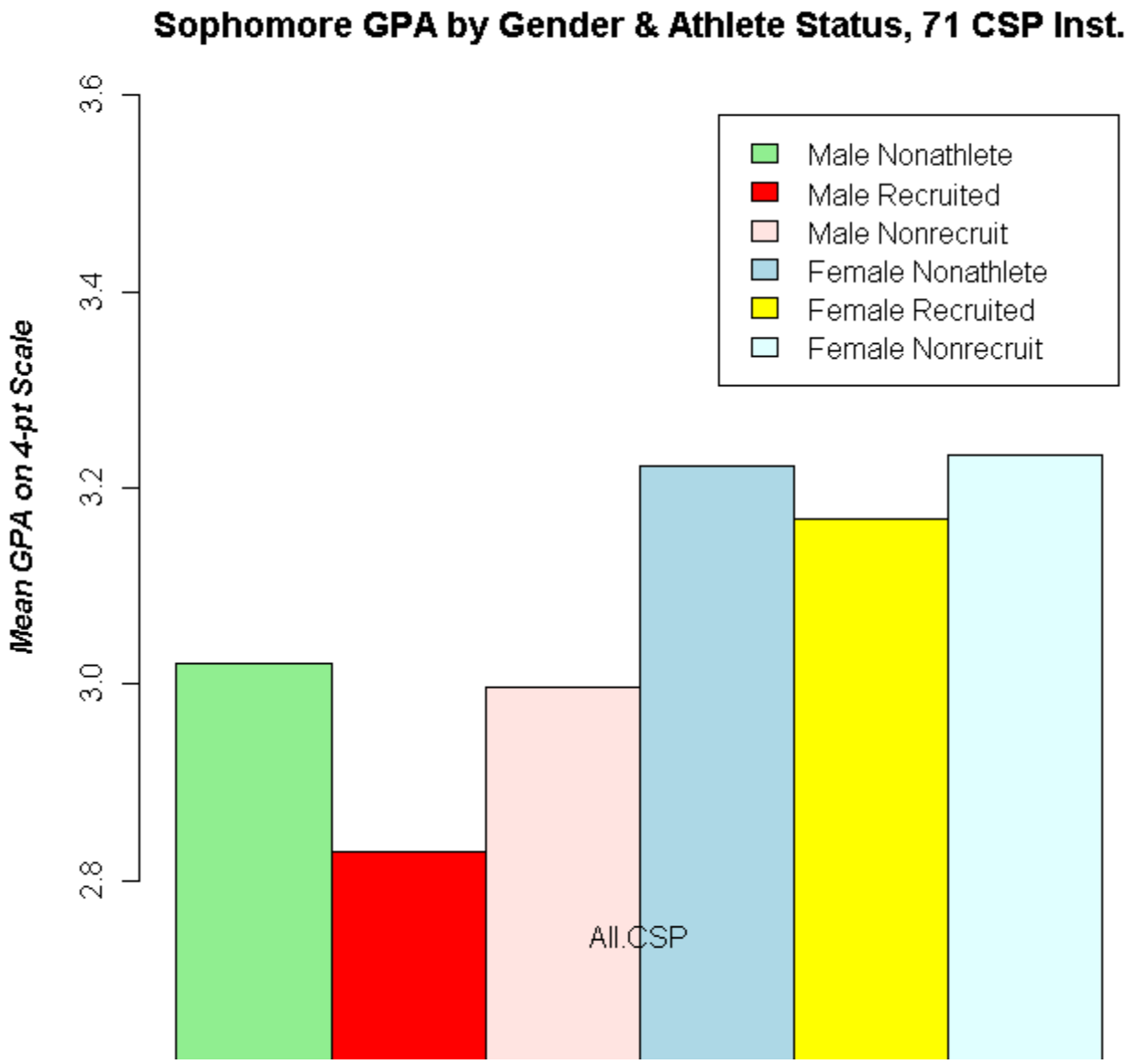

Assessing Academic Underperformance

Can we "explain" the GPA differences using what we know about students when they entered college? One predictor variable is a student's combined SAT from high school.

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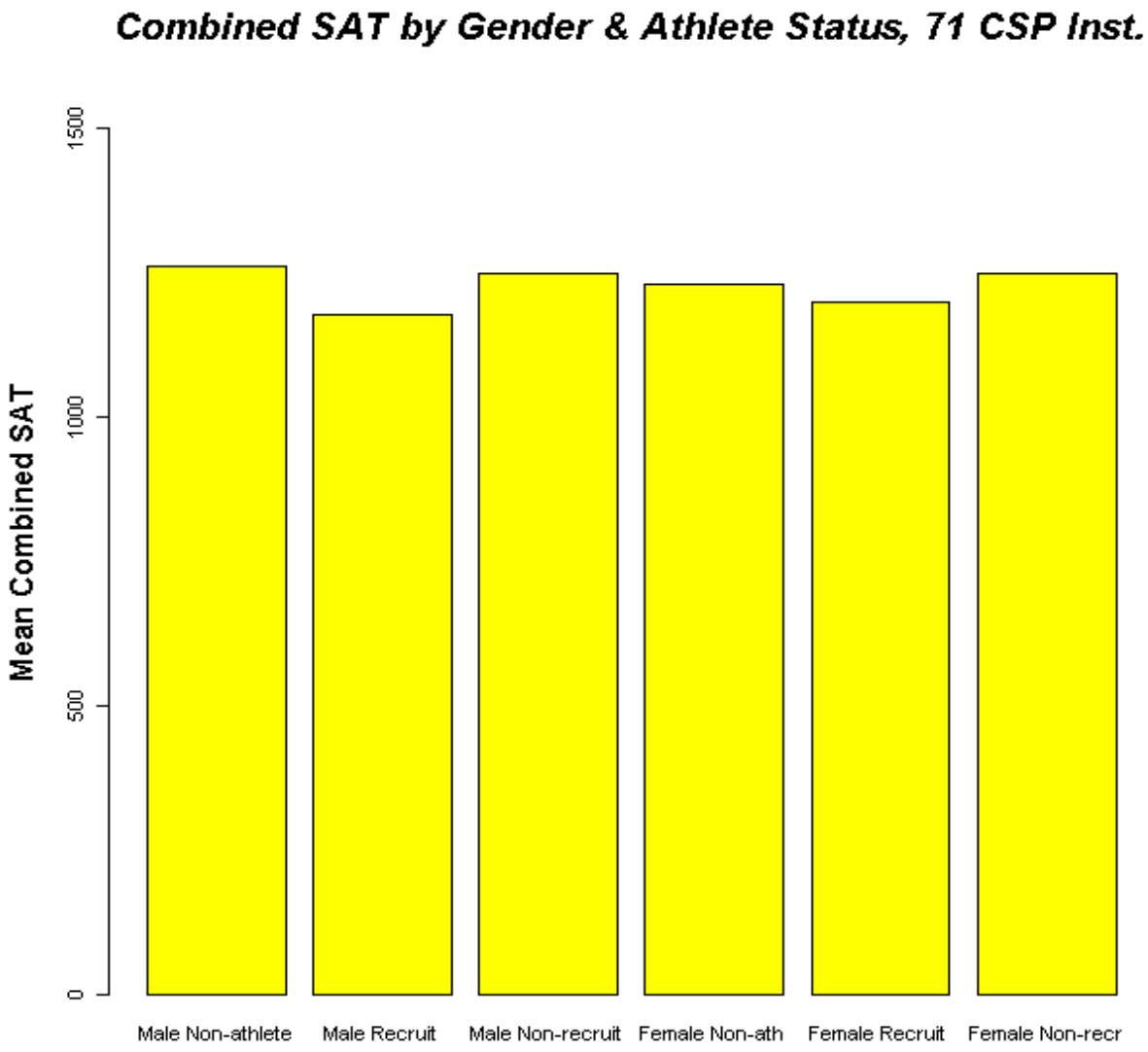
Average Combined SAT



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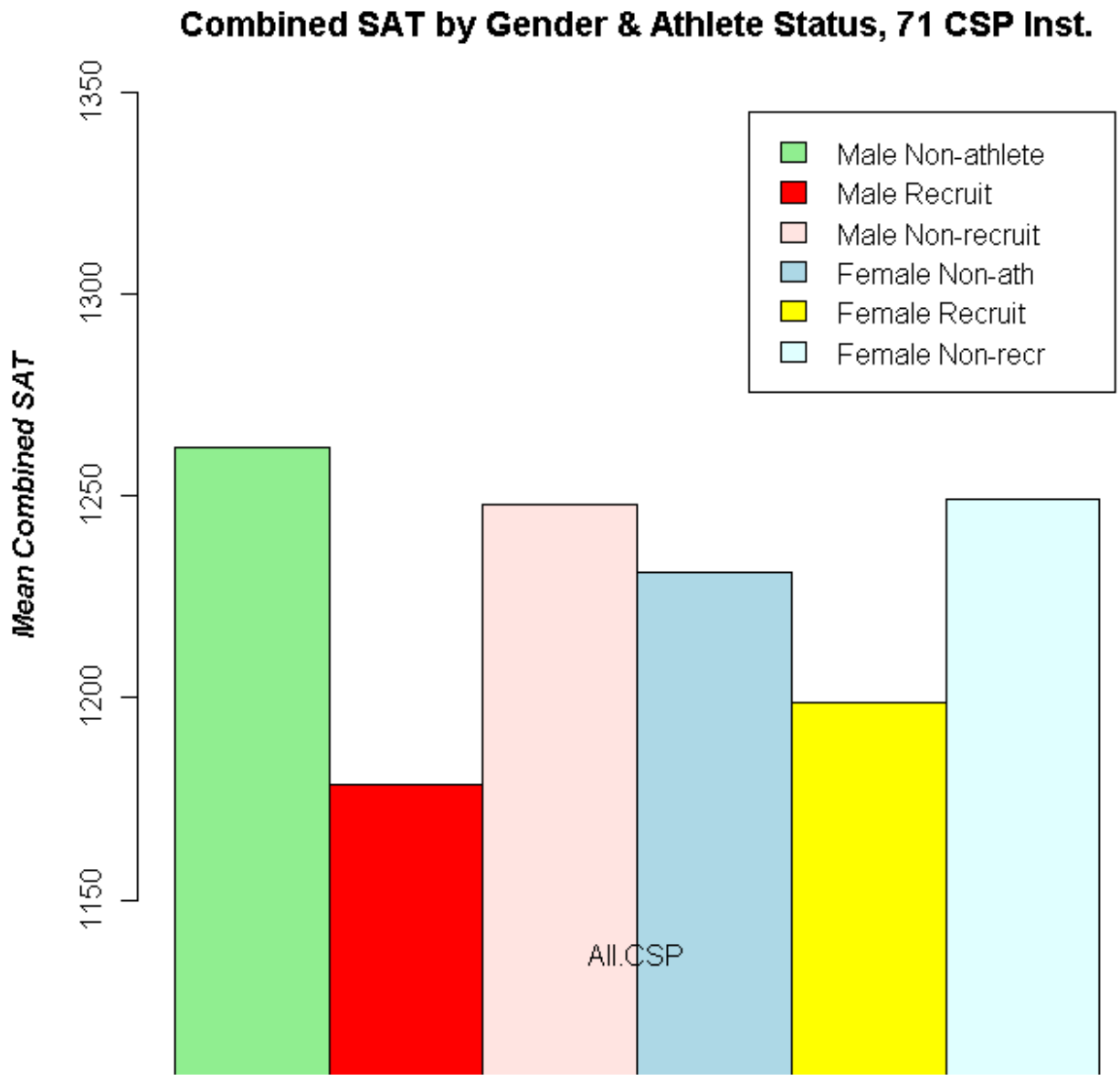
Average Combined SAT



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Multiple Regression Analysis of College GPAs

Use of the model:

- **Predict GPAs for groups of athletes when they are recoded as non-athletes. Record differences.**
- **Athlete's GPA differences in means (observed – predicted) are called "underperformance"**

Response variable is 2-Year GPA on 4-point scale

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Explanatory variables include:

- **Gender (M/F)**
- **Athletic status (Non-ath., Recruited, Non-recruit)**
- **Race/Ethnicity**
- **Citizenship (US/International)**
- **College class standing (Fr., So., Upper)**
- **College Board data on SATs for the high school**
- **College Board data on percent attending college**
- **ID for the 71 colleges– differences among colleges**
- **Many interactions involving above**

A few results:

- **R-squared = 44%**
- **All main effects statistically significant (big data set!)**
- **A few interactions were not statistically significant**

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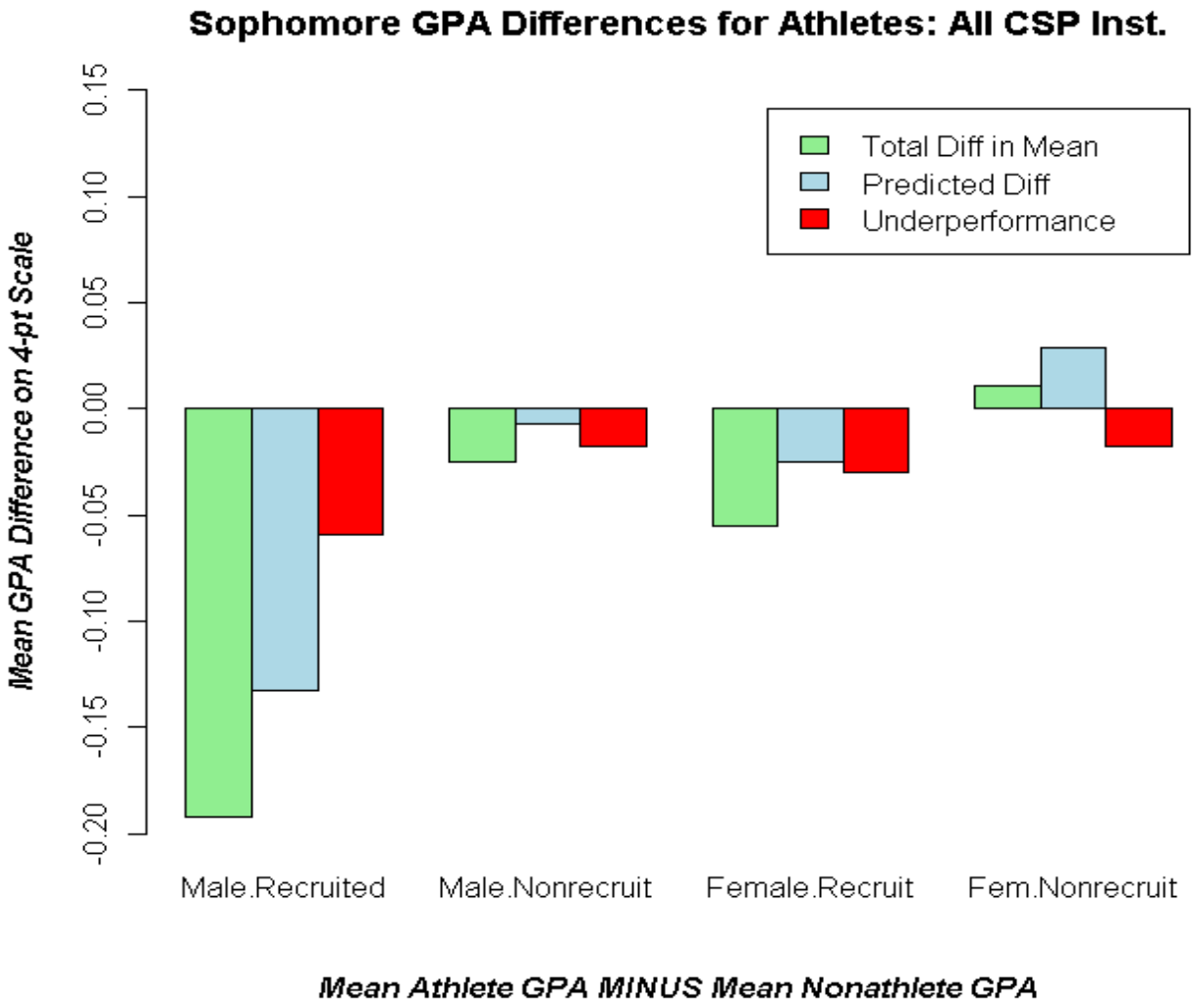
Comparing Athletes to Non-Athletes



Underperformance seems modest. Note that positive differences show groups of athletes with higher college grades than we expect them to have based on their characteristics.

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Exploring subgroups of the 71 CSP institutions

- The 71 institutions are heterogeneous: 63 of them are Bachelors Liberal Arts Colleges (Carnegie classification) but these vary considerably by the academic credentials of students and the level of selectivity in admissions.

- We defined subgroups using each college's average combined SAT score as a proxy for selectivity.

- We labeled 8 institutions which are not classified as Bachelor's Liberal Arts Colleges in the Carnegie classification as "Other".

Groups of Institutions Determined by Average Combined SAT

College subgroup	Comb. SAT range	No. colleges	No. students
High	>1250	25	13,694
Middle	1150 to 1250	23	11,089
Lower	<1150	15	5,532
Other (non L.A.)	any SATs	8	6,782
		N=71	N=37,097

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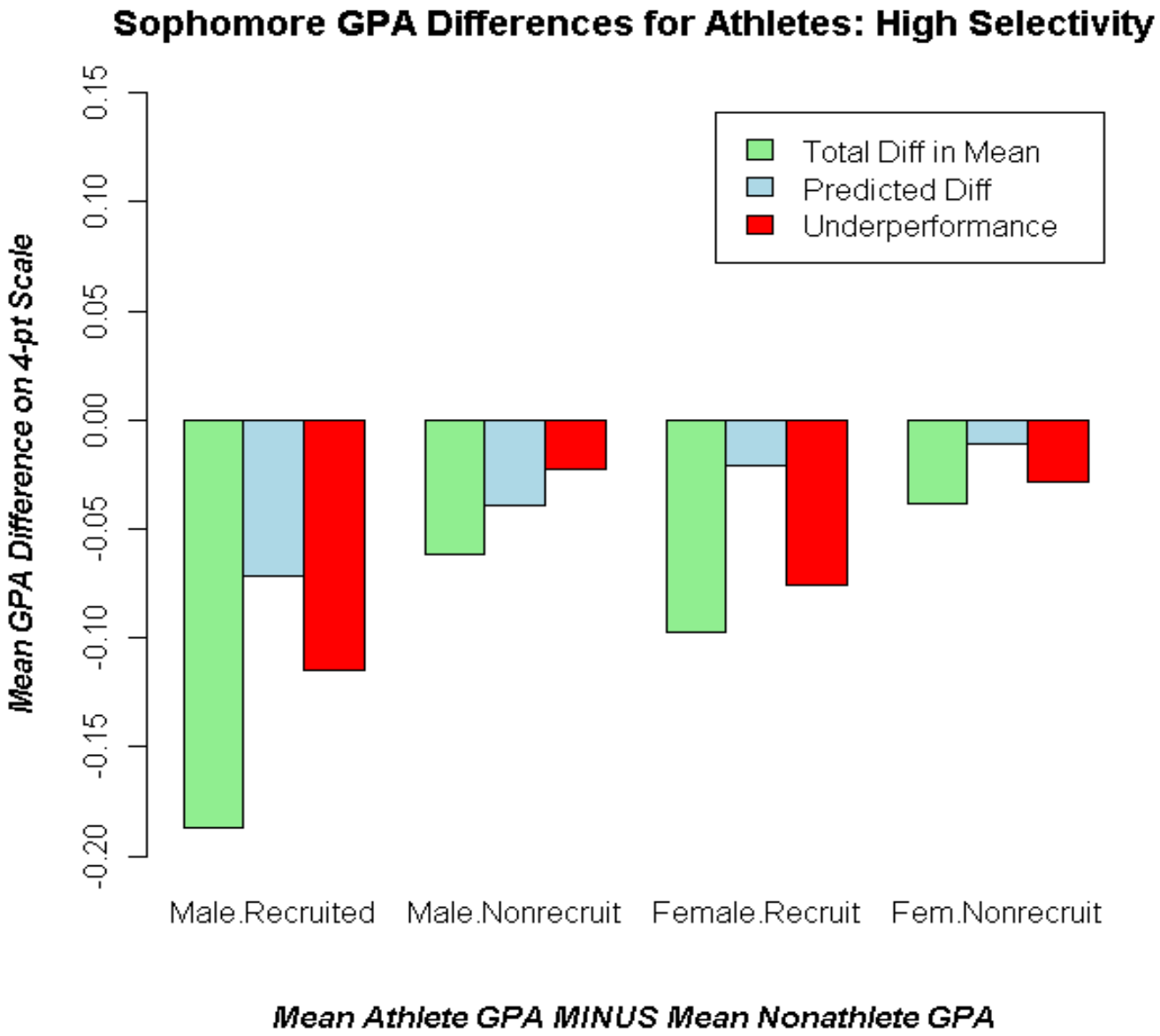
Athletes vs. Non-Athletes by Selectivity of Colleges



Note greater "underperformance" among recruited athletes

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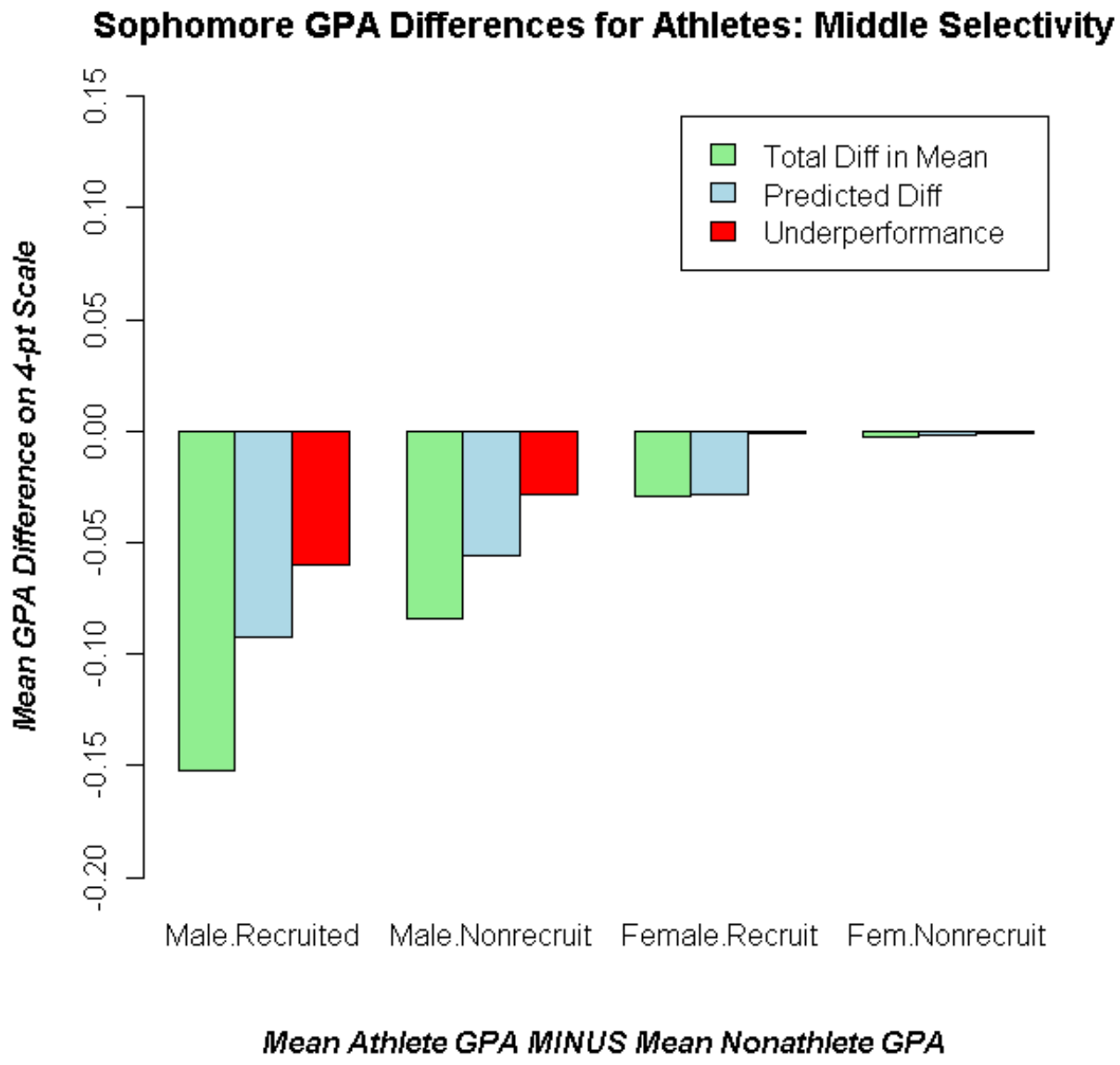
Athletes vs. Non-Athletes by Selectivity of Colleges



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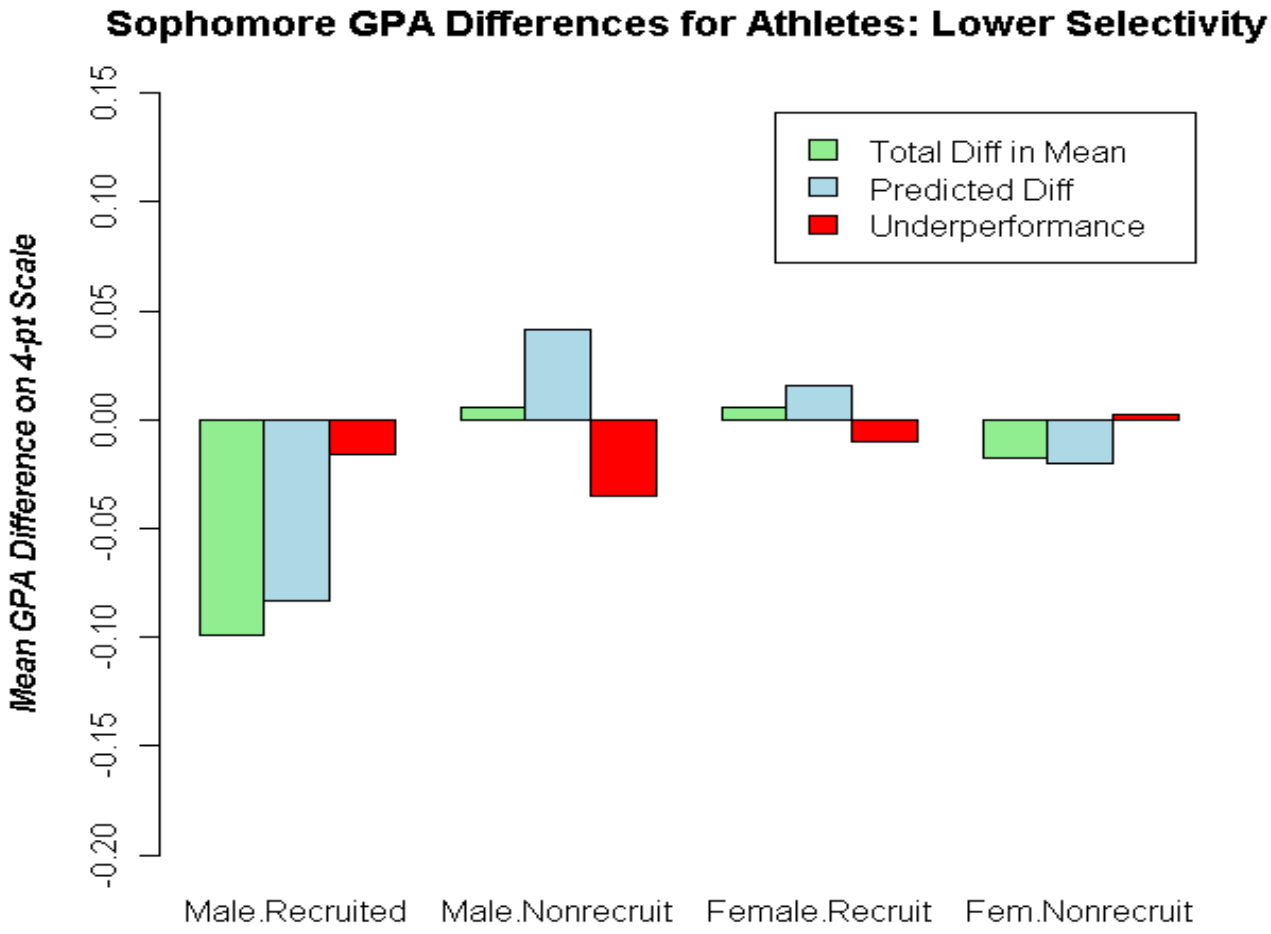

Mean Athlete GPA MINUS Mean Nonathlete GPA

Group with greater underperformance:

- **Male recruited athletes at high selectivity institutions**
- **Female recruited athletes at high selectivity institutions**
- **Male recruited athletes at medium selectivity institutions**

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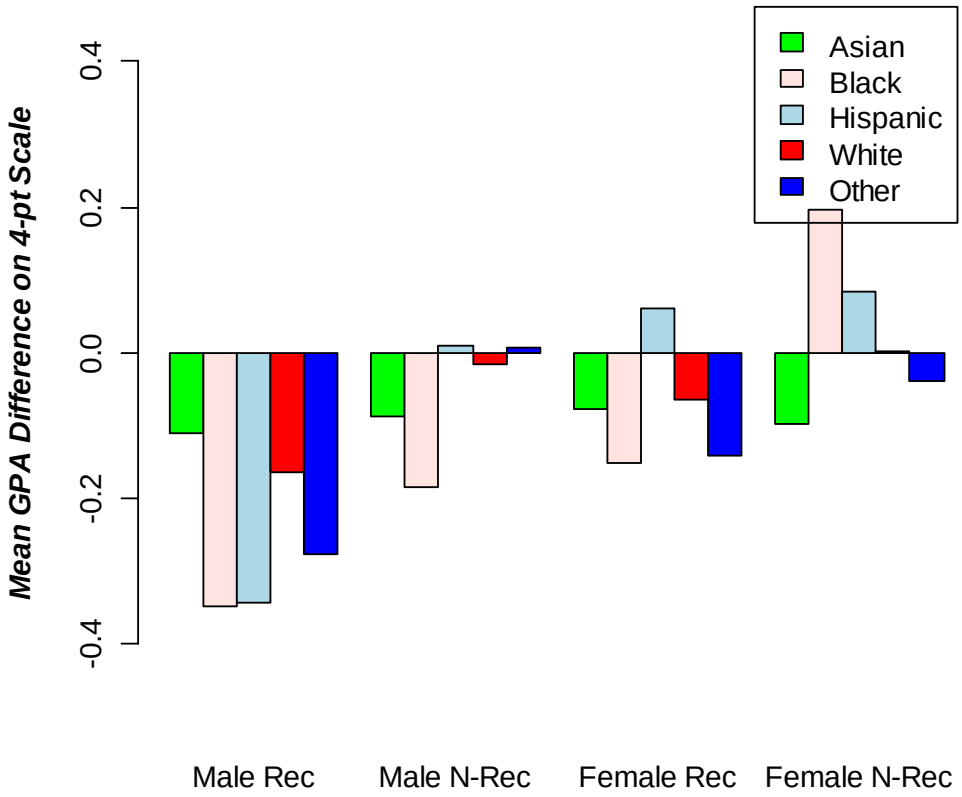
Athletes vs. Non-athletes by Selectivity and Race

Do findings about GPA differences vary across racial subgroups?

- **Underrepresented minority groups have weaker academic outcomes to begin with**
- **Comparisons here are within racial groups and within gender**
- **Some "cells" will now be too small – for example, counts of non-recruited athletes from lower selective institutions and within some race categories are less than 10**
- **For some of the subgroups we can ask about underperformance within racial group**
- **Underrepresented minority groups have greater differences than Whites between recruited athletes and non-athletes. Exception: Hispanic women**

Athletes vs. Non-athletes by Selectivity and Race

Sophomore GPA Differences for Athletes by Race: All 71



Mean Athlete GPA MINUS Mean Nonathlete GPA

COUNTS	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	732	96	89	1306	88	115
Black	364	199	76	788	82	73
Hispanic	503	120	67	883	60	77
White	7289	3168	1313	11272	2335	1446
Other	1391	363	207	2130	243	222

MEAN GPA	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	3.01	2.90	2.92	3.25	3.17	3.15
Black	2.65	2.30	2.46	2.82	2.67	3.02
Hispanic	2.86	2.51	2.87	2.99	3.05	3.08
White	3.04	2.87	3.02	3.26	3.19	3.26
Other	3.09	2.82	3.10	3.26	3.12	3.22

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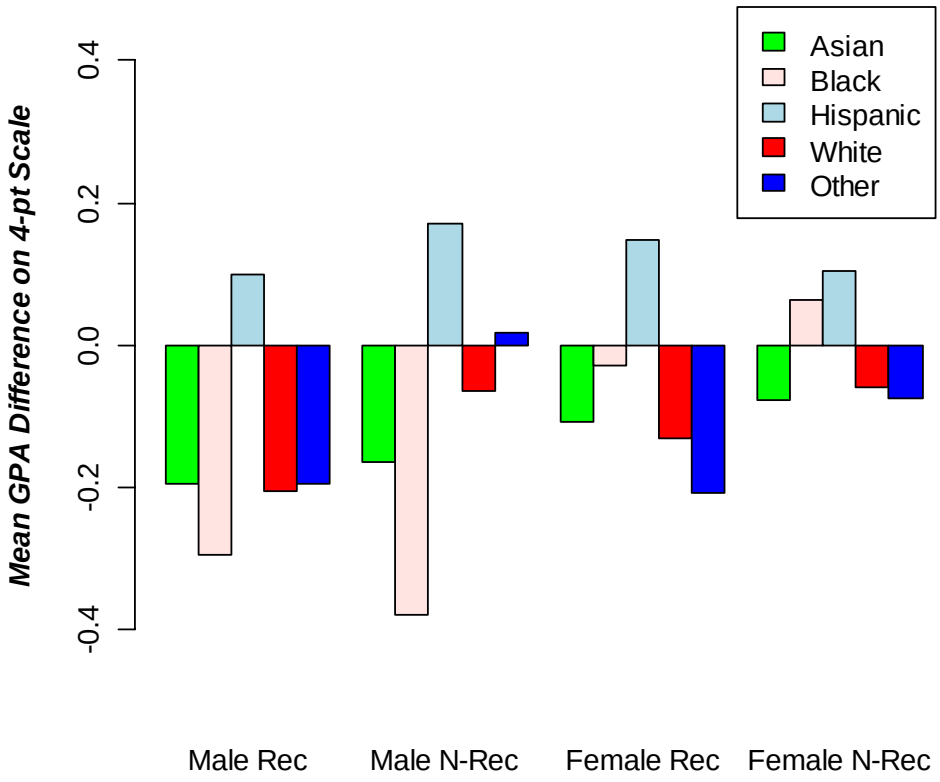
The result just reviewed are for students at all 71 institutions. Do findings about GPA differences change when we focus on 25 most highly selective liberal arts colleges?

- **Hispanic athletes generally have positive differences, indicating that athlete's average GPAs are higher than those of non-athletes.**

- **Male Black students have larger GPA gaps between the athletes and the non-athletes than other racial groups. Female Black students show small differences between athletes and non- athletes.**

- **But the counts of students in subcategories for Hispanic and Black students are getting smaller, ranging from 18 to 56.**

Athletes vs. Non-athletes by Selectivity and Race



Mean Athlete GPA MINUS Mean Nonathlete GPA

COUNTS	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	267	63	54	723	54	80
Black	135	55	35	331	23	52
Hispanic	212	44	43	412	18	56
White	2188	950	527	3729	813	719
Other	550	148	99	1042	139	133

	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	3.19	2.99	3.02	3.33	3.22	3.25
Black	2.85	2.56	2.47	2.93	2.91	3.00
Hispanic	2.93	3.03	3.10	3.07	3.22	3.18
White	3.25	3.05	3.19	3.39	3.26	3.34
Other	3.25	3.06	3.27	3.38	3.17	3.31

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Findings at medium selectivity liberal arts colleges?

- **The very positive story for Hispanic athletes no longer holds, at least for the male Hispanic athletes.**

- **Small counts are a worry so we don't continue.**

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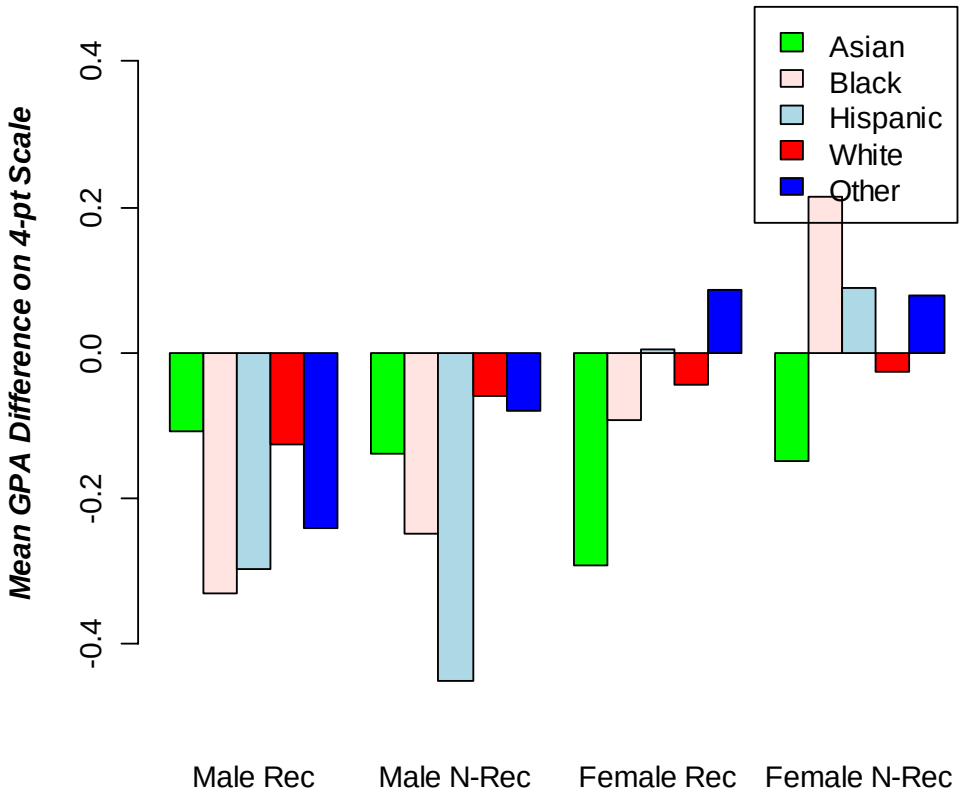
Athletes vs. Non-athletes by Selectivity and Race



Mean Athlete GPA MINUS Mean Nonathlete GPA

COUNTS	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	130	17	24	231	13	21
Black	69	56	22	173	26	15
Hispanic	92	33	16	161	17	7
White	2551	1072	553	3819	747	450
Other	273	44	37	362	23	35

MEAN GPA	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	2.78	2.67	2.64	3.14	2.85	2.99
Black	2.56	2.23	2.31	2.74	2.65	2.95
Hispanic	2.82	2.53	2.37	3.02	3.02	3.11
White	2.99	2.86	2.93	3.24	3.20	3.22
Other	3.07	2.83	2.99	3.14	3.22	3.22

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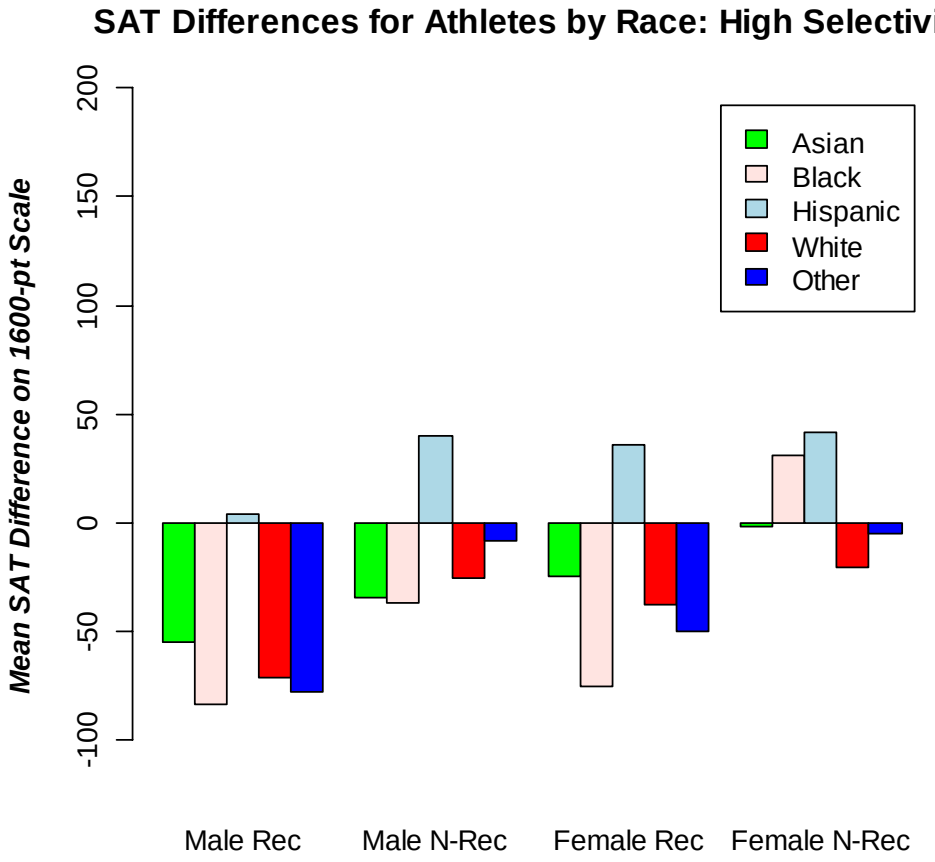
What do SAT breakdowns look like for the five racial groups?

We find that:

- **Hispanic and black students have lower average combined SATs in general.**
- **Black athletes give differences between athletes and non-athletes that are greatest among five racial groups.**
- **Hispanic athletes, on the other hand, have differences that compare favorably with other groups. This finding holds even for male recruited Hispanic athletes when we limit to the 25 highly selective colleges.**

Athletes vs. Non-athletes by Selectivity and Race



Mean Athlete SAT MINUS Mean Nonathlete SAT

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MEAN SAT	M N-Ath	M Rec	M N-Rec	F N-Ath	F Rec	F N-Rec
Asian	1362	1307	1327	1333	1308	1332
Black	1217	1134	1180	1181	1105	1212
Hispanic	1260	1264	1300	1223	1259	1265
White	1370	1299	1345	1341	1304	1320
Other	1356	1279	1348	1316	1266	1311

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Academic Underperformance

When academic underperformance is a special concern, how does underperformance vary over racial groups?

- **Recall that underperformance was a large part of the differences at the most highly selective colleges. So we focus attention there.**

- **Hispanic athletes in all four categories arguably exhibit "over-performance". But this finding is limited to students at the most selective colleges.**

- **At the 25 selective colleges, Asian athletes appear to underperform to about the same extent that Hispanic athletes overperform.**

- **Black male athletes exhibit the largest amounts of underperformance, but black female athletes perform as well as non-athletes and underperformance is not an issue.**

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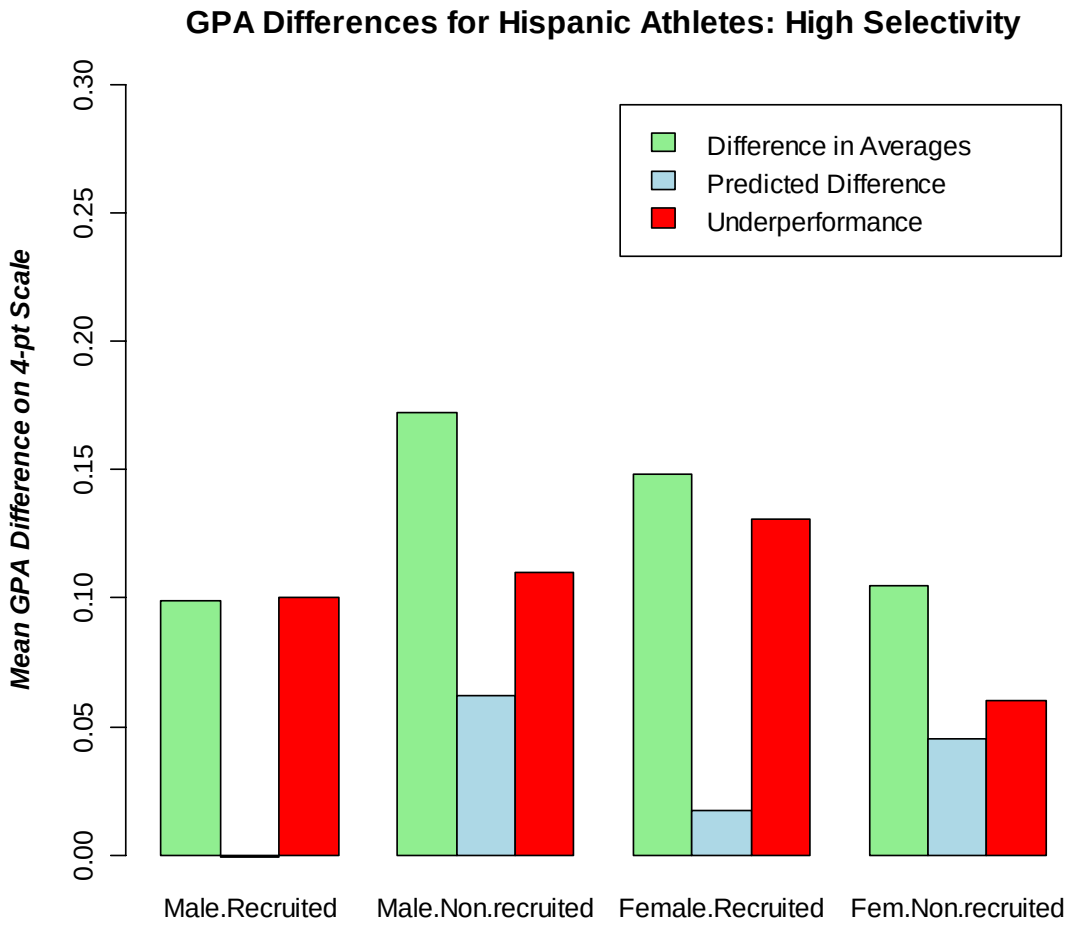
Illustrative plot

For Hispanic students, the athlete-to-non-athlete differences are positive. Most of this stronger achievement by groups of athletes is not predicted from the known factors, and thus it might be termed "over achievement."



<u>Takeaway message</u>: We often learn something new and useful by examining various student subgroups and not always focusing on aggregate data.

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