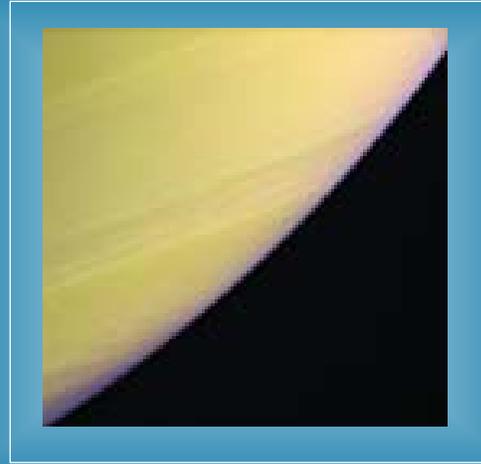


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## THERE'S A PAUCITY OF HIGH-ABILITY LOW-INCOME STUDENTS AT HIGHLY SELECTIVE COLLEGES

### Are They Out There?

**A small fraction of the students at the nation's most selective** private colleges and universities are from low-income families. A recent study of schools that belong to the Consortium on Financing Higher Education (COFHE) found that just 10 percent of their students come from the bottom 40 percent of the U.S. family income distribution. Gordon Winston, Orrin Sage Professor Emeritus of Political Economy at Williams College, and Catharine Hill, John J. Gibson Professor of Economics and provost of Williams College, examine the national distribution over family incomes of high-ability students (variously defined) to address two key questions: (1) What would be the target share of low-income students at the COFHE schools if their student bodies were to mirror the incomes of the national high-ability population? and (2) Are there enough high-ability low-income students out there to meet such a target share? Winston and Hill conclude that there are indeed enough such students and that it is possible for the most selective institutions to aim to mirror the share of high-ability low-income students in the national population.



#### MISSION CONTROL

- ✘ Just 10 percent of students enrolled in 28 of the nation's most selective private colleges and universities (the COFHE schools) are from the bottom 40 percent of the U.S. family income distribution.
- ✘ For the 2001-02 academic year, students from the lowest-income families actually paid, on average (calculated over all 28 COFHE schools) \$7,552 for tuition, room, board and fees—despite a mean sticker price of \$33,831. The average price of a public four-year college that year was \$9,008.
- ✘ An appropriate policy of equal opportunity might call for the share of highly able low-income students in the national population to be mirrored in the student bodies of the COFHE schools.
- ✘ The lower the minimum threshold (test score) chosen to define "high ability," the larger the share of students who could come from the bottom two quintiles.



## Access

While few would expect that students in the nation's most selective institutions would be drawn equally from across family income levels, the disproportionately small share of enrolled students drawn from lower income levels is disturbing and deserving of better understanding. Two ideologically based explanations are familiar. One holds that able low-income students who qualify in all respects for such schools are excluded by admissions policies designed to protect the children of the wealthy and well connected—

that is, these schools are “bastions of privilege.” A quite different ideology holds that more highly qualified students from low-income families would be welcome but they simply don't exist—that everything from inadequate nutrition to tough neighborhoods and weak families and educational systems has conspired to keep many low-income students from being able to make a perfectly fair cut for admission to these schools. It is the second question that this paper addresses.

Fortunately, a third possibility can be ruled out by evidence from an earlier study of net price at these same COFHE schools. For the 2001–02 academic year, students from the lowest-income families (those earning less than \$24,000) actually paid, on average (calculated over all 28 COFHE schools), \$7,552 for tuition, room, board, and fees—despite a mean sticker price of \$33,831. Indeed, at one school, the average student from the bottom income quintile paid less than \$1,000 for the year. Students can meet this price with loans and job opportunities—the “self-help” component of a financial aid award. The average price of a public four-year college that

year was \$9,008. Thus, the *affordability* of these schools is not likely to explain their meager proportions of low-income students (though students' lack of knowledge of these low prices is quite likely a factor). At these wealthiest schools, it is generally true that any admitted student can afford to attend.



## The Data

So a key question is, “Are they out there?” That is, are there enough high-ability low-income students in the U.S. population to achieve their reasonable representation in the COFHE schools? And what might we consider a reasonable share or target?

Table 1 shows the combined national population of ACT and SAT takers who scored 1110 and above in 2003, divided into U.S. Census family income quintiles. ACT scores are expressed as SAT equivalents and merged. Under each test score, the first row of the table indicates the number of students in the national population who achieved that score *or higher* in each income quintile. The second row under each test score shows their distribution (as a percentage of those who reported income). So, for instance, the top rows of Table 1 show the number of students scoring 1600 and their percentage distribution across family incomes; the next two rows show the number and distribution of those scoring 1520 and above, and so on.

It is clear that as the test score threshold is lowered, the group of students from the bottom two income quintiles expands dramatically. Thus, the answer to the “Are they out there?” question is quite sensitive to how we choose to define “high ability.”

Table 2 is taken from the COFHE study that identified the initial issue of only 10 percent of the students coming from the bottom 40 percent of the U.S. family income distribution. Similar to Table 1, Table 2 reports the number of students in the COFHE undergraduate population and their percentage distribution over the five income quintiles. With 5 percent from the first quintile (under \$24,000) and 5 percent from the second (\$24,001 to \$41,000), we see the fact we started with: 10 percent of these students come from the bottom 40 percent of U.S. family income distribution.

A review of the data presented in Tables 1 and 2 shows what the COFHE schools would have to do to mirror the share of low-income students in the national population of high-ability students. When “high ability” is defined with the rather ambitious specification of a SAT score at or above 1420, for instance, Table 1 indicates that 12.8 percent of

### Consortium on Financing Higher Education (COFHE)

#### Member Institutions

Amherst College  
Barnard College  
Brown University  
Bryn Mawr College  
Carleton College  
Columbia University  
Cornell University  
Dartmouth College  
Duke University  
Georgetown University  
Harvard University  
Johns Hopkins University  
Massachusetts Institute of Technology  
Mount Holyoke College  
Northwestern University  
Oberlin College  
Pomona College  
Princeton University  
Rice University  
Smith College  
Stanford University  
Swarthmore College  
Trinity College  
University of Chicago  
University of Pennsylvania  
University of Rochester  
Washington University in St. Louis  
Wellesley College  
Wesleyan University  
Williams College  
Yale University

*Note: Three of these institutions did not participate in the study.*

**Table 1: The Distribution of Students Over Family Income by Ability Level, National SAT and ACT Test-taking Population (2003)**

<i>SAT Equivalent Score</i>	<i>Family Income</i>					<i>Total Reporting Income</i>	<i>No Income Report</i>
	<i>Lowest</i>	<i>Lower Middle</i>	<i>Middle</i>	<i>Upper Middle</i>	<i>High</i>		
<i>Income</i>							
Lower Bound	—	\$24,001	\$41,001	\$61,379	\$91,701		
Quintile Median	\$15,347	\$32,416	\$50,890	\$74,418	\$113,689		
<b>1600</b>	7	30	48	112	252	449	506
<b>Percent</b>	1.6%	6.7%	10.7%	24.9%	56.1%	100%	
<b>1520 &amp; Above</b>	193	598	1,052	1,871	3,711	7,425	5,116
<b>Percent</b>	2.6%	8.1%	14.2%	25.2%	50.0%	100%	
<b>1420 &amp; Above</b>	1,229	3,047	5,363	8,406	15,288	33,333	20,776
<b>Percent</b>	3.7%	9.1%	16.1%	25.2%	45.9%	100%	
<b>1300 &amp; Above</b>	5,982	13,977	23,318	32,912	48,747	124,936	70,334
<b>Percent</b>	4.8%	11.2%	18.7%	26.3%	39.0%	100%	
<b>1220 &amp; Above</b>	13,360	30,238	47,683	63,113	85,448	239,842	127,219
<b>Percent</b>	5.6%	12.6%	19.9%	26.3%	35.6%	100%	
<b>1110 &amp; Above</b>	36,304	72,706	104,950	128,841	152,152	494,953	238,079
<b>Percent</b>	7.3%	14.7%	21.2%	26.0%	30.7%	100%	

**Table 2: The Distribution of Students Over Family Income, 28 Highly Selective Private Schools (2001–2002)**

<i>Income</i>	<i>Family Income</i>					<i>Total Enrollment</i>
	<i>Lowest</i>	<i>Lower Middle</i>	<i>Middle</i>	<i>Upper Middle</i>	<i>High</i>	
Lower Bound	—	\$24,001	\$41,001	\$61,379	\$91,701	
Quintile Median	\$15,347	\$32,416	\$50,890	\$74,418	\$113,689	
<b>COFHE Schools</b>	5,086	5,956	8,053	12,086	75,803	108,721
<b>Percent of Total Enrollment</b>	5%	5%	7%	11%	70%	100%
<b>Coed Colleges</b>	698	958	1,242	1,951	10,501	15,471
<b>Percent of Total Enrollment</b>	5%	6%	8%	13%	68%	100%
<b>Women’s Colleges</b>	532	641	752	962	5,515	8,620
<b>Percent of Total Enrollment</b>	6%	7%	9%	11%	64%	100%
<b>Ivy League Universities</b>	2,079	2,290	3,130	4,747	32,870	45,609
<b>Percent of Total Enrollment</b>	5%	5%	7%	10%	72%	100%
<b>Non-Ivy-League Universities</b>	1,777	2,067	2,929	4,426	26,918	39,022
<b>Percent of Total Enrollment</b>	5%	5%	8%	11%	69%	100%

those scoring that high or higher in the national population come from families in the bottom two income quintiles. To reach such a goal, then, the COFHE schools would have to increase their share of low-income students by nearly 30 percent, given that 1420 SAT score as a minimum standard of ability. If a score of 1300 or above were considered adequate, 16 percent of those who qualify would need to come from the bottom two quintiles—

increasing the current COFHE share by more than half. Finally, an ability cutoff of 1110 would mean that 22 percent of COFHE schools’ students would have to come from the lowest 40 percent of the family income distribution—more than twice as high as their current share. Again, the lower the ability threshold selected, the larger the share of students who would come from the bottom two income quintiles.

A reasonable target for these highly selective schools would be for them to have a share of high-ability low-income students that mirrored the national population. It should be quite straightforward simply to compare the distribution of COFHE students by income with that of the national population (as shown in Table 1) for particular ability levels. Differences in enrollment levels would be clear and could be addressed.

With regard to establishing an appropriate minimum test score threshold, we know that in the average COFHE school, 25 percent of students score under 1353 and 25 percent score over 1546. The lowest average score at the 25th percentile for any school is 1160 and the highest is 1400. At the high end, the lowest 75th percentile score is 1375 and the highest is 1580. So it seems reasonable to focus on the income distributions beginning at a minimum score of 1110 and moving through all the ability levels shown in Table 1, up to 1600.

Looking at the most modest definition of “high ability,” Table 1 shows that 22 percent of national test takers with scores of 1110 and above are in the two lowest income quintiles. The 10 percent low-income enrollment at the COFHE schools suggests, then, a gap of 12 percentage points. To close that gap, the COFHE schools would need to increase their enrollment of low-income students each year by 120

percent—that is, more than double the number of such entering students, from the current level of approximately 2,750 to 6,050. The good news is that in 2003, more than 109,000 students from the two lowest income quintiles scored 1110 and above, so at that minimum test score threshold the answer to the question of whether there are enough high-ability low-income students out there for the COFHE schools to realistically be able to mirror the national population is an unequivocal yes.

At the 1110-and-above test score level, reaching the goal of enrolling 6,050 students from the two lowest income quintiles entering COFHE schools each year would mean enrolling 5.5 percent of 109,000, the total available national population. The same figures at other test score levels are as follows: at 1220 and above, COFHE schools

would need to enroll 11.5 percent of approximately 43,600 possible students; at 1300 and above, 22 percent of the nearly 20,000 possible students would need to enroll; at 1420 and above, 85 percent of the roughly 4,300 students from the two lowest income quintiles who scored that high would have to enroll.

It should also be noted that due to the widespread nonreporting of income, the national supply of high-ability low-income students may be significantly greater than indicated above if low-income students are less likely to report income—as other available data suggest.

## Conclusion

There are two parts to the question, “Are they out there?” One looks at plausible targets for the expansion of low-income enrollment at the highly selective COFHE schools by comparing the income distribution of the schools’ present students with that of the national population of high-ability low-income students. As we have seen, the data suggest that the COFHE schools have smaller shares of low-income students than the national population at a variety of ability levels. The other part of the question asks whether, given such targets defined as shares, the numbers are out there—are there enough such students in the United States to realistically allow these schools to mirror the national low-income distribution of highly able low-income students? The answer to that question depends on the definition of “high ability” adopted; as that definition is relaxed, the population of available low-income students increases quickly. At ability levels that seem quite reasonable in light of the test scores of students currently enrolled at COFHE schools—say, 1220 to 1420—there appear to be plenty of low-income high-ability students out there.

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