Access to Opportunity
Strategies for Improving College Selection Among Underrepresented Students

Michael Hurwitz, Associate Policy Research Scientist
Access to Opportunity

Students deserve the opportunities they have earned.

College Board mission includes a set of targeted initiatives to identify and break down barriers that prevent students from realizing those opportunities.

– Access to rigorous coursework in high school
– Actionable information about colleges best suited to their needs and demonstrated capabilities

Access to Opportunity initiatives are based on research findings that show measurable outcomes for students.
Postsecondary Undermatch

• Academic undermatch occurs when a student’s academic credentials permit him/her access to a college or university that is more selective than the postsecondary alternative he/she actually chooses.

Very quick overview:

- How prevalent is undermatch?
- Who undermatches and how can we predict it?
- Why do students undermatch?
- Why is undermatch problematic for student outcomes?
- How can undermatch be ameliorated?
Postsecondary Undermatch

What the Research Does NOT Indicate

• Attending a four-year college is always better than attending a two-year college.

• Students should always attend the most selective college to which they are capable of securing admission.

• Personal fit between student and college is secondary to academic fit.
How Prevalent is Undermatch?

Two pioneering studies examined undermatch on local scales

• Study 1:
  Among students from the high school class of 1999 (in North Carolina) qualified to attend a selective college, 40 percent undermatched.
  (Bowen, Chingos, McPherson, 2009).

• Study 2:
  In the Chicago public schools, two-thirds of the high school class of 2005 undermatched.
  (Roderick et al., 2008).
How Prevalent is Undermatch?

Establish a definition of undermatch

**Most Competitive:** Emory, Brown, Duke, MIT, Pomona, Stanford, UVA, Williams, Yale

**Highly Competitive:** Georgia Tech, University of Michigan, University of Texas

**Very Competitive:** University of Georgia, Brigham Young, LSU, Michigan State, Rutgers, Spelman

**Competitive:** Kennesaw State, Eastern Michigan University, Seton Hall University, Texas Tech, UNC-Charlotte

**Less Competitive:** Savannah State, Texas A&M-Corpus Christi, University of Texas- Arlington

**Noncompetitive:** Thomas Univ (GA), Montana State University, University of Akron, University of Texas-El Paso
How Prevalent is Undermatch?

Establish a definition of undermatch

<table>
<thead>
<tr>
<th>Access to:</th>
<th>Very Selective</th>
<th>Selective</th>
<th>Somewhat Selective</th>
<th>Nonselective</th>
<th>Two-Year</th>
<th>No College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Selective</td>
<td>Match</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selective</td>
<td>Match</td>
<td>Undermatch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat Selective</td>
<td>Match</td>
<td>Undermatch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonselective</td>
<td>Match</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Substantial Undermatch</td>
</tr>
<tr>
<td>Two-Year</td>
<td>Match</td>
<td>Undermatch</td>
<td></td>
<td></td>
<td>Substantial Undermatch</td>
<td></td>
</tr>
</tbody>
</table>
How Prevalent is Undermatch?  
Nationally Representative 2004 High School Graduates

Source: Smith, Pender, & Howell (2012); based on nationally representative ELS:2004 data.

**Appendix Table 2:**
Extent of Academic Undermatching — College Access versus College Choice
2004 Cohort of Graduating High School Seniors

<table>
<thead>
<tr>
<th>Access to:</th>
<th>Very Selective</th>
<th>Selective</th>
<th>Somewhat Selective</th>
<th>Nonselective</th>
<th>Two-Year</th>
<th>No College</th>
<th>Percent Undermatch</th>
<th>Percent Substantial Undermatch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Selective</td>
<td>58.5</td>
<td>25.7</td>
<td>13.1</td>
<td>1.4</td>
<td>1.0</td>
<td>0.3</td>
<td>41.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Selective</td>
<td>20.8</td>
<td>31.9</td>
<td>31.3</td>
<td>4.5</td>
<td>8.6</td>
<td>2.9</td>
<td>47.3</td>
<td>16.0</td>
</tr>
<tr>
<td>Somewhat Selective</td>
<td>6.0</td>
<td>21.5</td>
<td>37.4</td>
<td>9.2</td>
<td>21.0</td>
<td>4.9</td>
<td>35.1</td>
<td>25.9</td>
</tr>
<tr>
<td>Nonselective</td>
<td>2.5</td>
<td>8.4</td>
<td>40.7</td>
<td>13.0</td>
<td>26.8</td>
<td>8.6</td>
<td>35.4</td>
<td>8.6</td>
</tr>
<tr>
<td>Two-Year</td>
<td>1.1</td>
<td>2.6</td>
<td>9.5</td>
<td>6.2</td>
<td>39.4</td>
<td>41.2</td>
<td>41.2</td>
<td>—</td>
</tr>
<tr>
<td>Total (by enrolled)</td>
<td>8.8</td>
<td>13.1</td>
<td>21.5</td>
<td>6.8</td>
<td>27.2</td>
<td>22.7</td>
<td>40.9</td>
<td>16.1*</td>
</tr>
</tbody>
</table>

**Match** | **Undermatch** | **Substantial Undermatch**

Compare to 48.9% in 1992
Social Equity Problem

Academic Undermatch by SES and by Cohort

How Prevalent is Undermatch?

SAT Takers who Graduated from High School in 2010

<table>
<thead>
<tr>
<th>Access to:</th>
<th>Very Selective</th>
<th>Selective</th>
<th>Somewhat Selective</th>
<th>Nonselective</th>
<th>Two-Year</th>
<th>No College</th>
<th>Total (by access)</th>
<th>Percent Undermatch</th>
<th>Percent Substantial Undermatch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Selective</td>
<td>55.7</td>
<td>20.1</td>
<td>11.2</td>
<td>1.3</td>
<td>3.2</td>
<td>8.5</td>
<td>13.9</td>
<td>44.3</td>
<td>24.2</td>
</tr>
<tr>
<td>Selective</td>
<td>25.9</td>
<td>27.1</td>
<td>24.2</td>
<td>3.5</td>
<td>9.4</td>
<td>10.0</td>
<td>18.1</td>
<td>47.0</td>
<td>22.9</td>
</tr>
<tr>
<td>Somewhat Selective</td>
<td>10.6</td>
<td>22.4</td>
<td>32.3</td>
<td>5.8</td>
<td>16.4</td>
<td>12.5</td>
<td>19.1</td>
<td>34.7</td>
<td>28.9</td>
</tr>
<tr>
<td>Nonselective</td>
<td>4.6</td>
<td>14.0</td>
<td>33.5</td>
<td>8.1</td>
<td>23.8</td>
<td>16.0</td>
<td>16.2</td>
<td>39.8</td>
<td>16.0</td>
</tr>
<tr>
<td>Two-Year</td>
<td>1.3</td>
<td>4.5</td>
<td>20.6</td>
<td>10.6</td>
<td>36.5</td>
<td>26.5</td>
<td>32.8</td>
<td>26.5</td>
<td>--</td>
</tr>
<tr>
<td>Total (by enrolled)</td>
<td>15.6</td>
<td>15.7</td>
<td>24.3</td>
<td>6.7</td>
<td>21.1</td>
<td>16.7</td>
<td>100.0</td>
<td>36.4</td>
<td>23.2</td>
</tr>
</tbody>
</table>

Source: Unpublished calculations based on College Board data; SAT takers from class of 2010.

Unpublished data/calculations.
Do not circulate or cite.
Postsecondary Undermatch

- How prevalent is undermatch?
  - Prevalent! 40% of high school graduates or ~250,000 college-ready SAT takers in each cohort.

- Who undermatches and how can we predict it?
  - Why do students undermatch?
  - Why is undermatch problematic for student outcomes?
  - How can undermatch be ameliorated?
Who Undermatches?
All College-Ready SAT Takers, 2010 Cohort

Unpublished data/calculations.
Do not circulate or cite.
How Can We Predict Undermatch?
Extending Analyses to Regression Framework

• When you have data on students’ academic achievement, demographics, family attributes, and enrollment choices, regression analysis can be used to predict who will undermatch.

• Primary usefulness of regression is “holding all else constant”
  o Isolates, for example, undermatch risk for low-income students among those with the same academic credentials, the same race/ethnicity, the same gender, the same parental education and so on.
  o Apples to apples comparison… better than simple bar charts and just as fast!
How Can We Predict Undermatch?
Extending Analyses to Regression Framework

No controls

Build a model that accounts for as many factors as possible that might influence a student’s probability of undermatching.

Control for characteristics:
- **Demographic**: race, gender
- **Family**: parental income and education
- **Academic**: SAT score, GPA, status as an AP test-taker,
- **High school**: urbanicity, %Free/Reduced Lunch, %URM
How Can We Predict Undermatch?
Extending Analyses to Regression Framework

Unpublished data/calculations. Do not circulate or cite.
Postsecondary Undermatch

- How prevalent is undermatch?
  - Prevalent! 40% of high school graduates or ~250,000 college-ready SAT takers in each cohort.

- Who undermatches and how can we predict it?
  - Low-income students, first-generation students, males, AP non-participants.

- Why do students undermatch?

- Why is undermatch problematic for student outcomes?

- How can undermatch be ameliorated?
Why Do Students Undermatch?

Differences in student outcomes can be traced back to differences in college application behavior.

Equity in College Choice

Published: March 16, 2013

How Top Students of Different Incomes Apply for College

A new study found that a majority of high-achieving high school seniors from low-income families did not apply to any selective colleges.

*In the study, students were considered high-achieving if they could very likely gain admission to a selective college, which translates into roughly the top 4 percent of high school graduates, based on scores and grades.

By THE NEW YORK TIMES

Why Do Students Undermatch?

- Financial considerations
- Distance from home
- Information asymmetries
- College-going culture
- Isolation (geographic or peer achievement)
- Application behavior
- Role of High Schools
- Role of Colleges
- Role of Communities

Emphasis on changing student behavior should be tempered with information on how to change institutional behavior.
Why Do Students Undermatch?
Descriptive Evidence on High Schools from College Board Data

Source: Hurwitz, Smith, Howell, & Pender (2012); Data from SAT takers from class of 2006.
Why Do Students Undermatch?
Descriptive Evidence on State Undermatch from College Board Data

Source: Unpublished calculations based on College Board data; SAT takers from class of 2010.

Unpublished data/calculation.
Do not circulate or cite.
Postsecondary Undermatch

- How prevalent is undermatch?
  - Prevalent! 40% of high school graduates or ~250,000 college-ready SAT takers in each cohort.

- Who undermatches and how can we predict it?
  - Low- and middle-income students, first-generation students, males, Hispanic students, AP non-participants.

- Why do students undermatch?
  - They do not apply to matched colleges for reasons related to financial concerns, geography, information asymmetries.

- Why is undermatch problematic for student outcomes?
- How can undermatch be ameliorated?
Why is Undermatch Problematic?
Descriptive Evidence on Completion Gaps from College Board Data

### Bachelors Completion Rate Within Six Years

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Students Who Matched</th>
<th>Students Who Undermatched</th>
<th>Percentage Point Gap by Undermatch Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>All SAT Takers in 2004 Cohort</td>
<td>46.3</td>
<td>19.5</td>
<td>-26.8</td>
</tr>
<tr>
<td>College-Ready SAT Takers</td>
<td>70.1</td>
<td>29.9</td>
<td>-40.2</td>
</tr>
<tr>
<td>High-Achieving SAT Takers</td>
<td>83.7</td>
<td>51.6</td>
<td>-32.1</td>
</tr>
</tbody>
</table>

Unpublished data/calculation.
Do not circulate or cite.
Why is Undermatch Problematic?
Descriptive Evidence on Completion Gaps from College Board Data

Source: Pender, Hurwitz, Smith and Howell (2012).
Why is Undermatch Problematic?
Bachelor’s Completion Rate Gaps by Selectivity & Race/Ethnicity

- **Most Competitive**
  - Black: 83
  - Hispanic: 84
  - Asian: 86
  - White: 89
  - Black-white completion gap: 6 points

- **Highly Competitive**
  - Black: 67
  - Hispanic: 70
  - Asian: 76
  - White: 76

- **Very Competitive**
  - Black: 49
  - Hispanic: 54
  - Asian: 60
  - White: 64

- **Competitive**
  - Black: 35
  - Hispanic: 42
  - Asian: 47
  - White: 51
  - Black-white completion gap: 16 points

Source: Unpublished calculations based on IPEDS data.
Postsecondary Undermatch

- **How prevalent is undermatch?**
  - Prevalent! 40% of high school graduates or ~250,000 college-ready SAT takers in each cohort.

- **Who undermatches and how can we predict it?**
  - Low- and middle-income students, first-generation students, males, Hispanic students, AP non-participants.

- **Why do they undermatch?**
  - They do not apply to matched colleges for reasons related to financial concerns, geography, information asymmetries.

- **Why is undermatch problematic for student outcomes?**
  - Lower rates of college degree completion, longer time-to-degree, worse labor market outcomes.

- **How can undermatch be ameliorated?**
How Can Undermatch Be Ameliorated?
Correct student misperceptions about how much college costs.

**Average Total Debt Levels of Bachelor’s Degree Recipients, Public Four-Year Colleges and Universities in 2012 Dollars, 1999-2000 to 2011-12**

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Per Borrower</th>
<th>Per Bachelor’s Degree Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>99-00</td>
<td>$20,800</td>
<td>$11,200</td>
</tr>
<tr>
<td>00-01</td>
<td>$20,400</td>
<td>$10,600</td>
</tr>
<tr>
<td>01-02</td>
<td>$20,500</td>
<td>$10,600</td>
</tr>
<tr>
<td>02-03</td>
<td>$20,900</td>
<td>$11,000</td>
</tr>
<tr>
<td>03-04</td>
<td>$21,000</td>
<td>$11,400</td>
</tr>
<tr>
<td>04-05</td>
<td>$21,500</td>
<td>$11,800</td>
</tr>
<tr>
<td>05-06</td>
<td>$21,000</td>
<td>$12,100</td>
</tr>
<tr>
<td>06-07</td>
<td>$21,500</td>
<td>$11,900</td>
</tr>
<tr>
<td>07-08</td>
<td>$21,000</td>
<td>$11,900</td>
</tr>
<tr>
<td>08-09</td>
<td>$21,000</td>
<td>$11,900</td>
</tr>
<tr>
<td>09-10</td>
<td>$23,200</td>
<td>$13,000</td>
</tr>
<tr>
<td>10-11</td>
<td>$24,200</td>
<td>$13,900</td>
</tr>
<tr>
<td>11-12</td>
<td>$25,000</td>
<td>$14,300</td>
</tr>
</tbody>
</table>

(Percentage of Students Who Borrowed)

SOURCE: The College Board, *Trends in Student Aid 2013*, Figure 10A.
How Can Undermatch Be Ameliorated?
Correct student misperceptions about how much college costs.

Average Total Debt Levels of Bachelor’s Degree Recipients, Private Nonprofit Four-Year Colleges and Universities in 2012 Dollars, 1999-2000 to 2011-12

SOURCE: The College Board, 'Trends in Student Aid 2013', Figure 10A.
How Can Undermatch Be Ameliorated?
Correct student misperceptions about how much college costs.

**Total Amount Borrowed by 2009 by Students Beginning Postsecondary Education in 2003-04, by Degree Attainment**

<table>
<thead>
<tr>
<th>Degree Attainment</th>
<th>Did Not Borrow</th>
<th>$1 to $10,000</th>
<th>$10,001 to $20,000</th>
<th>$20,001 to $30,000</th>
<th>$30,001 to $50,000</th>
<th>$50,001 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>43%</td>
<td>25%</td>
<td>16%</td>
<td>8%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Attained Bachelor’s Degree (31%)</td>
<td>36%</td>
<td>12%</td>
<td>22%</td>
<td>14%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Attained Associate Degree (9%)</td>
<td>42%</td>
<td>24%</td>
<td>18%</td>
<td>9%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Attained Certificate (9%)</td>
<td>39%</td>
<td>45%</td>
<td>12%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>No Degree, Still Enrolled (15%)</td>
<td>39%</td>
<td>27%</td>
<td>18%</td>
<td>9%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>No Degree, Left Without Return (35%)</td>
<td>52%</td>
<td>30%</td>
<td>11%</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Source:** The College Board, *Trends in Student Aid 2013*, Figure 11C.
How Can Undermatch Be Ameliorated?
Correct student misperceptions about how much college costs.
How Can Undermatch Be Ameliorated?
Correct student misperceptions about how much college costs. More selective institutions are not always more expensive ones.

<table>
<thead>
<tr>
<th>NET PRICE</th>
<th>AVERAGE NET PRICE FOR FULL-TIME BEGINNING STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-time beginning undergraduate students who were awarded grant or scholarship aid from federal, state or local governments, or the institution.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>2009-2010</th>
<th>2010-2011</th>
<th>2011-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average net price</td>
<td>$24,831</td>
<td>$25,094</td>
<td>$26,458</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AVERAGE NET PRICE BY INCOME</th>
<th>2009-2010</th>
<th>2010-2011</th>
<th>2011-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 – $30,000</td>
<td>$12,499</td>
<td>$14,612</td>
<td>$17,035</td>
</tr>
<tr>
<td>$30,001 – $48,000</td>
<td>$15,271</td>
<td>$14,767</td>
<td>$16,173</td>
</tr>
<tr>
<td>$48,001 – $75,000</td>
<td>$21,785</td>
<td>$22,106</td>
<td>$24,277</td>
</tr>
<tr>
<td>$75,001 – $110,000</td>
<td>$26,968</td>
<td>$28,571</td>
<td>$28,962</td>
</tr>
<tr>
<td>$110,001 and more</td>
<td>$40,890</td>
<td>$41,803</td>
<td>$41,691</td>
</tr>
</tbody>
</table>

Emory University
How Can Undermatch Be Ameliorated?
Put more school counselors in high schools.

• Causal Research on the impact of adding a school counselor to high schools
  o Adding a school counselor to a high school increases four-year college-going rates by 10 percentage points.
  o *Translation:* if you add a school counselor to a high school where 40% of students were enrolling in four-year colleges, we would predict that 50% of students will enroll in four-year colleges.

  o Research Brief:  
      o Full academic paper by Hurwitz and Howell forthcoming in Journal of Counseling and Development (2014)
How Can Undermatch Be Ameliorated?
Encourage students to submit more applications (within reason).

Recent causal research suggests that a student induced into applying to more colleges has a greater probability of matriculating (Smith, 2012).

Increasing the number of college applications from 1 to 2 increases the probability that a student will enroll by 40%.

Increasing the number of college applications from 2 to 3 increases the probability that a student will enroll by 10%.
How Can Undermatch Be Ameliorated?

Encourage students to apply to matched colleges. It may be easier than you think.

- Hot-off-the-press research identifies innovative approaches to reduce undermatch among high achieving, low-income students.
- Expanding College Opportunities (ECO) intervention conducted by Caroline Hoxby (Stanford) and Sarah Turner (UVA)
  - Paper mailing intervention cost about $6 per student
  - Low-income, very-high-achieving students given semi-customized information on net prices and completion rates at variety of match colleges, as well as college application fee waivers to over 170 selective colleges.
How Can Undermatch Be Ameliorated?
Impact generated by *Expanding College Opportunities*

- **Students who received the intervention materials:**
  - Applied to 48% more colleges
  - Applied to colleges where the median SAT score was 86 points higher
  - Applied to colleges with 17% higher four-year grad rates.
  - Were 42% more likely to apply a highly selective private university
  - Were 38% more likely to apply to a highly selective liberal arts college
Access to Opportunity

Strategies for Improving College Selection Among Underrepresented Students

Michael Hurwitz, Associate Policy Research Scientist
How Prevalent is Undermatch?
Establish a definition for undermatch

Discussion Question #1:
Drawing from your professional experiences, how would you determine whether a student is undermatched?
Estimated Cumulative Full-Time Earnings (in 2011 Dollars) Net of Loan Repayment for Tuition and Fees, by Education Level

SOURCES: U.S. Census Bureau, 2012, Table PINC-03; Baum and Ma, 2012; calculations by the authors.
Estimated Cumulative Full-Time Earnings (in 2011 Dollars) Net of Loan Repayment for Tuition and Fees, by Education Level

Gender and Education Level

- Female
- Male

CollegeBoard Advocacy & Policy Center
Who Undermatches?

Discussion Question #2: Are students from certain backgrounds more likely to undermatch?
Why Do Students Undermatch?

Discussion Question #3: Are there any other forces contributing to student undermatch?
Measuring the Impact of a School Counselor

• If I could design a study to determine the causal impact of an additional high school counselor, I would choose an experiment.
Measuring the Impact of a School Counselor

• Compare college enrollment rates of students in schools that randomly got an additional counselor to the students in schools that did not.

• Causal result! Good for policy decisions.
Closely mimic the random helicopter drop by looking at states that have mandated student-to-counselor ratios

<table>
<thead>
<tr>
<th>State</th>
<th>High School Maximum Student-to-Counselor Ratio</th>
<th>College-Going Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama(^1)</td>
<td>One counselor up to 499 students; 1.5 counselors up to 749 students; two counselors up to 999 students; 2.5 counselors up to 1,249 students; three counselors up to 1,499 students; one additional counselor for each additional 250 students</td>
<td>34%</td>
</tr>
<tr>
<td>Arkansas(^2)</td>
<td>One counselor per 450 students</td>
<td>41%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>One counselor per 450 students</td>
<td>43%</td>
</tr>
<tr>
<td>Maine</td>
<td>One counselor per 250 students</td>
<td>50%</td>
</tr>
<tr>
<td>Missouri(^3)</td>
<td>One counselor per 301–375 students (desirable); one counselor per 500 students (minimum)</td>
<td>37%</td>
</tr>
<tr>
<td>Montana(^4)</td>
<td>One counselor per 400 students</td>
<td>52%</td>
</tr>
<tr>
<td>Nebraska(^2)</td>
<td>One counselor per 450 students</td>
<td>51%</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>One counselor per 300 students</td>
<td>54%</td>
</tr>
<tr>
<td>North Dakota(^2)</td>
<td>One counselor per 450 students</td>
<td>50%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>One counselor per 450 students</td>
<td>37%</td>
</tr>
<tr>
<td>Utah</td>
<td>One counselor per 400 students</td>
<td>29%</td>
</tr>
<tr>
<td>Vermont</td>
<td>One counselor per 300 students</td>
<td>51%</td>
</tr>
<tr>
<td><strong>All 50 states + the District of Columbia</strong></td>
<td><strong>No national ratio policy</strong></td>
<td><strong>38%</strong></td>
</tr>
</tbody>
</table>
How Can Undermatch Be Ameliorated?
As an added bonus, students experience an increase in bachelor’s degree completion probability at little or no cost.

<table>
<thead>
<tr>
<th>SAT Range</th>
<th>High Income (&gt; $122,000)</th>
<th>Low Income (&lt; $50,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completion Probability</td>
<td>Net tuition and fees</td>
</tr>
<tr>
<td>(Avg. SAT &lt; 1000)</td>
<td>52%</td>
<td>$6,632</td>
</tr>
<tr>
<td>(Avg. SAT 1000-1099)</td>
<td>59%</td>
<td>$7,834</td>
</tr>
<tr>
<td>(Avg. SAT 1100-1199)</td>
<td>72%</td>
<td>$9,636</td>
</tr>
<tr>
<td>(Avg. SAT 1200-1299)</td>
<td>78%</td>
<td>$14,322</td>
</tr>
<tr>
<td>(Avg. SAT &gt; 1300)</td>
<td>85%</td>
<td>$26,237</td>
</tr>
</tbody>
</table>

What if the student who was thinking about College 1 considers College 2?
• If he is from a **high income family**, we predict that the 7 percentage point boost in his completion probability costs him an additional $1,202 per year.
• If he is from a **low income family**, we predict that the 6 percentage point boost in his completion probability is basically **FREE** because of financial aid.
Enrollment and Number of Counselors

Example with 450-to-1 mandated ratio

Zoom in around the ratio
Theoretical relationship between enrollment and four-year college-going rates with mandated student-to-counselor ratio of 450-to-one.

Enrollment, # of Counselors, & College Enrollment

Example with 450-to-1 mandated ratio

- Ratio = 445-to-1
- Ratio = 227-to-1
Theoretical relationship between enrollment and four-year college-going rates with mandated student-to-counselor ratio of 450 to one.
Measuring the Impact of a School Counselor

• Research Question:

What is the impact of an additional high school counselor on students’ four-year college enrollment rates?

○ 10 percentage points

○ Translation: if you add a school counselor to a high school where 40% of students were enrolling in four-year colleges, we would predict that 50% of students will enroll in four-year colleges.
Postsecondary Undermatch

- How prevalent is undermatch?
  - Prevalent! 40% of high school graduates or ~250,000 college-ready SAT takers in each cohort.

- Who undermatches and how can we predict it?
  - Low- and middle-income students, first-generation students, males, Hispanic students, AP non-participants.

- Why do they undermatch?
  - They do not apply to matched colleges for reasons related to financial concerns, geography, information asymmetries.

- Why is undermatch problematic for student outcomes?
  - Lower rates of college degree completion, longer time-to-degree, worse labor market outcomes.

- How can undermatch be ameliorated?
  - Dismantle information barriers, make students aware of distinction between sticker price and net price, more applications and more match applications.
Questions / Discussion
706,608 domestic, **college-ready** (M+CR>1000)
College-Bound Seniors in 2010

- 191,740 (SAT 1250+) who are admissible to *Very Selective* Colleges
- 251,035 (SAT 1110-1240) who are admissible to *Selective* Colleges
- 263,833 (SAT 1000-1100) who are admissible to *Somewhat Selective* Colleges

8.5% were not enrolled
9.9% were not enrolled
12.5% were not enrolled

10.5% (74,335) of the 2010 college-ready seniors who we predict had access to a 4-year institution **appeared not to enroll.**

* Severely overstated due to issues related to the National Student Clearinghouse data.

Unpublished data/calculations. Do not circulate or cite.
706,608 domestic, **college-ready** (M+CR>1000) College-Bound Seniors in 2010

- **191,740 (SAT 1250+)** who are admissible to **Very Selective Colleges**
  - 3.2% chose a 2-year
  - 8.5% were not enrolled

- **251,035 (SAT 1110-1240)** who are admissible to **Selective Colleges**
  - 9.4% chose a 2-year
  - 9.9% were not enrolled

- **263,833 (SAT 1000-1100)** who are admissible to **Somewhat Selective Colleges**
  - 16.4% chose a 2-year
  - 12.5% were not enrolled

**10.3% (72,834) of the 2010 college-ready seniors who we predict had access to a 4-year institution undermatched at a 2-year institution.**

Unpublished data/calculations. Do not circulate or cite.
706,608 domestic, **college-ready** (M+CR>1000) College-Bound Seniors in 2010

- **191,740** (SAT 1250+) who are admissible to *Very Selective* Colleges
  - 88.3% chose a 4-year
  - 3.2% chose a 2-year
  - 8.5% were not enrolled

- **251,035** (SAT 1110-1240) who are admissible to *Selective* Colleges
  - 80.7% chose a 4-year
  - 9.4% chose a 2-year
  - 9.9% were not enrolled

- **263,833** (SAT 1000-1100) who are admissible to *Somewhat Selective* Colleges
  - 71.1% chose a 4-year
  - 16.4% chose a 2-year
  - 12.5% were not enrolled

**10.3%** (72,834) of the 2010 college-ready seniors who we predict had access to a 4-year institution **undermatched at a 2-year institution**.

Unpublished data/calculations. Do not circulate or cite.
706,608 domestic, college-ready (M+CR>1000) College-Bound Seniors in 2010

191,740 (SAT 1250+) who are admissible to Very Selective Colleges
- 106,811 chose very selective
- 35,582 chose selective
- 21,483 chose somewhat selective
- 2,482 chose nonselective

251,035 (SAT 1110-1240) who are admissible to Selective Colleges
- 65,044 chose very selective
- 67,900 chose selective
- 60,725 chose somewhat selective
- 8,832 chose nonselective

263,833 (SAT 1000-1100) who are admissible to Somewhat Selective Colleges
- 28,056 chose very selective
- 59,201 chose selective
- 85,088 chose somewhat selective
- 15,235 chose nonselective

20.4% (144,339) of the 2010 college-ready seniors undermatched at a 4-year institution.

Unpublished data/calculations. Do not circulate or cite.