# A path to college completion for disadvantaged students

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A college education can provide a path out of poverty, but low-income students face many obstacles along the way, from difficulty selecting a college that is the right "fit" to knowing about financial aid options. While overall college graduation rates are rising, the gap between the top and bottom income groups has widened considerably in the past four decades, at a time when the payoff to a college degree has dramatically increased. This article reviews current research on policies that could help increase college completion for low-income students.

## **College disparities**

Most low-income high school students hope to attend college, but actual enrollment rates do not reflect this aspiration. Around 30 percent of high school graduates in the lowest income quartile enter college, compared to 80 percent of graduates in the highest income quartile. In addition, those low-income students who do enter college are less likely to graduate than higher-income students.<sup>1</sup>

Over half of people from high-income families have a bachelor's degree by age 25, compared to fewer than 1 in 10 of those from low-income families.<sup>2</sup> Rates of college entry and completion have been rising overall, but have risen faster for those with higher incomes. Among those in the lowest income quartile, the proportion completing a bachelor's degree by age 25 rose from 5 percent for those born in the early 1960s to 9 percent for those born two decades later, an increase of only 4 percentage points. For the highest quartile, this rate rose by 18 percentage points over the same period, from 36 percent to 54 percent.<sup>3</sup>

The disparity in college success by income level is not fully explained by differences in academic preparedness; even after controlling for academic achievement at college entry, students from low-income families with less-educated parents have lower college graduation rates than their higher-income peers with more-educated parents.<sup>4</sup>

## What's so great about a college degree?

These disparities matter because educational attainment is increasingly important to economic success. In 2010, 59 percent of U.S. jobs required applicants to have at least some

postsecondary education or training, up from 28 percent in 1973.<sup>5</sup> This proportion is projected to reach 65 percent by 2020.<sup>6</sup> A college degree also greatly increases the chance of economic mobility; for those born into the lowest economic quintile, the probability of making it into one of the top two quintiles is 41 percent with a college degree, but only 14 percent without a degree.<sup>7</sup> Postsecondary education may also have noneconomic positive effects on people's lives, including enhanced happiness, better decision-making, more patience, and longer-term thinking.<sup>8</sup>

# **Impediments**

With so many benefits to educational attainment, gaining a better understanding of what stands in the way for such a large proportion of disadvantaged youth would inform policies to smooth their path to college completion. Low-income students face unique challenges in each of the many steps necessary for college success. Research findings on the major impediments are briefly explored below.

Disadvantaged students face challenges from the beginning of the college-planning process. First, they may not be aware of all the financial aid opportunities that are available to them, and may not have accurate information about the actual cost of attending college, or the relative costs of attending particular colleges. The perception that college is out of reach financially can not only contribute to "undermatching," where students select schools that will not provide the level of academic challenge they need, but may also lead some students to give up altogether on the idea of attending college much earlier in their K–12 schooling.

A significant proportion of low-income students who graduate from high school and intend to attend college in the fall do not follow through, a phenomenon known as "summer melt." Summer attrition rates for students who intend to attend college range are generally around 10 percent to 20 percent, with higher rates for low-income students, and rates of around 40 percent for those planning to attend community college. Summer melt can occur for many reasons described above, including lack of role models and lack of resources and information needed to complete financial aid forms and manage deadlines.

And while many low-income students who enroll in college are academically prepared, some require developmental (or remedial) education before they can begin earning college credits. Even students who enter college may be underprepared for core subjects such as English and math. Traditional developmental strategies do not appear to be

effective in helping students to catch up, and may be harmful to students who are incorrectly assigned to remediation based on their poor performance on a single test. <sup>12</sup> Students who begin college with college-prerequisite courses often never move on to credit classes, a college-completion impediment discussed more below with promising research findings on a possible remedy.

Beyond facing a lack of support and resources to successfully navigate college preparation and application, including taking standardized tests, completing applications, and obtaining financial aid, many low-income students who survive the application and admissions gauntlet find themselves attending a college that is not a good fit. There is evidence that attending a school that matches a student's own academic ability provides substantial advantages in the chances of graduating from college. Students of all socioeconomic backgrounds who attend selective schools, which tend to have more support resources available, are more likely to graduate, complete college more quickly, and earn more after graduation compared to those who attend non-selective schools, even after controlling for academic ability.<sup>13</sup>

This is a significant problem. Just over 40 percent of all high school graduates in 2004 were undermatched, a phenomenon that is more common among students from low-income families. <sup>14</sup> The great majority of high-achieving low-income students do not apply to selective colleges, even though selective schools would usually cost these students less than the two-year and less competitive four-year colleges to which they do apply, due to generous financial aid often offered by more selective schools. <sup>15</sup> Choosing an insufficiently challenging school is not an issue only for high-achieving students; even students who do not qualify for the most selective schools are still likely to choose schools that are below their academic ability level. <sup>16</sup>

While academic undermatching appears to have a number of negative effects, there is little evidence that students perform worse at institutions where their own academic ability is below average for the school. A study that made use of a natural admissions experiment at the University of California found that while students who were overmatched earned fewer credits compared to those who attended less demanding schools, they earned similar grades, and were less likely to drop out than they would have been at less demanding schools.<sup>17</sup>

Finally, once enrolled in college, low-income students continue to face challenges in persisting and completing a degree, making them more likely to drop out of college before completing a degree than higher-income students. They may have to work longer hours while going to school, and may need to take on a reduced number of credits in order to balance other responsibilities. Low-income students are also more likely than high-income students of similar academic ability to stop and restart college, often at multiple institutions; these complex college pathways appear to be less effective ways to complete degrees in a timely manner.<sup>18</sup>

# **Increasing college graduation rates**

A lot of research has explored how to increase college graduation rates for low-income students. What follows are some promising interventions that appear to have the potential for increasing college enrollment and subsequent graduation rates, some of which are surprisingly inexpensive.

#### Improving college preparedness

College preparation begins well before students' senior year in high school. Therefore, it is important to get low-income students thinking about and planning for college early in their school careers. Many of the school-level changes needed to increase preparedness would likely require extensive systemic changes in schools (some of which are examined elsewhere in this issue of Focus). However, recent work by Daphna Oyserman and colleagues offers some simple interventions that may help students to make the connection between current schoolwork and future success, and to find motivation to persist with work that they find challenging. In interviews of eighth-graders, researchers found that although the great majority stated that they planned to attend college, only half pictured themselves working in a field that demanded a college education. Even among those with the same prior grade point average (GPA), those who expected to have a career that required a college degree spent more time on homework.<sup>19</sup> Similarly, when seventh-graders were presented data on average earnings in the United States that emphasized the salary advantage of those in educationdependent jobs, eight times as many of them completed an optional extra-credit assignment, compared to their peers who did not see the presentation, which suggests that the message motivates students to work harder at school.20 A low-cost, school-based intervention incorporating these ideas and implemented as 11 short sessions over a six-week period was found to improve academic outcomes and reduce depression, school absence, and behavioral problems over a two-year follow-up period, as students moved from middle school to high school. For example, two years after the intervention, students who received it were spending nearly an hour more per week on homework than those in a control group, and had an average GPA of 1.6, compared to 1.4 for the control group. In each ninth grade semester, those in the treatment group also averaged 2.25 more days in school than those in the control group.21

#### **Enabling informed decisions**

Since, as already mentioned, low-income students and their families often have limited knowledge about financial aid opportunities, and may overestimate the cost of college, high schools could take action to improve financial literacy about college, and to provide assistance in meeting financial aid deadlines and completing forms. There is evidence that this type of assistance can increase both financial assistance application and college enrollment rates. In particular, one study found that while the provision of financial aid information alone had little effect on college outcomes for low-income students, the combination of that information

with assistance in completing the Free Application for Federal Student Aid (FAFSA) substantially increased the number of financial aid applications, the likelihood of receiving financial aid, and college enrollment, and decreased the probability of dropping out of college in the first year. In the year following the experiment, 42 percent of high school seniors and recent high school graduates whose parents received FAFSA assistance were enrolled in college, compared to 34 percent for a control group that did not receive assistance. By three years after the initial intervention, 36 percent of students whose parents received the treatment had been enrolled in college for at least two consecutive years, compared to 28 percent in the control group.<sup>22</sup> This intervention, including training, software, and participant incentive payments, cost less than \$100 per person.

A 2008 amendment to the Higher Education Act required all postsecondary institutions receiving federal financial assistance to provide college net price calculators as a tool to give students and their families a more accurate estimate of their actual costs to attend that institution. An analysis of the amendment implementation found that while the net price calculators of grant aid did match well with actual grant aid, the variation of individual financial aid packages among socioeconomically similar students can be large. The authors conclude that net price calculators are a helpful tool that could be improved by keeping cost information more current, and by providing information on the range of grant aid received in addition to the median amount, including aid provided by the institutions themselves.<sup>23</sup>

Increasing knowledge about postsecondary options and increasing the number of college applications could also help students enroll in colleges that are a good academic match for them and thereby address another impediment to college success. For students applying to only one or two colleges, the addition of one additional college application greatly increases the probability of enrollment.<sup>24</sup> Waiving fees, even small ones, could also encourage students to apply to more colleges. For example, an increase from three to four in the number of free ACT score reports that students could send to colleges resulted in more college applications for those taking the ACT test; low-income students taking the test also attended more selective colleges.<sup>25</sup> Prior to this policy change, it cost a student \$6 to send an additional ACT score beyond the three included scores.

For high-achieving low-income students, Caroline Hoxby and Sarah Turner have found that the Expanding College Opportunities project, which provided students with information packets about the application process and net costs for colleges, as well as application fee waivers, resulted in students applying to, and being enrolled in more colleges. The intervention also greatly increased the probability that students enrolled in an academic "match" college, where median student scores were within 5 percentiles of the student's own score. Compared to a control group, students in the treatment group (including those who did not end up

receiving the treatment) enrolled in colleges that were 19 percent more likely to be a match, and the colleges they enrolled in had graduation rates that were 6 percent higher. Since, as detailed above, attending a more selective school is associated with significant positive economic outcomes, this low-cost (about \$6 per student) and easily scalable intervention appears to be extremely cost-effective for high-achieving low-income students. It remains to be seen how well this approach would work for low-income students with lower academic achievement.

Some low-cost interventions have also been found to be effective at combatting summer melt, and helping collegebound low-income high school graduates to follow through with their plans. For example, an automated and personalized text messaging campaign that reminded students of tasks that were required prior to enrollment, and connected them to support from counselors, increased two-year college enrollment by 3 percentage points, at a cost of \$7 per student.27 The text messages had larger effects—from 4 to 7 percentage points—at sites where students had less access to college information and support with the application process. Another intervention that matched students with college-aged peer mentors to provide a first-hand perspective and encourage continuation with the college enrollment process increased enrollment at four-year colleges by 4.5 percentage points.<sup>28</sup> The peer mentor intervention cost \$80 per student. Another experiment that looked at the effects of providing mentoring and cash incentives to students late in their senior year of high school found that for women (but not men), those in the treatment group had an increase of 15 percentage points in the rate of college enrollment, compared to a control group.<sup>29</sup> Offering cash bonuses without mentoring had no effect.

While both reducing total college costs (as in the Obama administration's recent proposal to offer two years of free community college tuition for students going to school at least half time who maintain a GPA of 2.5 or higher and are making steady progress toward a degree or transferring to a four-year institution) and increasing the availability of financial aid would make college more affordable, neither option could be considered either simple or low-cost. However, a low-cost intervention such as increasing the availability of information about financial aid options as described above could help more low-income students find affordable options.

#### **Reducing attrition**

Even when low-income students successfully enter college, they may still face considerable challenges in completing a degree. As described above, undermatching may decrease the probability of college success, so strategies that increase the probability of a good match between students and colleges could also increase retention.

Another cause of attrition, students who arrive at college underprepared and who are thus required to take

developmental courses, presents a particular set of challenges. While increasing preparedness prior to college entry would clearly be helpful, some students will continue to enter college in need of additional academic support, and there are some feasible strategies for improving provision of that support. Some students are deterred just by the requirement to complete developmental classes, while the majority of those who enter such classes do not complete them and move on to classes that earn college credits.<sup>30</sup> While reforming the traditional system of developmental education cannot be considered a simple reform, the momentum to do so appears to be growing at both state and institution levels, and there are a number of promising models being implemented.

Some colleges have used alternative assessment strategies to identify students who would be more successful in traditional classes than in developmental ones. At one school that re-tests all students who are initially identified as requiring developmental coursework, offering them the opportunity to first take a brief refresher course, this strategy appears to give more students access to college-level coursework without impairing their academic success. For example, among all students who took the review course before re-testing, about 60 percent tested at least one level higher in English, and about 35 percent tested at least one level higher in math. These students all had similar or higher completion rates in the courses they were placed in following retesting, compared with their peers who placed directly into the course.<sup>31</sup> The refresher course, which takes about two hours to complete, is now available online, and is available both to students scheduled for re-testing and to those taking placement tests for the first time.

Community College Pathways use two different programs to help students in need of math remediation to achieve college math credits within one year, rather than the typical two-year sequence of classes that students often struggle to complete. About half of the students in these programs successfully complete within one year, compared to 6 percent of a comparison group of developmental math students who complete a college credit in one year, and 15 percent who complete the traditional two-year sequence and receive a college credit.<sup>32</sup>

A strategy to co-enroll students in an introductory collegelevel English class and a companion developmental course has been shown to increase completion of English 101, provide a more cost-effective way of completing that course, increase persistence to the next year, and increase the number of college-level courses and credits subsequently attempted and completed.<sup>33</sup>

There have also been some promising results from "learning communities" at community colleges, which group students together in a set of courses, usually for one semester, with supports such as extra advising or tutoring. For students in developmental education, learning communities that included enhanced support services were more effective.<sup>34</sup>

Some developmental programs are embedded in a larger array of services. One such program at the City University of New York requires students to attend college full time, and provides an array of supports over three years, including a tuition waiver that covers any gap between a student's financial aid and tuition and fees, special classes, enhanced advising, career services, public transportation cards, and free use of textbooks. A two-year evaluation of the program found that the program increased the likelihood that students would enroll in each subsequent semester by 8 to 10 percentage points, increased the average number of credits earned over two years by 25 percent (an increase equal to 13 percent of the college-level credits required to earn a degree), and increased the proportion of students who earned an associate's degree in two years from 8.7 percent to 14.5 percent, a difference of 5.7 percentage points. Students had to fulfill developmental education requirements before earning the college-level credits required to graduate. Data from the first cohort of students in the study indicate the effects are growing over time; by two-and-a-half years after entry, 33 percent of program group members had earned an associate's degree, compared with 18 percent of control group members, an increase of 15 percentage points.<sup>35</sup>

Outside the context of developmental education, on-campus supports have also been found to be important for student success. A study of a program that provides one-on-one student coaching found effects on persistence and graduation rates. Coaches contacted students regularly to help them articulate their long-term goals, connect their daily activities to those goals, and support them in building skills such as time management, self-advocacy, and study strategies. Two years after the intervention, students who were randomly assigned to a coach were 14 percent more likely to have remained in school. Four years after the intervention, the average graduation rate for those assigned to a coach was 35 percent, compared to 31 percent for the control group. Coaching was found to produce larger effects than financial aid, while also costing less to implement.<sup>36</sup>

A study at a large Canadian university found that for women (but not men), a program that combined scholarships with peer advising and facilitated study groups in the first year of college had effects that persisted through the second year. The average GPA in the second year for women in the program group was about 0.3 points higher than for women in the control group. Women in the program group also earned a quarter credit more than controls in the second year. A combination of support services and financial aid was more effective than financial aid alone. The average cost of financial aid and support services per participant was \$739.<sup>37</sup>

David Yeager and Gregory Walton, among others, have reported very promising results from simple social-psychological interventions designed to support students' sense of belonging at college.<sup>38</sup> For example, in one study first-year college students participated in a one-hour session where they read a short narrative that indicated that many

college students feel at first that they do not belong, but become more confident over time. Students were then asked to write an essay describing how their own experiences at college corresponded with this message, and to record a video of themselves reading their essay, ostensibly to help future college students in their own college transitions. Students who experienced this brief treatment had positive and sustained effects on academic and health outcomes compared to a control group, and these effects were particularly evident for a subgroup of African American students. The treatment tripled the percentage of black students with GPAs in the top quarter of their class, and reduced the black-white achievement gap by half. Three years after the intervention, blacks who had received the treatment reported better health and well-being compared to blacks in the control group.<sup>39</sup> Based on results from this and similar interventions, the University of Texas has added a 45-minute "mind-set" intervention to their required online pre-orientation for all new students.

#### **Conclusions**

Socioeconomic disparities in college attendance and completion are long-standing and complex problems. As the gap in college completion between those in low- and high-income families has widened, the value of having a degree has only increased. While the causes of this disparity are myriad, and there is no simple comprehensive solution, there are many promising interventions being implemented at points all along the path from middle school to college completion. These include interventions to increase college preparedness, increase knowledge about available college options and cost and economic assistance, improve the degree of academic matching between students and the colleges in which they enroll, rethink strategies for developmental education for students who arrive on campus underprepared, and provide on-campus support to help students stay on track and graduate.

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<sup>2</sup>Bailey and Dynarski, "Inequality in Postsecondary Education."

<sup>3</sup>Bailey and Dynarski, "Inequality in Postsecondary Education."

<sup>4</sup>W. G. Bowen, M. M. Chingos, and M. S. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities* (Princeton, NJ: Princeton University Press, 2009).

<sup>5</sup>A. P. Carnevale, N. Smith, and J. Strohl, "Help Wanted: Projections of Jobs and Education Requirements through 2018," Georgetown University Center on Education and the Workforce, June 2010.

<sup>6</sup>A. P. Carnevale, N. Smith, and J. Strohl, "Recovery: Job Growth and Education Requirements through 2020," Georgetown University Center on Education and the Workforce, June 2013.

<sup>7</sup>J. B. Isaacs, I. V. Sawhill, and R. Haskins, "Getting Ahead or Losing Ground: Economic Mobility in America," The Brookings Institution, 2008.

<sup>8</sup>P. Oreopoulos and K. G. Salvanes, "Priceless: The Nonpecuniary Benefits of Schooling," *The Journal of Economic Perspectives* 25, No. 1 (Winter 2011): 159–184.

<sup>9</sup>The lack of information about college costs is not unique to low-income families; upward bias in college tuition estimates is common, and does not vary greatly by family income or by parental education. However, less-advantaged parents are less likely to provide estimates of college tuition, and when they do provide estimates, tend to make larger errors. See E. Grodsky and M. T. Jones, "Real and Imagined Barriers to College Entry: Perceptions of Cost," *Social Science Research* 36 (2007): 745–766.

<sup>10</sup>Note that the term "summer melt" in this article refers only to those who intend to attend college but do not, rather than to those who pay an enrollment deposit to one college but then choose to attend a different one.

<sup>11</sup>B. L. Castleman and L. C. Page, "A Trickle or a Torrent? Understanding the Extent of Summer 'Melt' Among College-Intending High School Graduates," *Social Science Quarterly* 95, No. 1: 202–220.

<sup>12</sup>K. L. Hughes and J. Scott-Clayton, "Assessing Developmental Assessment in Community Colleges: A Review of the Literature," CCRC Working Paper No. 19, Community College Research Center, August 2010.

<sup>13</sup>For graduation rates, see Bowen, Chingos, and McPherson, *Crossing the Finish Line*; for speed of college completion, see J. Bound, M. F. Lovenheim, and S. Turner, "Increasing Time to Baccalaureate Degree in the United States," *Education Finance and Policy* 7, No. 4 (Fall 2012): 375–424; for earnings, see M. Hoekstra, "The Effect of Attending the Flagship State University on Earnings: A Discontinuity-Based Approach," *The Review of Economics and Statistics* 91, No. 4 (2009): 717–724.

<sup>14</sup>J. I. Smith, M. Pender, and J. S. Howell, "The Full Extent of Student-College Academic Undermatch," *Economics of Education Review* 32 (2013): 247–261.

<sup>15</sup>A. W. Radford, *Top Student, Top School? How Social Class Shapes Where Valedictorians Go to College.* (Chicago: University of Chicago Press, 2013); C. Hoxby and C. Avery, "The Missing 'One-Offs': The Hidden Supply of High-Achieving, Low-Income Students," The Brookings Institution, March 2013.

<sup>16</sup>Smith, Pender, and Howell, "The Full Extent of Student-College Academic Undermatch."

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<sup>21</sup>D. Oyserman, D. Bybee, and K. Terry, "Possible Selves and Academic Outcome: How and When Possible Selves Impel Action," *Journal of Personality and Social Psychology* 91, No. 1 (2006): 188–204.

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<sup>23</sup>A. M. Anthony, L. C. Page, and A. Seldin, "In the Tight Ballpark? Assessing the Accuracy of Net Price Calculators," working paper, January 2015

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