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Low-Income Students and Highly Selective Private Colleges: Searching and Recruiting

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Low-income students' access to the best of American higher education is a matter not only of individual equality of opportunity, but of social efficiency in fully utilizing the nation's talents. If very able students are denied access to highly demanding colleges because of low family incomes, society suffers along with the individual. So it has been our assumption that these privileged schools should aim to have their student bodies include students from low-income families at least in proportion to their share in the national population of high ability students.

In an earlier study, the authors used student data from twenty-eight of the nation's most selective private colleges and universities – including the likes of Harvard, Stanford,

Wellesley and Swarthmore¹ -- to ask what price their students from different levels of family income actually pay for a year of education, net of grant aid price reductions [Hill, Winston and Boyd, 2005]. Two important facts emerged: that because of policies of “need-based financial aid” at such schools, low-income students pay far less than the published price and far less than their more affluent classmates – at many of these colleges, actual prices are roughly proportional to family income -- but, surprisingly, that only 10% of the students at these schools came from families in the bottom 40% of the US family income distribution.

A scarcity of low-income students at highly selective colleges has been seen either as the result of those schools’ intentional exclusion of the poor – they have been called “bastions of privilege” – or, alternatively, as the result of the fact that poor families with poor neighborhoods and poor schools don’t produce many students who could succeed in an academically demanding college meaning that lots of high-ability, low-income students simply don’t exist. So in a second study we asked if many high-ability low-income students are to be found in the US national student population [Hill and Winston, 2006]. Using SAT and ACT data with test scores and family incomes for high school seniors in 2003 (with more than two million observations) we found that even when “high ability” is defined by the demanding level of “at or above a 1420 combined

¹ COFHE schools include: *Coeducational Colleges*: Amherst, Carlton, Oberlin, Pomona, Swarthmore, Trinity, Wesleyan, and Williams; *Women’s Colleges*: Barnard, Bryn Mawr, Mount Holyoke, Smith, and Wellesley; *Ivy League Universities*: Brown, Columbia, Cornell, Dartmouth, Harvard, Penn, Princeton, and Yale; *Non-Ivy Universities*: Chicago, Duke, Georgetown, Johns Hopkins, MIT, Northwestern, Rice, Rochester, Stanford, and Washington University. Three of these did not participate in the study, leaving 28 schools for 2001-2002. See [Hill, Winston and Boyd, 2005].

SAT (or equivalent) score,” there is a larger share of low income high ability students² in the national population (12.8%) than in the student bodies of these selective private schools (10% on average).³ So this paper starts to ask “Why?”

While many things undoubtedly contribute to explaining why the share of low-income students in the national high-ability population is nearly 30% more than the share of low-income students at these demanding colleges, an important one seems to rest on ordinary geographical patterns of student search and recruitment at these schools. That’s what this paper addresses.

Selective private colleges don’t wait passively to see which students ask for admission. Instead, they actively seek out students in order to improve the number and quality of their applicants through search and recruitment. In “search,” schools buy names of students with specified characteristics -- minimum test scores, geography, gender, race, etc.... -- from the testing companies, SAT and ACT, students whom they then contact with their marketing materials. It appears from informal talks with admissions officers that roughly 20-30% of the matriculated students at these schools were first contacted through such a search. “Recruiting” involves travel by a school’s

² Each of our data sets – from ACT and SAT –eliminated duplicate records for students who took the test more than once, but we have no way of identifying those who took both tests. We have, therefore, tested our conclusions against each of these data sets, separately, and found no contradiction of the results reported in the text.

³ Defining high ability more modestly as “a combined SAT equivalent score of 1300 or above” yields a share of low-income students in the high-ability population of 15.9% and strengthens all of the conclusions of this paper. Here we stick to 1420 or above to be consistent with our earlier work.

admissions officers to selected secondary schools and college fairs to sing their college's praises to high school students and their counselors.

These are clearly activities through which colleges' traditions and practices can influence the geographic and other characteristics of their applicant pools, hence the composition of their student bodies. Our question, then, is whether among those traditions and practices there are those that might help explain the meager representation of low-income students in these selective schools. From our earlier studies, as noted, we know both that there exists a larger share of high-ability, low-income students in the national population than is enrolled in these schools and that such students are not generally excluded by high net prices. But have more subtle biases come to be built into widely accepted search and recruitment practices?

Two things suggest that they may have been: the fact that traditional recruitment patterns may focus on parts of the country with small numbers of high-ability low-income students while neglecting those regions with more of them and, not unrelated, the tendency of these schools to search on SAT rather than ACT test results. Both of these will confound ineffectual recruitment of high-ability low-income students and an unfortunate choice of recruiting locations while the second will also lead schools simply not to see the high-ability, low-income students who took only the ACT test.

The Geography of SAT and ACT Tests and of High-ability, Low-income Students

The two tests used in the US to assess students' academic promise for college – the Scholastic Aptitude Test (SAT) and the American College Test (ACT) are used in similar numbers nationally (a bit more than a million each in 2003) but in very different places: use of the SAT is concentrated on the two coasts and use of the ACT in the middle. Table 1 shows the number of each of these tests taken by high school seniors in 2003 for each of the nine US Census Divisions. Figure 1 pictures the percent of each US Census Division's tests that are ACTs.

Clearly there are significant differences in test taking by region: in the West North Central Division (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota), 91.2% of the tests taken were ACTs compared with 11.8% of those taken in New England (Massachusetts, Connecticut, Vermont, New Hampshire, Rhode Island and Maine) and 25% of those in the Pacific Division (Alaska, Hawaii, Washington, Oregon and California). Geography clearly matters.

Geography matters, too, to the incidence of high ability, low-income students within the regions. Table 2 shows the number of high-ability, low-income students by Census Division and their share of each region's high ability students (who reported income) when high ability is defined as a score at or above 1420 on the SAT (or SAT-equivalent ACT) and low income as the bottom two quintiles of the US family income distribution.

Regional characteristics are clearly different in ways that are of immediate relevance to low-income student recruiting and admission policies at selective schools. The regional differences in the total number of test-taking students is striking: ranging from 114,576 in New England to nearly half a million in the East North Central region. And along with that are sharp differences in the number of high-ability students: only 2,542 are found in the East South Central Division (and 3,445 in New England) but 11,329 in the East North Central area.

The nation's high-ability low-income students are found in quite different places: 3.5% of them are in New England while nearly 23% are in the East North Central region. So the East North Central region has the largest number of high ability, low-income students (963) and the largest share of the nation's high-ability, low-income population. New England, in contrast, has only 150 such students -- 3.5% of the nation's total.⁴ What's more, in some regions, low income students are much more evident in the high-ability student population – 15.7% of high-ability students in the Mountain states but only 8.3% in new England are from low-income families. Finally, a far larger share of the region's low-income students demonstrate high ability in the West North Central region (1.1%) than in the South Atlantic or West South Central regions (0.4%).

⁴ Approximately 40% of high ability students did not report income. The count of high ability, low income students is likely to be understated. Also note that, to the extent that low income students are more likely to not report income, the underrepresentation of low income students at these schools is greater than we have indicated.

Where Schools Recruit

Even a quick glance at Table 2 suggests that there are many ways for a selective school to adopt a strategy that would make efforts to recruit low-income students difficult -- to reach a national share of high-ability, low-income students in their own student bodies. A recruiting strategy focused on New England, for instance, would encounter the smallest number and lowest density of high-ability, low-income students while putting effort into recruiting in the East North Central states would find a student population with both a larger number of high-ability, low-income students (963) and a larger proportion of high-ability students (12%) who were from low-income families. Indeed, almost a quarter of the nation's high-ability, low-income students are to be found in the East North Central states while far fewer are in New England. Note that the Mountain states have the highest percent of highly able student who are also low-income (15.7%).

In asking, "Why are there so few low-income students at these highly selective colleges?" Table 2 suggests two kinds of explanation: because schools focus their recruiting efforts on regions (like New England) that don't have either a large number or a large share of the nation's high-ability, low-income students, they recruit where such students are hard to find, or, alternatively, that while they recruit in places that have lots of high-ability, low-income students, they don't do it very well. Clearly, it would be useful to know which it is.

Assume that the geographical distribution of a school's current students reflects its recruiting traditions and practices. Then, given that pattern, its own share of low-

income students should be a weighted average of the shares of the nation's high-ability, low-income students in those regions. That would be a 'local target,' for low-income students, given its traditional recruiting practices. A school, for instance, all of whose students came from New England would be doing well by low-income students if 8.3% of its student body were from low-income families and the explanation for its failure to reflect the 12.8% national share of high-ability, low-income students would lie in its recruiting locations. If, on the other hand, that school's students came largely from the West North Central region or the Mountain states, the explanation for a failure to reflect the national share of low-income students would have to be ineffectual recruiting in the ample population of high-ability, low-income kids where it recruits. The local target for a school whose students come from many regions would be the average of those regions' shares of the high-ability, low-income students weighted by the share of each region in that school's student population.

Table 3 shows the regional distribution of students for the COFHE colleges and universities, as well as for the four subcategories of COFHE colleges – co-ed colleges, women's colleges, Ivy universities, and non-Ivy universities.⁵ The table shows where each group of schools' students come from – so, by assumption, where their recruiting efforts have been spent. Weighting these regional proportions by the shares of high-ability, low-income students in each region (from Table 2) suggests a 'local target' proportion of low-income students – taking each school's recruiting patterns as given – of 12.3% for the COFHE colleges and universities. These local targets are also reported in

⁵ IPEDs, Opening Fall Enrollment Survey, 2006, "Residence and Migration" data, entering freshman in fall of 2006.

Table 3. If each school or group of schools achieved those shares, that would describe effective recruitment of low-income students, given where the schools recruit. To the extent that those shares fell short of the national proportion of high-ability, low-income students, then, the school's problem would lie in its recruitment geography – the evidence would be that they do well with low-income students where they recruit, but they recruit in areas where there simply aren't as many high-ability, low-income kids.

Of the 2.8 percentage points by which the COFHE colleges and universities fall short of the national target for low-income enrollment, with 10% of its students from low-income families, .5 percentage points would be attributed to the geographical distribution of its recruiting efforts (12.8 – 12.3) and 2.3 percentage points to ineffectual recruiting among low-income kids (12.3-10.0). For the co-ed COFHE colleges, with an 11% low-income population, their shortfall from the national high-ability, low-income share would be due .8 percentage points to a poor geographical recruiting strategy (12.8 – 12.0) and 1.0 percentage points to ineffectual recruiting among high-ability, low-income kids where they do recruit. For the COFHE colleges and universities to have their enrollment of low-income students reflect the national share of high-ability, low-income students, they could both shift recruiting efforts toward those places where there are more such students and increase recruiting effectiveness among high-ability, low-income students.

Schools' Preference for SAT-based Student Search

Assessing the effect on low-income student recruitment of selective schools' tendency to prefer SAT over ACT tests as the basis for their student searches is, in principle, simple: if they don't learn of the high-ability, low-income students who took ACT tests, they can't recruit them. The degree of damage such a biased search policy would inflict on efforts to enroll low-income students could be measured by the number of high-ability, low-income students who took only the ACT test. Unfortunately, we don't have that number because, while each of our test-takers data sets, SAT and ACT, has been purged of duplicate test-takers, we can't identify who or how many students took both tests and thereby got counted twice.

But our data do allow an estimate of the minimum damage an SAT-only search policy can inflict on efforts to enroll low-income students. When more ACT than SAT tests are taken in any population, the number of students missed by an SAT-only search will be at least the difference between their numbers. So if 100 ACT tests were taken at a high school along with only 80 SATs, there must be at least 20 students who won't be captured by an SAT-only search. There might, of course, be more since it's possible that none of those who took the ACT also took the SAT – in the extreme, all 100 of the ACT-takers could miss out on an SAT search. So we can't use these data to calculate the maximum or average damage done by an SAT-only search, but we can use them to estimate the *minimum* damage – the minimum number of students left out by SAT-only

search policies -- as the excess number of ACT over SAT tests. From the national data of Table 1, it looks like there had to have been at least 50,902 test takers across the US who would be missed by an SAT-only search strategy.

While that is a large number, it's more useful to focus on our primary concern with the low-income, high-ability students within the test-taking population. Table 4 does that as it reports, in the bottom part of the table, the results by Census Divisions separately including only those students who come from the bottom two quintiles of the family income distribution and score at or above an SAT-equivalent score of 1420.

If we estimate the number of high-ability, low-income students missed by an SAT-only search using aggregate numbers, we see only 120 students, but recognizing the validity of the minimum damage estimates for each region separately, yields the larger estimate of a minimum of 1,057 with 376 high-ability, low-income students missed in the West North Central Division alone. (Defining "high-ability" as a combined score of 1300 or above produces a minimum estimate of 6,143 high-ability, low-income students missed by an SAT-only search strategy.) Going to the state level to count the excess of ACT over SAT test-takers doesn't change things much -- it adds only 79 more, nationally, of high-ability, low-income students who would be missed by an SAT-only search policy. But it does reveal that an SAT-only search policy can miss a large part of a state's high-ability, low-income students -- like 59% in Michigan and 58% in Alabama.

Conclusion

The evidence, then, suggests that inadequate attention to geography and the incidence of ACT tests in their search and recruiting activities has contributed to a bias in enrollment against low-income students at highly selective private colleges and universities. Other factors undoubtedly play a role – especially, for instance, widespread inaccurate information about actual prices at these schools – but these search and recruiting practices do appear to contribute to their relatively meager share of low-income students.

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Table 1

The Geographic Distribution of Admission Tests

All US High School Senior ACT & SAT Test Takers in 2003

Test	East North Central		East South Central		Mid-Atlantic	Mountain	New England	Pacific	South Atlantic	West North Central	West South Central	US Total
ACT	350,397	128,208	42,675	117,121	13,486	66,879	128,139	164,816	158,656	1,170,377		
Share of Regional Total	79.2%	88.9%	13.6%	75.1%	11.8%	25.1%	32.3%	91.2%	57.8%	51.1%		
SAT	92,140	16,010	270,710	38,830	101,090	199,880	269,010	15,840	115,960	1,119,470		
Share of Regional Total	20.8%	11.1%	86.4%	24.9%	88.2%	74.9%	67.7%	8.8%	42.2%	48.9%		
Regional Total	442,537	144,218	313,385	155,951	114,576	266,759	397,149	180,656	274,616	2,289,847		
Region as share of US	19.3%	6.3%	13.7%	6.8%	5.0%	11.6%	17.3%	7.9%	12.0%	100.0%		

Figure 1

The Geographic Distribution of Admission Tests (ACT share of tests taken)

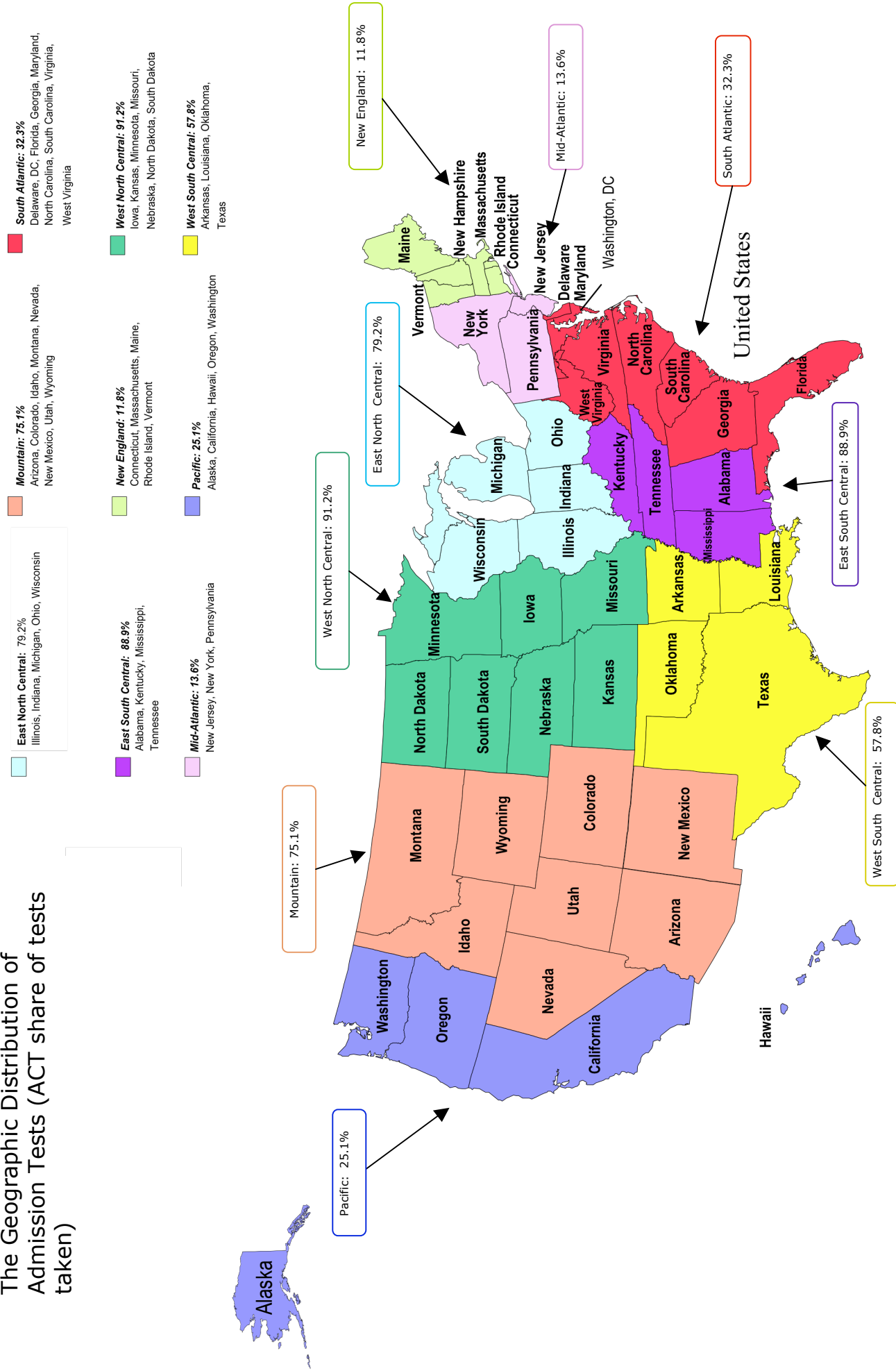


Table 2

The Geographic Distribution of High-Ability, Low-Income Students

(High-Ability defined as 1420 or above combined SAT & ACT equivalent score; Low-Income is bottom 40% of US Family Income Distribution)

	East North Central	East South Central	Mid- Atlantic	Mountain	New England	Pacific	South Atlantic	West North Central	West South Central	US
High-Ability	11,329	2,542	8,395	2,881	3,445	8,301	7,351	5,069	4,654	53,967
Low-Income	113,237	56,029	74,148	42,040	20,167	68,077	109,922	51,520	94,849	629,998
Low-Income, High-Ability	963	262	592	304	150	549	472	556	392	4,240
High-Ability Students Reporting Income	8,045	1,841	4,385	1,939	1,809	4,400	4,215	3,835	2,784	33,253
Region share of Nation's High-Ability, Low-Income Students (percent)	22.7	6.2	14.0	7.2	3.5	12.9	11.1	13.1	9.2	100.0
Low Income as share of Region's High-Ability Students reporting income (percent)	12.0	14.2	13.5	15.7	8.3	12.5	11.2	14.5	14.1	12.8
High Ability as share of Region's Low-Income Students (percent)	0.9	0.5	0.8	0.7	0.7	0.8	0.4	1.1	0.4	0.7

Table 3

The Geographic Distribution of Students at the COFHE Schools (2006)

(% of First Year Students From Each Region)

	East North Central	East South Central	Mid- Atlantic	Mountain	New England	Pacific	South Atlantic	West North Central	West South Central	Total	Local target
Coed Colleges	9.5%	1.2%	27.6%	3.2%	21.5%	16.5%	11.7%	5.8%	3.1%	100.0%	12.0
Women's Colleges	6.7%	1.3%	31.5%	3.0%	24.9%	15.0%	11.3%	2.4%	4.0%	100.0%	11.8
Ivy League Universities	7.5%	1.7%	39.2%	2.8%	14.0%	14.4%	13.3%	2.5%	4.6%	100.0%	12.3
Non-Ivy Universities	16.7%	2.1%	23.1%	3.5%	8.5%	15.9%	16.5%	4.9%	8.7%	100.0%	12.5
COFHE	11.4%	1.8%	30.6%	3.1%	13.6%	15.3%	14.2%	3.9%	6.0%	100.0%	12.3

Source: IPEDS Data.

Table 4

The Effect of an SAT-Only Search Policy -- Minimum Damage to Recruitment of Low-Income Students

All tests taken in 2003

Test	East North Central	East South Central	Mid- Atlantic	Mountain	New England	Pacific	South Atlantic	West North Central	West South Central	US Total
ACT-SAT	258,258	112,198	(228,035)	78,291	(87,604)	(133,001)	(140,871)	148,976	42,696	50,907
Difference, ACT-SAT > 0	258,258	112,198	0	78,291	0	0	0	148,976	42,696	640,419
Low-Income, High-Ability (Bottom two family income quintiles and 1420 or above combined SAT-equivalent score)										
ACT	653	192	112	224	20	129	152	466	232	2,180
SAT	310	70	480	80	130	420	320	90	160	2,060
Total	963	262	592	304	150	549	472	556	392	4,240
ACT-SAT	343	122	(368)	144	(110)	(291)	(168)	376	72	120
Difference, ACT-SAT > 0	343	122	0	144	0	0	0	376	72	1,057