



# Increasing College Opportunity for Low-Income Students

Promising Models and a Call to Action

The Executive Office of the President

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## Executive Summary

With the growing demand for college-educated workers, a college education is one of the surest ways into the middle class. To help more students afford and graduate from college, the Administration has taken steps to address these challenges – doubling Federal investments in Pell Grants and college tax credits, reforming student loans, and taking new steps to reduce college costs and improve value. But while the President continues to push for changes that keep college affordable for all students and families, we can and must be doing more to get more low-income students prepared for college, enrolled in quality institutions, and graduating.

Each year hundreds of thousands of low-income students face barriers to college access and success. Low-income students often lack the guidance and support they need to prepare for college, apply to the best-fit schools, apply for financial aid, enroll and persist in their studies, and ultimately graduate. As a result, large gaps remain in educational achievement between students from low-income families and their high-income peers. Increasing college opportunity is not just an economic imperative, but a reflection of our values. We need to reach, inspire, and empower every student, regardless of background, to make sure that our country is a place where if you work hard, you have a chance to get ahead.

Under the President and First Lady’s leadership, the Administration and the Department of Education engaged with leading experts to identify the barriers to increasing college opportunity. Some of the most promising actions are to help and encourage low-income students to apply, enroll, and succeed in college. Based on the existing evidence, we identified four key areas where we could be doing more to promote college opportunity. On January 16<sup>th</sup>, the Administration is announcing new commitments from colleges and university presidents, nonprofits, leaders of philanthropy and the private sector in these four key areas. These efforts mark the beginning of an ongoing mobilization that will work to promote evidence-based techniques, continue to understand what works, and expand successful efforts.

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**Educational attainment is more important to our economic success than ever before. As more jobs require more education, workers with only a high school diploma are finding it increasingly difficult to enter the middle class.**

- The share of jobs that require postsecondary education has doubled over the last 40 years, as jobs require more skills.<sup>1</sup>
- In 1970, roughly three-fourths of the middle class had a high school diploma or less; by 2007, this share had declined to just 39 percent.<sup>2</sup>

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<sup>1</sup> Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, “Help Wanted: Projections of Jobs and Education Requirements through 2018,” Georgetown University Center on Education and the Workforce, June 2010.

**Meanwhile, overall gains in U.S. college attainment have stalled while other countries have continued to increase their share of citizens that complete college.**

- In 1990, the U.S. ranked first in the world in four-year degree attainment among 25-34 year olds; today, the U.S. ranks 12<sup>th</sup>.<sup>3</sup>
- Increasing college access and success is critical to meeting President Obama's goal of once again being first in the world in college attainment by 2020.

**Yet college access and attainment remains unequal. Given the growing need for an educated work force, increasing college opportunity will be critical to promoting social mobility for future generations.**

- While half of all people from high-income families have a bachelor's degree by age 25, just 1 in 10 people from low-income families do.<sup>4</sup>
- When children born into the bottom fifth of the income distribution get a college degree, their chances of making it to the top nearly quadruple, and their chances of making it out of the bottom increase by more than 50 percent.<sup>5</sup>
- Colleges have grown more competitive, restricting access. While the number of applicants to four-year colleges and universities has doubled since the early 1970s, available slots have changed little.<sup>6</sup>

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<sup>2</sup> Ibid.

<sup>3</sup> OECD Education at a Glance 2013, <http://www.oecd.org/edu/eag.htm>.

<sup>4</sup> Martha J. Bailey and Susan M. Dynarski, "Inequality in Postsecondary Attainment," 2011. In Greg Duncan and Richard Murnane, eds., *Whither Opportunity: Rising Inequality, Schools, and Children's Life Chances*, pp. 117-132. New York: Russell Sage Foundation.

<sup>5</sup> Julia B Isaacs, Isabel Sawhill, and Ron Haskins. 2008. "Getting Ahead or Losing Ground: Economic Mobility in America," Washington, D.C.: Brookings Institution. Without a college degree, children born in the bottom fifth of the income distribution have a 5 percent chance of making it to the top fifth, and a 55 percent of chance of making out of the bottom fifth. With a college degree, the chances of making it to the top increase to 19 percent, and chances of making it out of the bottom increase to 84 percent.

<sup>6</sup> John Bound, Brad Hershbein, and Bridget Terry Long, "Playing the Admissions Game: Student Reactions to Increasing College Competition," NBER Working Paper No. 15272, August 2009, <http://www.nber.org/papers/w15272>.

**The President continues to push for changes that keep college affordable for all students and families. Under this Administration we have taken steps toward increasing opportunity, including:**

- Doubling federal investments in Pell Grants and college tax credits
  - Increasing the maximum Pell Grant award by more than \$900, and expanding Pell Grant access to an additional 3 million students since 2008
  - Introducing the American Opportunity Tax Credit to provide up to \$2,500 per year to help low- and middle-income families pay for college
- Introducing and expanding the Pay-As-You-Earn loan repayment option to keep student loans affordable, capping student loan repayments at 10 percent of income
- Launching the College Scorecard to empower students and families with more transparent information about college costs and outcomes.
- In August, President Obama outlined an ambitious new agenda to combat rising college costs by paying colleges based upon their performance and removing barriers to innovation and competition.

**We categorized major barriers facing low-income students and promising interventions to improve college opportunity into the following four areas:**

**I. Connecting more low-income students to colleges where they can succeed and encouraging completion once they arrive on campus**

Relative to their high-income peers, low-income students are less likely to attend colleges and universities that give them the best chances of success. Too few low-income students apply to and attend colleges and universities that are the best fit for them, resulting in a high level of academic undermatch – that is, many low-income students choose a college that does not match their academic ability. Students who attend selective institutions, which tend to have more resources available for student supports, have better education outcomes, even after controlling for student ability. Promising interventions include those that educate students on their options by providing information on colleges, expected costs, and financial aid, as well as application fee waivers. Once students matriculate, on-campus student supports can help promote completion.

- **Low-income students are more likely to undermatch:** Half of all low-socioeconomic status (SES) students undermatch, and low-SES students are more likely than their high-SES peers to undermatch.<sup>7</sup>
- **Only 8 percent of high-achieving, low-income students are “achievement typical” in their application patterns, meaning they applied to institutions that closely matched their abilities,** including at least one selective safety school.<sup>8</sup>
- **The returns to selectivity are due in part to the large and growing resource gap between well-resourced, selective institutions and less-resourced, more open institutions,** suggesting the importance of spending on student instruction and other supports.<sup>9</sup>
- **Students often undermatch because they are not fully aware of their options, and promising interventions help bridge the information gap, and provide additional resources to students once they arrive on campus.**
- **Expanding College Opportunities (ECO) project:** Information packets and fee waivers provided to high-achieving, low income students increased the number of college applications by 19 percent and increased the likelihood of college match by 41 percent; the intervention cost just \$6 per student.<sup>10</sup>
- **Text message reminders** between high school graduation and the start of the fall semester to ensure that students stay on track to matriculate have been shown to increase 2-year college enrollment by 3 percentage points.<sup>11</sup>
- **Mentoring students once in college can increase persistence and completion.** One-on-one college coaching has been found to increase college graduation rates by 4 percentage points.<sup>12</sup>

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<sup>7</sup> Jonathan I. Smith, Matea Pender, and Jessica S. Howell,. “The Full Extent of Academic Undermatch,” *Economics of Education Review*, 32: 247-261, 2013.

<sup>8</sup> Caroline Hoxby and Christopher Avery, “The Missing “One-Offs:” The Hidden Supply of High-Achieving, Low Income Students,” The Brookings Institution, March 2013.

<sup>9</sup> See John Bound & Michael F. Lovenheim and Sarah Turner, "Increasing Time to Baccalaureate Degree in the United States," *Education Finance and Policy*, MIT Press, vol. 7(4), pages 375-424, September 2012.

<sup>10</sup> Caroline Hoxby and Sarah Turner, “Expanding College Opportunities for High-Achieving, Low Income Students,” Stanford Institute for Economic Policy Research, March 2013.

<sup>11</sup> Benjamin L. Castleman and Lindsay C. Page, “Summer Nudging: Can Personalized Text Messages and Peer Mentor Outreach Increase College Going Among Low-Income High School Graduates?,” Center on Education Policy and Workforce Competitiveness, updated October 2013, [http://curry.virginia.edu/uploads/resourceLibrary/9\\_Castleman\\_SummerTextMessages.pdf](http://curry.virginia.edu/uploads/resourceLibrary/9_Castleman_SummerTextMessages.pdf).

## II. Increasing the pool of students preparing for college

While increasing access to selective institutions improves college outcomes for low-income students who have already prepared to apply for college, we need to reach many more low-income students in order to bridge the income gap in college access. In addition to helping college-eligible low-income students attend schools that are the best fit for them, we also need to reach students earlier to increase the pool of low-income students ready for college. Promising interventions to increase the pool include summer enrichment programs and college visits, promoting a strong college-going culture in middle- and high-schools, early exposure to STEM education, and helping students understand their financial aid eligibility so they know college can be affordable.

- **Academic achievement by 8<sup>th</sup> grade is one of the largest predictors of college readiness.** Some research shows that the level of academic achievement by 8<sup>th</sup> grade has a greater impact on college and career readiness than high school achievement.<sup>13</sup>
- **Low-income students are less likely to take a core curriculum, and less likely to meet readiness benchmarks on college entrance exams.**<sup>14</sup>
- **While low-income students have seen the largest gains in college aspirations, they have not had similar gains in college enrollment.**<sup>15</sup>
- **Technology based learning, increased instructional time, and personalized approaches have been shown to improve high school algebra scores, including for students who enter high school underprepared in math.**<sup>16</sup>

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<sup>12</sup> Eric Bettinger and Rachel Baker, “The Effects of Student Coaching in College: An Evaluation of a Randomized Experiment in Student Mentoring,” National Bureau of Economic Research, March 2011.

<sup>13</sup> ACT, “The Forgotten Middle: Ensuring that All Students Are on Target for College and Career Readiness before High School,” 2008, <http://www.act.org/research/policymakers/pdf/ForgottenMiddle.pdf>.

<sup>14</sup> ACT, “The Condition of College & Career Readiness: Low-Income Students Class of 2012,” 2013, <http://www.act.org/newsroom/data/2012/states/pdf/LowIncomeStudents.pdf>.

<sup>15</sup> Andrea Venezia and Laura Jaeger, “Transitions from High School to College,” *The Future of Children*, Volume 23, Number 1, Spring 2013.

<sup>16</sup> See John F. Pane, Beth Ann Griffin, Daniel F. McCaffrey and Rita KaramPane et al, “Effectiveness of Cognitive Tutor Algebra I at Scale,” *Educational Evaluation and Policy Analysis*, 2013; Stephen J. Pape et al, “The Impact of Classroom Connectivity in Promoting Algebra I Achievement: Results of a Randomized Control Trial Classroom connectivity in Algebra I classrooms: results of a randomized control trial,” *Effective Education*, 2013; Robert Balfanz, Vaughan Byrnes, Nettie LegtersBalfanz et al, “A Randomized Trial oOf Two Approaches To to Increasing Mathematics Achievement For for Underprepared Freshmen,” Johns Hopkins Center for Social Organization of Schools.

- **Several early-intervention programs use cohort-based models that identify students early and follow them through high school and college, providing a suite of student supports** to prepare them for college, including tutoring, mentoring, college visits, summer programs, and scholarship funding.

### III. Reducing inequalities in college advising and test preparation

Access to college advising is critically important for students as they prepare to apply to college, yet students from low-income families and disadvantaged backgrounds have few experts or mentors to turn to for support and advice. Evidence suggests that to address these inequities, we need to recruit more counselors, advisors, and near-peer mentors to help guide low-income students through the college application and financial aid process. Organizations around the country are working to bring more counselors to low-income high-schools, and pair more students with mentors, and early results suggest positive impacts on college outcomes.

- **Students who pay for additional counseling are likely to have higher grades, higher SAT scores, and come from families with higher incomes:** According to the Independent Educational Consultant Association, 22 percent of students applying to competitive colleges receive individualized counseling beyond what is offered by their high school counselors.<sup>17</sup>
- **Low-income students are underserved by high school guidance counselors:** High schools serving predominately low-income and minority students have counselor to student ratios twice the national average – 1,000 students per counselor versus 470 students per counselor nationally.<sup>18</sup>
- **Increasing access to school counselors has been shown to increase college-going:** Adding one additional high school counselor increases four-year college enrollment by 10 percentage points. That is, if a typical high school serving 113 seniors hired one additional counselor, 11 more seniors would enroll in a four-year school.<sup>19</sup>
- **The Posse Foundation cohort model recruits disadvantaged, high-achieving students during their senior year and provides each “posse” of seniors workshops, mentoring,**

<sup>17</sup> See Christopher Avery, “The Effects of College Counseling on High-Ability, Low-Income Students: Results of a Pilot Study with a Randomized Control Trial.” National Bureau of Economic Research Working Paper no 16359, 2009.

<sup>18</sup> See Ron Haskins, Harry Holzer and Robert Lerman, “Promoting Economic Mobility by Increasing Postsecondary Education,” Economic Mobility Project, Pew Charitable Trusts, May 2009, pp. 43-44; and <http://www.schoolcounselor.org/asca/media/asca/home/Ratios10-11.pdf>.

<sup>19</sup> Michael Hurwitz and Jessica Howell, “Measuring the Impact of High School Counselors on College Enrollment,” College Board Advocacy and Policy Center, Research Brief, February 2013.

**and full four-year scholarships.** Posse scholars score an average 1050 on the SAT and attend selective colleges with an average SAT of 1350, while 90 percent of Posse scholars graduate from college.<sup>20</sup>

- **The National College Advising Corps (NCAC) trains recent college graduates to be full-time high-school counselors to help students register for exams and apply to college.** Seniors at NCAC schools who meet with a Corps adviser are 40 percent more likely to take the ACT or SAT, 98 percent more likely to take college workshops, and 67 percent more likely to be accepted to college.
- **College Possible – an AmeriCorps organization – trains recent college graduates to provide free college advising services to low-income students.** A randomized controlled trial found participants were more than 15 percentage points more likely to enroll in a four-year institution right after high school.<sup>21</sup>
- **Providing hands-on FAFSA assistance plus financial aid information has been shown to increase enrollment and persistence:** The H&R Block FAFSA experiment increased the FAFSA application rate 40 percent and college enrollment by 29 percent. High school seniors who received FAFSA assistance were 8 percentage points more likely to have completed two years of college.<sup>22</sup>

#### IV. Seeking breakthroughs in remedial education

While increasing college access is critical, we must ensure that low-income students are successful once they get there. Far too many students enter college underprepared to succeed, and remediation needs at four-year institutions are greatest for low-income students. New models are emerging that have the promise of dramatically improving college outcomes for students in need of remediation. These include aligning student assessments across K-12, community colleges, and four-year colleges and universities; early assessments to identify skills gaps before college; redesigning student assessments that determine remedial placement; and improving remediation delivery with increased student supports.

- **Remediation needs are common at all types of colleges:** The share of students who took a remedial course ranges from 23 percent at four-profit four-year institutions, to

<sup>20</sup> <http://www.possefoundation.org/quick-facts>

<sup>21</sup> Christopher Avery, "Evaluation of the College Possible Program: Results From a Randomized Controlled Trial," NBER Working Paper 19562, October 2013, <http://www.nber.org/papers/w19562>.

<sup>22</sup> Eric Bettinger, Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu, "The Role of Application Assistance and Information," *Quarterly Journal of Economics*, April 2012.

24 percent at public four-year institutions, 38 percent at public four-year institutions, and 40 percent at public two-year institutions.<sup>23</sup>

- **Many students enrolled in remedial courses never progress to college level work.** Nine out of 10 students who need substantial remediation when they enter their postsecondary course of study never complete it.<sup>24</sup> Only one in four students in remedial classes will eventually earn a degree from a community college. An additional 14 percent will transfer to a four-year college without a certificate or degree.
- **Curriculum alignment across secondary and postsecondary education plus early assessments may help reduce the need for remediation.** Students who participate in California’s Early Assessment Program and then enroll at a California State University are 6.1 percent less likely to require remediation in English and 4.1 percent less likely to require remediation in math.<sup>25</sup>
- **Improving assessments can also help ensure that remediation courses are reserved for students who are substantially underprepared, and place better prepared students in traditional courses.** The Community College Research Center (CCRC) has compiled a number of promising case studies from community colleges in Georgia, New Jersey, North Carolina, Oregon, Texas, Virginia, and Wisconsin that are revisiting how they conduct placement assessments. These changes can be as simple as helping students review for their placement test. In fact, the institution that implemented a review course for its placement exams shifted 35 percent more students into higher level math courses and 60 percent more students into higher level English.<sup>26</sup>
- **The Carnegie Foundation’s Statway and Quantway pilot programs are reforming math remediation on over 100 campuses.** Over half of the students in these pilot programs completed the full developmental Pathway in one year with a grade of C or higher in their final term. By comparison, only 5.9 percent of their peers completed non-Statway remedial math courses in the same timeframe.<sup>27</sup>

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<sup>23</sup> “National Postsecondary Student Aid Study 2011-12,” National Center for Education Statistics, 2012. Data cites non-doctoral four-year institutions.

<sup>24</sup> Data from the 31 Complete College America partner states indicate that roughly 22 percent of developmental education students at community colleges complete remediation requirements and associated “gatekeeper courses” within 2 years (Report available at: [http://www.completecollege.org/resources\\_and\\_reports/](http://www.completecollege.org/resources_and_reports/)).

<sup>25</sup> “LBCP 5-Year Progress Report: A Breakthrough in Student Achievement,” *Long Beach College Promise*, March 2013. An IES-funded evaluation shows modest but positive effects of the program.

<sup>26</sup> Michelle Hodara, Shanna Jaggars, and Melinda Karp, “Improving Developmental Education Assessment and Placement: Lessons From Community Colleges Across the Country,” *Community College Research Center*, November 2012.

<sup>27</sup> Scott Strother, James Van Campen, and Alicia Grunow, “Community College Pathways: 2011-2012 Descriptive Report,” *Carnegie Foundation for the Advancement of Teaching*, March 2013.

## Introduction: Gaps in the college pipeline and the need to increase college access and success

Educational attainment is more important to our economic success than ever before. The share of jobs that require postsecondary education has doubled over the last 40 years. As more jobs require more education, workers with only a high school diploma are finding it increasingly difficult to enter the middle class. In 1970, roughly three-fourths of the middle class had a high school diploma or less; by 2007, this share had declined to just 39 percent.<sup>28</sup>

Yet college access and attainment remains unequal. Growing income inequality and declining social mobility have many causes – including new technologies, global competition, and wage stagnation for the majority of working Americans. Educational inequality, too, is a major barrier to reducing income inequality and increasing social mobility for future generations. A college education is one of the surest ways into the middle class, yet each year hundreds of thousands of low-income students face barriers to college access and success: these students lack the guidance and support they need to prepare for college, apply to schools that are the best fit for them, apply for financial aid, enroll and persist in their studies, and ultimately graduate.

Meanwhile, overall gains in U.S. college attainment have stalled while other countries have continued to increase their share of citizens that complete college. In 1990, the U.S. ranked first in the world in four-year degree attainment among 25-34 year olds; today, the U.S. ranks 12<sup>th</sup>.<sup>29</sup> Increasing college access and success among all students is critical to reaching President Obama’s goal of once again being first in the world in college attainment by 2020.

### Growing returns to higher education

The benefits of postsecondary education are well documented and have major implications for economic growth, equality, and social mobility. Getting a postsecondary credential leads to greater lifetime earnings, lower unemployment, and lower poverty. Over the course of one’s working lifetime, the median earnings of bachelor’s degree recipients are 65 percent higher than median earnings of high-school graduates.<sup>30</sup> College graduates are also more likely to find a job; the unemployment rate for bachelor’s degree recipients is *half* the unemployment rate of high school graduates – and this gap grew during the Great Recession, which hit low-wage, low-education workers especially hard.<sup>31</sup>

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<sup>28</sup> Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, “Help Wanted: Projections of Jobs and Education Requirements Through 2018,” Georgetown University Center on Education and the Workforce, June 2010.

<sup>29</sup> OECD Education at a Glance 2013, <http://www.oecd.org/edu/eag.htm>.

<sup>30</sup> The College Board, “Education Pays 2013 – The Benefits of Higher Education for Individuals and Society”, Trends in Higher Education Series, October 2013.

<sup>31</sup> U.S. Bureau of Labor Statistics, [http://www.bls.gov/emp/ep\\_table\\_001.htm](http://www.bls.gov/emp/ep_table_001.htm).

Gaining a postsecondary education has positive effects beyond higher earnings. Individuals with higher education levels are more likely have retirement benefits and health insurance through their employer.<sup>32</sup> Education also leads to better decision making about health, marriage, and parenting; improves patience; and makes people more goal-oriented.<sup>33</sup> College access and attainment also leads to positive externalities and benefits to taxpayers by reducing crime and the need for social services, and increasing taxes paid and civic engagement.<sup>34</sup>

Importantly, the returns to higher education have increased over time as the demand for college-educated workers has outpaced the number of students getting a college education.<sup>35</sup> Over the past four decades, the median earnings gap for full-time workers aged 25-34 with and without a college degree increased substantially for women and more than doubled for men; from 1971 to 2011 the earnings premium for men increased from 25 percent to 69 percent.<sup>36</sup> Likewise, the earnings gap between those with and without a college degree increases as workers age.<sup>37</sup>

### College attainment promotes social mobility

In response to the growing earnings gap between those with and without postsecondary education, a report from the Pew Economic Mobility Project remarked that, “unless something is done to boost the number of young people earning postsecondary credentials, millions of Americans will continue to be limited in their economic mobility.”<sup>38</sup> Without a college degree, children born in the lowest fifth of the income distribution children have a 45 percent chance of staying in the bottom, and just a 5 percent chance of moving to the top [Figure 1]. Yet when these same children go on to earn a college degree, their chances of making it to the top nearly quadruple, and their chances of moving out of the bottom increase by 50 percent.<sup>39</sup>

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<sup>32</sup> Sandy Baum, Charles Kurose, and Jennifer Ma, “How College Shapes Lives: Understanding the Issues,” The College Board, Trends in Higher Education Series, October 2013.

<sup>33</sup> Philip Oreopoulos and Kjell G. Salvanes, “How Large are Returns to Schooling? Hint: Money Isn’t Everything,” NBER Working Paper 15339, 2009, <http://www.nber.org/papers/w15339>.

<sup>34</sup> Stephen J. Carroll and Emre Erkut, “The Benefits to Taxpayers from Increases in Students’ Educational Attainment,” RAND Corporation, 2009.

<sup>35</sup> Philip Oreopoulos and Uros Petronijevi, “Making College Worth It: A Review of the Returns to Higher Education,” The Future of Children, Vol 23, No 1, Spring 2013.

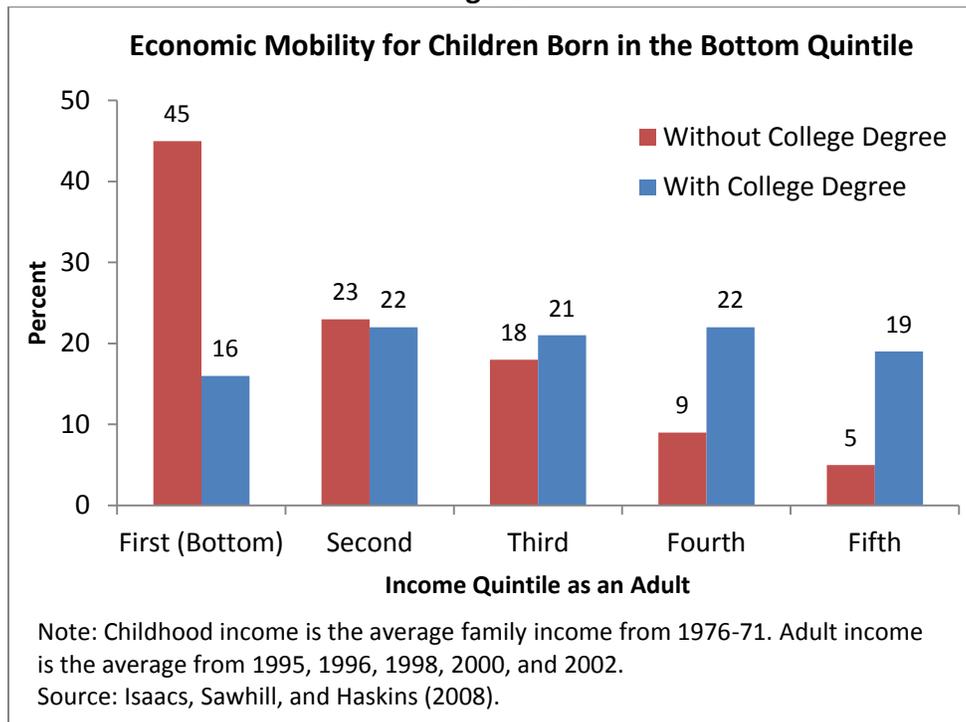
<sup>36</sup> Sandy Baum, Jennifer Ma, and Kathleen Payea, “Education Pays: The Benefits of Higher Education for Individuals and Society,” The College Board, 2013, <http://trends.collegeboard.org/education-pays>.

<sup>37</sup> Sandy Baum, Charles Kurose, and Jennifer Ma, “How College Shapes Lives: Understanding the Issues,” The College Board, Trends in Higher Education Series, October 2013.

<sup>38</sup> Ron Haskins, Harry Holzer and Robert Lerman, “Promoting Economic Mobility by Increasing Postsecondary Education,” Economic Mobility Project, Pew Charitable Trusts, May 2009.

<sup>39</sup> Isaacs, Julia B., Isabel Sawhill, and Ron Haskins. 2008. Getting Ahead or Losing Ground: Economic Mobility in America. Washington, D.C.: Brookings Institution.

Figure 1



### College Access and Success Remains Unequal

While social mobility is highest for those who get a college education, educational attainment itself is greatly influenced by the economic circumstances of one's birth. Children from low-income families are not only less likely to complete high school,<sup>40</sup> but also much less likely to enroll in postsecondary education among those who do graduate from high school. In 2012, only 52 percent of children from families in the bottom fifth of the income distribution enrolled in postsecondary education right after graduating from high school, compared to 82 percent of graduating students from families in the top fifth of the income distribution, despite considerable gains in low-income college enrollment over the past 30 years.<sup>41</sup> Much of this gap persists even for low-income students who do well in school. Data from the National Center for Education Statistics show that low-income students who performed in the top third of students in 8<sup>th</sup> grade math were just as likely to graduate college as their high-income peers who performed in the bottom third in math.<sup>42</sup>

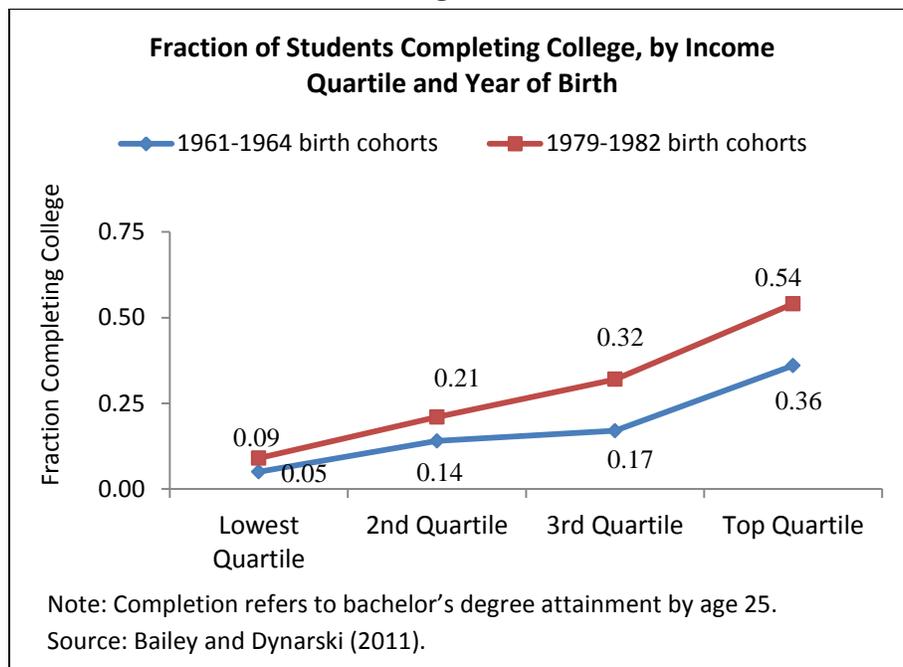
<sup>40</sup> As of 2009, low-income 15-24 year olds were five times more likely to have dropped out of high school than their high-income peers. See Chris Chapman, Jennifer Laird, and Angelina Kewal Remani, "Trends in High School Dropout and Completion Rates in the United States: 1972-2009," National Center for Education Statistics, U.S. Department of Education, October 2011, <http://nces.ed.gov/pubs2012/2012006.pdf>.

<sup>41</sup> Sandy Baum, Jennifer Ma, and Kathleen Payea, "Education Pays: The Benefits of Higher Education for Individuals and Society," The College Board, 2013, <http://trends.collegeboard.org/education-pays>.

<sup>42</sup> See College Board, Education Pays Update 2005, Figure 7.

Moreover, inequality in college attainment due to income has grown in recent decades. Comparing birth cohorts from 1961-1964 and 1979-1982 – students who would have graduated from high school in the early 1980s and the late 1990s – economists Martha Bailey and Susan Dynarski found that the college attainment gap between the highest income quartile and the lowest quartile increased considerably. Over this period, many more high-income women began attending college, contributing to the considerable gains that accrued to high-income students. In the earlier cohort, just over one-third of high-income students earned a bachelor’s degree by age 25; less than twenty years later, more than half of the students from high-income families did. In stark contrast, bachelor’s attainment for low-income students remained remarkably low, increasing from just 5 percent of students in the earlier cohort to a mere 9 percent of students in the later cohort [Figure 2]. Thus, among the later cohort more than 1 in 2 young adults from high-income families had a bachelor’s degree by age 25, versus little more than 1 in 10 young adults from low-income families. Bailey and Dynarski observe that the growing gap in college attainment cannot be explained by student ability: “Even among those who had the same measured cognitive skills as teenagers, inequality in college entry and completion across income groups is greater today than it was two decades ago.”<sup>43</sup>

**Figure 2**



<sup>43</sup> Martha J. Bailey and Susan M. Dynarski, “Inequality in Postsecondary Attainment.” 2011. In Greg Duncan and Richard Murnane, eds., *Whither Opportunity: Rising Inequality, Schools, and Children’s Life Chances*, pp. 117-132. New York: Russell Sage Foundation. Birth cohort data is from the National Longitudinal Survey of Youth and includes respondents who did not graduate high school. College completion is defined as bachelor’s attainment by age 25.

Even when low-income students gain access to college, they are less likely to complete college than their high-income peers. In *Crossing the Finish Line: Completing College at America's Public Universities*, William G. Bowen, Matthew M. Chingos, and Michael S. McPherson found a “strong, highly consistent relationship between a student’s SES (socioeconomic status) background and his or her probability of graduating.” Like Bailey and Dynarski, they find that the gap in college success cannot be fully or even mostly explained by student ability: just one-fourth of the graduation gap between low- and high-SES students at public flagship universities can be explained by student characteristics such as high school GPA, SAT and ACT scores, race, ethnicity, and gender. Among those who enroll in flagship institutions, high-SES students are 11 percentage points more likely to graduate within six years than low-SES students – even after controlling for student characteristics. Though the gap is smaller when the researchers control for parental education, the completion gap between students from the lowest and highest income quartiles is still 6 percentage points. “The proverbial bottom line is that, with very few exceptions, disparities in educational attainment by SES are pervasive in American public higher education and cannot be explained away by associated differences in academic preparation.”<sup>44</sup>

Students also face more competition when applying to colleges and universities than any time in the recent past, putting low-income students at a disadvantage compared to their peers who can afford to spend additional resources to improve their chances of admission. Economists John Bound, Brad Hershbein, and Bridget Terry Long observed that the supply of college admissions has not kept up with demand. While the number of applicants to four-year colleges and universities has doubled since the early 1970s, available slots have changed little. Between 1992 and 2004, the number of applications to four-year colleges and universities grew 44 percent while undergraduate enrollment grew far less. Between 1986 and 2003, average undergraduate enrollment at public four-year institutions grew between 10-15 percent, and the top private and liberal arts colleges increased their enrollment by less than 1 percent. Encouragingly, transfers from two-year colleges helped drive the growth in undergraduate enrollment at top public four-year colleges and universities.<sup>45</sup> However, institutions must increase their overall enrollment, including transfers and freshman admissions, in order to substantially increase college access.

Low-income students face barriers to college success at every stage of the education pipeline, from elementary school through post-secondary education, sometimes in spite of their academic achievements. Many of these students lack the support and resources to navigate college preparation – from test taking, to applications, to financial aid – and they end up choosing a college that is not a good fit for them or no college at all.

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<sup>44</sup> William G. Bowen, Matthew M. Chingos and Michael S. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities*, Princeton University Press, 2009.

<sup>45</sup> John Bound, Brad Hershbein, and Bridget Terry Long, “Playing the Admissions Game: Student Reactions to Increasing College Competition,” NBER Working Paper No. 15272, August 2009, <http://www.nber.org/papers/w15272>.

There are several steps that students need to take in order to enroll and succeed in college, and each step often is more difficult for students from low-income families. First, low-income students often lack encouragement and early exposure to college that can help aspirations take root. They are less likely to attend schools with a strong college-going culture or to engage in early learning experiences like college visits and summer programs. Low-income students also may lack the counseling and advising support they need to excel in entrance exams like the SAT and ACT, submit quality applications, and apply for financial aid. Additionally, low-income students are often unaware of all of the available options across higher education and miss the opportunity to attend institutions that could give them a better chance of success. Finally, while many low-income students arrive on campus academically prepared, low-income students are still more likely than their peers to require remediation, and college remediation courses may fail to provide the necessary foundation for low-income students to successfully matriculate into college-level work.

At the same time, there is an emerging literature that identifies the barriers that low-income students face and highlights promising interventions to help overcome those barriers. While the Administration has proposed interventions to increase academic preparedness at all income and education levels – including expansion of access to high-quality early learning and spurring comprehensive reform of state K-12 systems of education – we also need to continue strengthening the pipeline to ensure that all eligible students have the opportunity to enroll and succeed in a high-quality post-secondary education. In addition to some practices that institutions have been pursuing for decades, we are starting to learn from innovative interventions around the country that show promising results for what works for increasing college access and success for low-income students – including text messages that remind students of important deadlines to near-peer mentors that help students apply for college and financial aid. We should learn from these best practices, take successful efforts to scale, and continue to identify and invest in innovative approaches to promote college access and success.

The Administration has taken significant steps to address these challenges through strengthening financial aid, making student loans more affordable, and taking new steps to reduce college costs and improve value – including doubling Federal investments in Pell Grants and college tax credits. President Obama expanded access to Pell Grants – the largest need-based grant program for low- and moderate-income students – to more than 3 million additional students, and we’ve increased the maximum Pell Grant by more than \$900 between the 2008-09 and 2013-14 academic years. Likewise, the Administration expanded its “Pay as You Earn” income-based loan repayment option to help more borrowers manage their loan payments by capping them at 10 percent of monthly income. The Administration’s College Scorecard was developed to help empower students and families with more transparent information about college costs and outcomes, so that they can choose a school that is affordable, best-suited to meet their needs, and consistent with their educational and career goals. While the President continues to push for changes that keep college affordable for all students and families, we can and must be doing more to help more low-income students prepare for college, enroll in quality institutions, and ultimately graduate.

## **I. Connecting more low-income students to colleges where they can succeed and encouraging completion once they arrive on campus**

Relative to their high-income peers, low-income students are less likely to attend colleges and universities that give them the best chances of success. Too few low-income students apply to and attend colleges and universities that are the best fit for them, resulting in a high level of academic undermatch – that is, many low-income students choose a college that does not match their academic ability. For example, some students have the academic qualifications to succeed at selective colleges and universities, but attend non-selective schools. Students who attend selective institutions, which tend to have more resources available for student supports, have better education outcomes, even after controlling for student ability. While there are many important factors other than academic fit that influence college decisions, low-income students often are not aware of their full array of postsecondary options, including financial aid opportunities. Promising interventions to promote college fit and completion include those that provide students with tailored information on postsecondary options, increase the number of applications to colleges that match their academic abilities and preparation, and remove real and perceived cost barriers to college enrollment by providing greater financial aid information and waiving application fees. Once students arrive on campus, enhanced student supports can help improve persistence and completion. Further rigorous experimentation and evaluation is necessary to determine what works and should be brought to scale to improve college fit and completion.

### **Low-income students are more likely to undermatch**

According to the economists Jonathan Smith, Matea Pender, and Jessica Howell, *half* of all lower-SES (socioeconomic status) high school graduates undermatched in 2004; among students with the academic credentials to get into a selective institution, the rate of undermatch was even higher. High-achieving low-income students in the lower half of the SES distribution who are predicted to have access to selective institutions undermatch at a rate of 60 percent [Table 1].<sup>46</sup>

To determine the rate of undermatch, they evaluated student data from the National Education Longitudinal Study of 1988 (NELS) and the Education Longitudinal Study of 2002 (ELS). Researchers predicted students' probabilities of admission at institutions of varying levels of selectivity, classified according to Barron's Admissions Competitive Index, using student characteristics like GPA and SAT scores and participation in advanced high school courses. Finally, they compared actual enrollment outcomes to where students were likely admissible; students who enrolled in a less selective institution than the most selective category they were predicted to be admitted are considered undermatched.

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<sup>46</sup> Jonathan I. Smith, Matea Pender, and Jessica S. Howell, "The Full Extent of Academic Undermatch," *Economics of Education Review*, 32: 247-261, 2013.

According to this study, lower-SES students are considerably more likely to undermatch than their high-income peers at all levels of academic ability [Figure 4]. While half of lower-SES students undermatched in 2004, only about one-third of higher-SES students did. Students in the lower half of the SES distribution are also much more likely to *substantially* undermatch, defined as attending a college at least two selectivity levels below the level of college selectivity to which a student likely has access – for example, a student who attends community college but meets the academic admission requirements of a selective liberal arts college would be substantially undermatched. While the overall rate of substantial undermatch was 16 percent in the sample of 2004 high school graduates, the rate of substantial undermatch was 23 percent for lower-SES students.<sup>47</sup>

Research from the Consortium on Chicago School Research (CCSR) at the University of Chicago suggests that substantial undermatch is prevalent among low-income students who aspire to earn a four-year degree. Among high school seniors at Chicago Public Schools who aspire to earn a four-year degree, nearly two-thirds undermatch. Of those who undermatch, most do so by attending a two-year college or no college at all, with just 50 percent of those who aspire to a four-year degree actually enrolling in a four-year institution.<sup>48</sup>

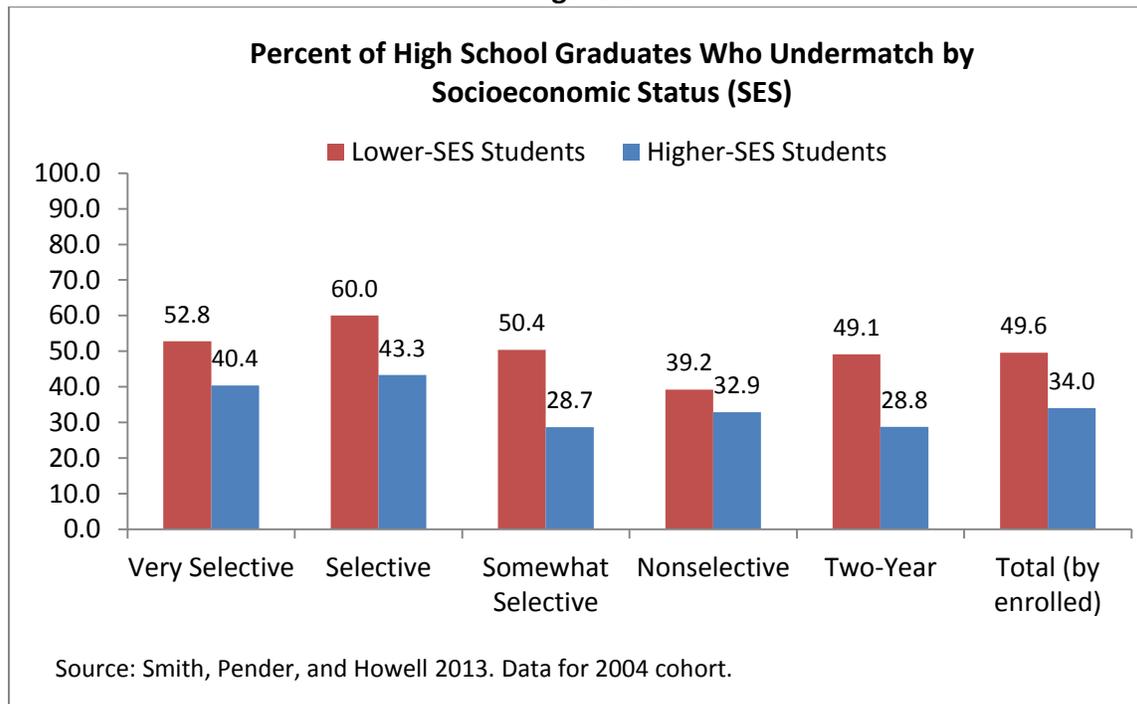
**Table 1. Percent of High School Graduates who Undermatch**

	By Race				By Socioeconomic Status		By Cohort	
	<i>Asian</i>	<i>Hispanic</i>	<i>Black</i>	<i>White</i>	<i>Lower-SES</i>	<i>Higher-SES</i>	<i>1992</i>	<i>2004</i>
Very Selective	26.8	41.7	79.5	43.1	52.8	40.4	29.8	41.5
Selective	35.1	45.1	38.0	48.6	60.0	43.3	53.8	47.3
Somewhat Selective	27.8	45.6	27.8	35.6	50.4	28.7	35	35.1
Nonselective	43.7	32.3	18.0	38.9	39.2	32.9	43.7	35.4
Two-Year	29.9	44.4	36.0	41.6	49.1	28.8	56	41.2
Total (by enrolled)	31.7	43.8	33.6	42.0	49.6	34.0	48.9	40.9
Note: Lower-SES students are below the median SES and higher-SES students are above the median SES.								
Source: Smith, Pender, and Howell (2013).								

<sup>47</sup> Jonathan Smith, Matea Pender, Jessica Howell, and Michael Hurwitz, “Getting Into College: Postsecondary Academic Undermatch,” College Board, April 2012, <http://research.collegeboard.org/publications/collegekeys-compact-getting-college-postsecondary-academic-undermatch>.

<sup>48</sup> Roderick, M., Nagaoka, J., Coca, V., Moeller, E. 2008. “From High School to the Future: Potholes on the Road to College.” Consortium on Chicago School Research, Chicago, March, [http://ccsr.uchicago.edu/sites/default/files/publications/CCSR\\_Potholes\\_Report.pdf](http://ccsr.uchicago.edu/sites/default/files/publications/CCSR_Potholes_Report.pdf).

Figure 3



### College match improves the chances of college success

The returns on college choice are significant; generally, when students attend more selective schools, they are more likely to graduate, graduate faster, and have better earnings outcomes, even after controlling for student ability. These returns are likely due in part to the increased rigor and additional resources at relatively more selective institutions. Students are likely to also benefit from the positive influence of being surrounded by high-achieving peers.

Researchers suggest that attending a more selective institution increases the chances of graduating. In *Crossing the Finish Line: Completing College at America's Public Universities*, Bowen, Chingos, and McPherson found considerable gaps in completion by selectivity; the six-year graduation rate at public four-year institutions ranged from as much as 86 percent at the most selective flagships to 51 percent at the least selective public colleges and universities. They found that gaps persist even after controlling for pre-college student test scores.<sup>49</sup>

Other work suggests a causal relationship between selectivity and completion and selectivity and earnings. In a recent working paper from Harvard's Kennedy School of Government, economists Sarah Cohodes and Joshua Goodman found that a scholarship program in Massachusetts induced some low-income students to attend less-selective state schools rather

<sup>49</sup> William G. Bowen, Matthew M. Chingos & Michael S. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities*, Princeton University Press, 2009.

than other selective colleges, reducing their likelihood of graduating on time by 40 percent.<sup>50</sup> A 2009 study from economist Mark Hoekstra found that among similarly qualified students, those who barely made the admissions cutoff and attended their state flagship university had 20 percent higher earnings than those who just missed the admissions cutoff and were likely to attend a less-selective state college.<sup>51</sup>

A growing academic literature also suggests that the academic achievement of students' peers is correlated with higher GPA and education outcomes.<sup>52</sup> Much of the literature focuses on the modest peer influence of college roommates, but recent studies that examine broader peer groups find even larger impacts. One study examined peer groups at the United States Air Force Academy, where freshman students interact almost exclusively with their peer group of roughly 30 students. They found that a 100-point increase in the average peer group SAT verbal score increased individual college GPA by nearly half a point on a 4.0-point scale, and that the effects were largest in math and science courses. Moreover, these peer effects persisted throughout college, albeit at a diminishing rate, "indicating that social network peer effects may have long lasting effects on academic achievement."<sup>53</sup>

Finally, empirical research has shown that students earn their degrees faster at well-resourced institutions. Economists John Bound, Michael F. Lovenheim, and Sarah Turner examined longitudinal data for 1972 high school graduates and found that, while the overall time to degree has increased, this increase is concentrated at less-selective public institutions where resources have declined, resulting in higher costs and reduced services for students. At less-resourced colleges, students have to work more hours in order to pay for school and make ends meet, and they get less in return through resources spent on student instruction or other services.<sup>54</sup>

While improving college match will help more low-income students attend well-resourced institutions, reducing the resource gap between selective institutions and accessible institutions

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<sup>50</sup> Sarah Cohodes and Joshua Goodman, "Merit Aid, College Quality and College Completion: Massachusetts' Adams Scholarship as an In-Kind Subsidy," Harvard Kennedy School working paper, March 2013.

<sup>51</sup> Mark Hoekstra, "The Effect of Attending the Flagship State University on Earnings: A Discontinuity-Based Approach," *The Review of Economic and Statistics*, November 2009, <http://econweb.tamu.edu/mhoekstra/flagship.pdf>.

<sup>52</sup> See for example Gordon Winston and David Zimmerman, "Peer Effects in Higher Education," *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It*, ed. Caroline Hoxby, University of Chicago Press, September 2004. <http://www.nber.org/chapters/c10105.pdf>

<sup>53</sup> Scott E. Carrell, Richard L. Fullerton, and James E. West, "Does Your Cohort Matter? Measuring Peer Effects in College Achievement," *Journal of Labor Economics*, University of Chicago Press, vol. 27(3), pages 439-464, 07. <http://www.nber.org/papers/w14032, 2009>.

<sup>54</sup> John Bound, Michael F. Lovenheim, and Sarah Turner, "Increasing Time to Baccalaureate Degree in the United States," *Education Finance and Policy*, MIT Press, vol. 7(4), pages 375-424, September 2012, <http://www.nber.org/papers/w15892>.

may reduce disparities in college outcomes as colleges and universities become more stratified between those with the most and least resources. According to Bound, Hershbein, and Long, “The huge gap in resources available to students at selective relative to less selective schools seems too large to be justifiable on grounds of either efficiency or equity.”<sup>55</sup>

Importantly, there may be little downside, if any, to academic “overmatch.” That is, there is little evidence that students perform worse at institutions with higher average SAT scores than their own. Michal Kurlaender and Eric Grodsky were able to test the hypothesis that these students struggle and therefore perform worse at selective institutions by exploiting a natural experiment in the University of California (UC) System, whereby some students were initially rejected but due to a change in policy were ultimately admitted to the most selective UC institutions. The researchers then compared such marginally admitted students to traditionally admitted students. They found that while the marginal students took fewer credits, they experienced similar grades and rates of persistence as the traditionally admitted students. Marginal students were also less likely to drop out compared to similarly scoring peers at less selective UC institutions.<sup>56</sup>

### **Low-income students may not be aware of all postsecondary options**

Research indicates that much of the undermatch problem occurs because students do not apply to the best-fit colleges, or they do not submit enough applications to ensure admission to a match college. Economists Caroline Hoxby and Christopher Avery examined the application and enrollment patterns of high-achieving, low-income students. They found that, conditional on applying to the same schools, high-achieving low- and high-income students have similar college enrollment and persistence outcomes.<sup>57</sup> However, Hoxby and Avery also found that the vast majority of high-achieving, low-income students either fail to apply to any schools that match their abilities, or they apply to a mix of highly selective reach schools and non-selective schools.

According to research from Hoxby and Avery, just 8 percent of high-achieving, low-income students were “achievement typical” in their application patterns, meaning they applied to institutions that closely matched their abilities, including at least one selective safety school. By contrast, roughly half of all high-achieving, low-income students not apply to a single selective

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<sup>55</sup> John Bound, Brad Hershbein, and Bridget Terry Long, “Playing the Admissions Game: Student Reactions to Increasing College Competition,” NBER Working Paper No. 15272, August 2009, <http://www.nber.org/papers/w15272>.

<sup>56</sup> Michal Kurlaender and Eric Grodsky, “Mismatch and the Paternalistic Justification for Selective College Admissions.” *Sociology of Education*, 86: 294-310, 2013.

<sup>57</sup> Caroline Hoxby and Christopher Avery, “The Missing “One-Offs:” The Hidden Supply of High-Achieving, Low Income Students,” The Brookings Institution, March 2013. Hoxby and Avery define “high-achieving, low-income” students as those from families in the bottom quartile of the income distribution who also score at or above the 90<sup>th</sup> percentile on the ACT or SAT I, and have a high-school grade point average of an A- or above.

college that matched their abilities.<sup>58</sup> Importantly, Hoxby and Avery determined that “income-typical” students tend to be geographically dispersed, and are unlikely to benefit from traditional college recruiting. (“Achievement-typical” students, on the other hand, were highly concentrated in 15 major urban areas in close proximity of selective institutions.)

Low-income students also may be unaware of all the financial aid opportunities available to them, and are deterred by application fees and high tuition costs, though only about one-third of full time college students pay the sticker price<sup>59</sup>. Moreover, low-income students may face a *lower* net price at selective institutions compared to what they would pay for less selective programs.<sup>60</sup> Studies have shown that low-income students and students of color are more sensitive to changes in list price.<sup>61</sup> Similarly, students and parents – and especially parents from relatively low-income backgrounds – tend to overestimate the cost of tuition.<sup>62</sup> Research by economists at the College Board has shown that the trade-off between cost and school quality is often favorable for low-income students, where small increases in cost come with large predicted increases in the likelihood of completion: “Compared to their high-income peers, students from low-income families are sometimes predicted to face a more appealing net price/completion trade-off associated with moving to a college with a higher average SAT score.”<sup>63</sup>

Importantly, undermatch is not just a problem for high-achieving students. In other words, even students who may not qualify for the most selective institutions attend colleges below their level of ability at a rate of 40 percent or more. Though academic undermatch is a widespread phenomenon, it is “more common among those students from low socioeconomic status families, who live in rural areas, and whose parents have no college degree.”<sup>64</sup>

According to economist Jonathan Smith, just getting students to apply to more colleges would increase the likelihood of enrolling, based on National Center for Education Statistics (NCES)

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<sup>58</sup> Hoxby and Avery describe this application behavior as “income-typical.”

<sup>59</sup> Judith Scott-Clayton, “College Is Cheaper Than You Think,” *New York Times*, November 4, 2011, <http://economix.blogs.nytimes.com/2011/11/04/college-is-cheaper-than-you-think/?emc=eta1>.

<sup>60</sup> See Hoxby and Avery; and Philip Oreopoulos and Uros Petronijevi, “Making College Worth It: A Review of the Returns to Higher Education,” *The Future of Children*, Vol 23, No 1, Spring 2013.

<sup>61</sup> Donald E. Heller, “Student Price Response in Higher Education: An Update to Leslie and Brinkman,” *The Journal of Higher Education*, Vol 68, No 6, 1997.

<sup>62</sup> Laura J Horn, Xianglei Chen, and Chris Chapman, “Getting Ready to Pay for College: What Students and Their Parents Know About the Cost of College Tuition and What They Are Doing to Find Out,” National Center for Education Statistics Report No. 2003030, 2003; Eric Grodsky and Melanie Jones, “Real and imagined barriers to college entry: Perceptions of cost,” *Social Science Research*, Volume 36, Issue 2, June 2007, Pages 745–766.

<sup>63</sup> Matea Pender, Jonathan Smith, Michael Hurwitz, and Jessica Howell, “College Choice: Informing Students’ Trade-Offs Between Institutional Price and College Completion,” The College Board, Policy Brief, October 2012.

<sup>64</sup> Jonathan I. Smith, Matea Pender, and Jessica S. Howell. 2013. “The Full Extent of Academic Undermatch,” *Economics of Education Review*, 32: 247-261.

survey data for high school students in the class of 2004 who applied to at least one bachelor's degree-granting institution. Smith found that "Increasing the number of college applications from one to two can increase a student's probability of enrolling at a four-year college by 40 percent, and increasing the number of applications from two to three can increase a student's probability of enrollment by 10 percent." However, Smith also noted that students with low grades or SAT scores, and those from low-SES families, submit relatively few college applications. High-SES students submit one more college application, on average, than low-SES students.<sup>65</sup>

A related challenge in the college pipeline is the "summer melt" phenomenon whereby high school graduates who plan to go to college as of the end of their senior year fail to matriculate in the fall. Each year, about 10-20 percent of all recent high school graduates who have been accepted and intend to enroll in college just before graduation do not matriculate in the fall; summer melt is even more prevalent among low-income students.<sup>66</sup> Summer melt can occur for many reasons, including students' confusion about financial aid award letters and tuition bills and missed deadlines that can get students off-track. According to researchers Benjamin Castleman and Lindsay Page, "As a result, students who have already surmounted many obstacles to college enrollment and who would potentially earn high returns to postsecondary education may nonetheless fail to matriculate."<sup>67</sup>

## Promising interventions to help low-income students enroll in match institutions and succeed in college

Early evidence suggests that even low-touch, low-cost interventions can help low-income students apply to and enroll in match colleges. Promising interventions include providing low-income students tailored information on college options, removing barriers that prevent low-income students from submitting applications, and providing financial aid opportunities. While we are beginning to learn what works to improve college match, further rigorous experimentation and evaluation is necessary to determine the best practices that should be brought to scale.

Hoxby and Avery observed that because high-achieving, low-income students who are likely to

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<sup>65</sup> Jonathan Smith, "The Effect of College Applications on Enrollment," *B.E. Journal of Economic Analysis & Policy, Contributions*, December 2013, 14(1): 151-188; Jonathan Smith, "Can Applying to More Colleges Increase Enrollment Rates?," The College Board, Research Brief, October 2011, [http://advocacy.collegeboard.org/sites/default/files/11b\\_4313\\_College%20App%20Research%20Brief\\_WEB\\_1110\\_26.pdf](http://advocacy.collegeboard.org/sites/default/files/11b_4313_College%20App%20Research%20Brief_WEB_1110_26.pdf).

<sup>66</sup> Benjamin L. Castleman and Lindsay C. Page, "A trickle or a torrent? Understanding the extent of summer "melt" among college-intending high school graduates," *Social Science Quarterly*, 2013.

<sup>67</sup> Benjamin L. Castleman and Lindsay C. Page (in progress), *Mitigating Summer Melt*, Cambridge, MA: Harvard Education Press.

undermatch are geographically dispersed, effective, scalable interventions for most “income-typical” students cannot, therefore, rely on geographic proximity of targeted students.<sup>68</sup> Hoxby and Avery suggested using alumni networks to reach out to students, and disseminating written information to “income-typical” high-achievers through mail or social media.

Waiving fees and reducing additional paperwork have also been shown to encourage students to apply to more colleges. Jonathan Smith found that a 13 percent decrease in application costs induces students to apply to one more college, which in turn increases the probability of enrolling by 18 percent.<sup>69</sup> Economist Amanda Pallais of Harvard found that when the ACT increased the number of score reports that students could send to colleges for free from three to four, the fraction of students who sent four reports increased substantially as the fraction who sent three reports declined by an offsetting amount. Pallais’ study suggests that although the cost of sending a non-free ACT score was only \$6, the behavioral response to even small cost barriers is significant.<sup>70</sup>

Through the Expanding College Opportunities (ECO) project, economists Caroline Hoxby and Sarah Turner tested the information-dissemination approach, combined with college application fee waivers, and observed very positive results. Their low-cost, scalable intervention sent information packets to low-income, high-achieving high school students with application guidance, information on expected net cost, and application fee waivers. These packets led students to submit 19 percent more applications, and increased the likelihood of enrolling in a match school by 41 percent. Among just the students who remembered receiving the packets when later surveyed, the positive impacts were even greater – they were admitted to 31 percent more schools and were 78 percent more likely to get into a match college. The Hoxby and Turner intervention cost just \$6 per student.<sup>71</sup> Further study is needed to determine the efficacy of this approach for low-income students with more modest academic credentials.

The intervention designed by Hoxby and Turner was intended to be implemented at scale by a third party organization that could act as a credible and neutral source of information for students.<sup>72</sup> The College Board scaled the intervention in 2013 for all high-achieving, low-income students who took the PSAT or SAT, mailing information and eight college application fee waivers to more than 28,000 high-achieving, low-income students to date. The College Board’s goal with this *Access to Opportunity* campaign is to ensure that these students have the

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<sup>68</sup> “Income-typical” students are dispersed but urban. However, unlike “achievement-typical” students, “income-typical” students are more likely from blue-collar areas with fewer local elite institutions.

<sup>69</sup> Jonathan Smith, “The Effect of College Applications on Enrollment,” *B.E. Journal of Economic Analysis & Policy, Contributions*, December 2013, 14(1): 151-188.

<sup>70</sup> Amanda Pallais, “Small Differences that Matter: Mistakes in Applying to College,” *Journal of Labor Economics*, forthcoming.

<sup>71</sup> Caroline Hoxby and Sarah Turner, “Expanding College Opportunities for High-Achieving, Low Income Students,” Stanford Institute for Economic Policy Research, March 2013.

<sup>72</sup> Hoxby, C.M. and Turner, S.E. 2013. “Informing Students about Their College Options: A Proposal for Broadening the Expanding College Opportunities Project,” The Hamilton Project, Brookings Institution.

necessary information to help them more effectively explore the full range of colleges to which they have earned access. The College Board's *Apply to 4 or More* campaign encourages college-ready, low-income students to expand their college search and consider a range of institutions to ensure a strong academic match and increase the likelihood of enrollment and completion. In October 2013, approximately 70,000 students received packets modeled on the Access to Opportunity campaign and 200,000 received electronic college planning information. Additionally, the College Board has partnered with Delaware Governor Jack Markell and Delaware colleges and universities to supply customized information and resources to Delaware high school seniors with demonstrated academic achievement<sup>73</sup>

Early research shows that low-cost interventions can successfully combat summer melt, though further experiments and evaluation are needed.<sup>74</sup> University of Virginia professor Benjamin Castleman and University of Pittsburgh professor Lindsay Page have piloted and studied interventions specifically designed to provide students with simplified and time-sensitive information about tasks they need to complete in order to matriculate and to connect them to professional counseling assistance, with promising results. To test the impact of text messaging and peer-mentor outreach on college enrollment, Castleman and Page collaborated with Dallas Independent School District, Mastery Charter Schools, and uAspire, a nonprofit that partners with high schools, colleges, and community organizations, to provide college affordability guidance to 10,000 students and families each year. (According to uAspire, over the past 3 years, they have helped students secure more than \$250 million in financial aid and continue to maintain a 75 percent college graduation rate for their students.)<sup>75</sup> Peer mentoring, at a cost of \$80 per student, increased four-year enrollment by 4.5 percentage points, while text messages, at a cost of just \$7 per student, increased two-year enrollment by nearly 3 percentage points, and in districts where students lacked access to quality college counseling or information, overall enrollment increased by an even greater margin.<sup>76</sup>

While helping students enroll in the best-fit institutions should lead to better college outcomes, it is important to continue student supports once they arrive on-campus. There are promising examples of "learning communities" at two-year colleges that group together low-income or other disadvantaged students to foster peer bonding and concentrate student support services.

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<sup>73</sup> <http://news.delaware.gov/2013/09/18/governor-markell-and-college-board-partner-to-increase-college-access-for-delawareans/>

<sup>74</sup> Benjamin L. Castleman, Lindsay C. Page, and Korynn Schooley, "The Forgotten Summer: Does the Offer of College Counseling After High School Mitigate Summer Melt Among College-Intending, Low-Income High School Graduates?," Center on Education Policy and Workforce Competitiveness, July 2013, p. 2, [http://curry.virginia.edu/uploads/resourceLibrary/15\\_Castleman-Forgotten\\_Summer.pdf](http://curry.virginia.edu/uploads/resourceLibrary/15_Castleman-Forgotten_Summer.pdf).

<sup>75</sup> <http://www.uaspire.org/students>.

<sup>76</sup> Benjamin L. Castleman and Lindsay C. Page, "Summer Nudging: Can Personalized Text Messages and Peer Mentor Outreach Increase College Going Among Low-Income High School Graduates?," Center on Education Policy and Workforce Competitiveness, updated October 2013, [http://curry.virginia.edu/uploads/resourceLibrary/9\\_Castleman\\_SummerTextMessages.pdf](http://curry.virginia.edu/uploads/resourceLibrary/9_Castleman_SummerTextMessages.pdf).

Researchers from MDRC reviewed the findings from six randomized experiments with learning communities for students at community colleges placed in developmental English and math and found that learning communities that provide substantially enhanced student supports, such as extra advising or the opportunity to accumulate more credits, are more likely to be effective.<sup>77</sup>

Additionally, enhanced on-campus student supports combined with scholarship aid have been shown to be more effective in promoting persistence and completion than financial aid alone.<sup>78</sup> Evaluating a randomized field experiment that tested two interventions at a large Canadian university, economists Joshua Angrist, Daniel Lang, and Philip Oreopoulos found that scholarships combined with peer advising and organized study group services increased retention.<sup>79</sup> Mentoring students once they are in college has also been shown to increase persistence and completion. Economists Eric Bettinger and Rachel Baker studied the impact of college coaching provided through colleges by InsideTrack, an independent company that provides one-on-one student coaching, and found that even two years after the intervention, retention was up 14 percent. Coaching also increased graduation rates by 4 percentage points, from 31 percent to 35 percent.<sup>80</sup>

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<sup>77</sup> Weiss, Michael J., Visher, Mary; Weissman, Evan, "Learning Communities for Developmental Education Students: A Synthesis of Findings from Randomized Experiments at Six Community Colleges," Society for Research on Educational Effectiveness (2012).

<sup>78</sup> David Deming and Susan Dynarski, "Into College, Out of Poverty? Policies to Increase the Postsecondary Attainment of the Poor," Phil Levine and David Zimmerman, eds. Targeting Investments in Children: Fighting Poverty When Resources are Limited, NBER Conference Report, 2010.

<sup>79</sup> Angrist, Joshua, Daniel Lang, and Philip Oreopoulos. "Incentives and Services for College Achievement: Evidence from a Randomized Trial." *American Economic Journal: Applied Economics* 1, 1 (January 2009): 136-163.

<sup>80</sup> Eric Bettinger and Rachel Baker, "The Effects of Student Coaching in College: An Evaluation of a Randomized Experiment in Student Mentoring," National Bureau of Economic Research, March 2011.

## Commitments to Increase College Match and Completion

In response to the White House's call to address issues of college preparation and success, a number of colleges and universities, philanthropic organizations, and businesses are making commitments designed to increase college match and improve completion rates for low-income students. Universities are making commitments such as:

- Setting a target to increase the share of incoming first-year students who are low-income
- Expanding existing scholarships or creating new scholarship programs for low-income students
- Committing to increase outreach to students that could be eligible for selective institutions, including through personalized messages
- Increasing transfers from community colleges and expanding relationships with community colleges to improve this pipeline
- Providing more opportunities for low-income students to visit campus or engage with alumni
- Partnering with the Posse Foundation which helps colleges admit first-generation and low-income students in cohort groups, creating a support system throughout college.
- Promoting completion through peer bonding by creating groups of disadvantaged students to support one another
- Creating summer and/or winter session programs that provide additional advising to low-income students.
- Provide funding support for low-income students to take unpaid internships or participate in study abroad in order to equalize the experiences that low-income and wealthier students receive in college
- Providing additional support services including academic assistance and mentoring for students to encourage completion and persistence in STEM fields, where disadvantaged academic success are underrepresented.

## Organizations making commitments to increase match and success include:

Allegheny College	Hiram College	Tufts University
Alma College	Hispanic Association of Colleges and Universities	United Negro College Fund
American Association of Community Colleges	Howard Hughes Medical Institute	Univeristy of Washington
Amherst College	Howard University	University of Arkansas
Augsburg College	Iowa State	University of California System
Augustana College	Kalamazoo College	University of California, Davis
Barnard College	Kenyon College	University of California, Merced
Bates Colege	Lawrence University	University of Colorado- Boulder
Bowdoin College	Leadership Enterprise for a Diverse America	University of Delaware
Brown University	Lewis & Clark College	University of Houston
Bryn Mawr College	Louisiana State University	University of Maryland, Baltimore County
California State University	Massachusetts Institute of Technology	University of Minnesota
Carnegie Mellon University	Morehouse College	University of Missouri
Centre College	Morgan State University	University of Nebraska
Chegg	Mount Holyoke	University of North Carolina
Cheyney University	National College Access Network	University of Pennsylvania
Claremont McKenna College	National Council for Community and Education Partnerships	University of Puget Sound
College Board	National Education Foundation	University of South Carolina
College of the Holy Cross	Navajo Technical University	University of Rochester
College Summit	North Carolina State University	University of Tennessee, Knoxville
College Summit	Northeastern University	University of Texas at Austin
Council for Opportunity in Education	Oberlin College	University of Vermont
Davidson College	Oregon Institute of Technology	University of Virginia
Drake University	Pitzer College	University of Wisconsin
Education Commission of the States	Pomona College	University of Wisconsin-Madison
ESC GEAR UP in South Texas	Portland State University	University System of Maryland
Florida International University	Posse Foundation	Vassar College
Franklin and Marshall	Princeton University	Washington and Jefferson College
Georgetown University	Scripps College	Washington University in St. Louis
Georgia Institute of Technology	Skidmore College	Wellesley College
Georgia State	Smith College	Wesleyan University
Georgia Tech	Spelman College	West Virginia Higher Education Policy Commission
Goucher College	Stony Brook University	Whittier College
Hamilton College	SUNY	Wilkes University
Harvard College	The University of Kansas	William Jewell College
Harvey Mudd College	The University of New Hampshire	Williams College
Helmsley Charitable Trust	Univeristy of California, San Diego	Yale University

## II. Increasing the Pool of Students Preparing for College

While increasing access to selective institutions improves college outcomes for low-income students who have already prepared to apply for college, we need to reach many more low-income students in order to bridge the income gap in college access. In addition to helping college-eligible low-income students attend schools that are the best fit for them, we also need to increase the pool of low-income students who aspire to earn a college degree and take the steps needed to achieve that goal. Laura Rendon of California State University, Long Beach remarked, “By the time students get to 12<sup>th</sup> grade, it is too late to improve college-eligibility... It could be said that students begin to drop out of college in grade school,”<sup>81</sup> illustrating how critical it is to reach students early to establish college expectations and to imbue them with the experiences and support they need to view college as an attainable aspiration.

Increasing the pool will require early interventions to get low-income students thinking about college well before their senior year. Promising interventions to increase the pool include summer enrichment programs and college visits, promoting a strong college-going culture in middle- and high-schools, early exposure to STEM education, and helping students understand their financial aid eligibility so they know college can be affordable. However, as researchers such as Ron Haskins and Cecilia Rouse have noted, there is a need for significant additional evaluation to establish evidence-based best practices to guide how the federal government and other organizations dedicate resources to increase college readiness.<sup>82</sup>

### Too few low-income students are prepared for college

Gaps in aspirations and college preparation manifest for many low-income students early on in their academic career. According to ACT, academic achievement by 8<sup>th</sup> grade has a greater influence on college and career readiness by high school graduation than academic achievement at any time during high school.<sup>83</sup> Among low-income students who are academically far off-track in 8<sup>th</sup> grade, fewer than 20 percent are able to meet ACT’s College Readiness benchmarks by senior year.<sup>84</sup> Moreover, developing positive academic behaviors in upper elementary grades and in middle school – behaviors such as academic discipline, relationships with school personnel, motivation, and family involvement – can help support

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<sup>81</sup> Laura Rendon, “Reconceptualizing Access in Postsecondary Education and Its Ramifications for Data Systems,” National Postsecondary Education Cooperative, 1998.

<sup>82</sup> Ron Haskins and Cecilia Elena Rouse, “Time for Change: A New Federal Strategy to Prepare Disadvantaged Students for College,” The Future of Children, Princeton-Brookings, Policy Brief Spring 2013, [http://futureofchildren.org/futureofchildren/publications/docs/23\\_01\\_PolicyBrief.pdf](http://futureofchildren.org/futureofchildren/publications/docs/23_01_PolicyBrief.pdf).

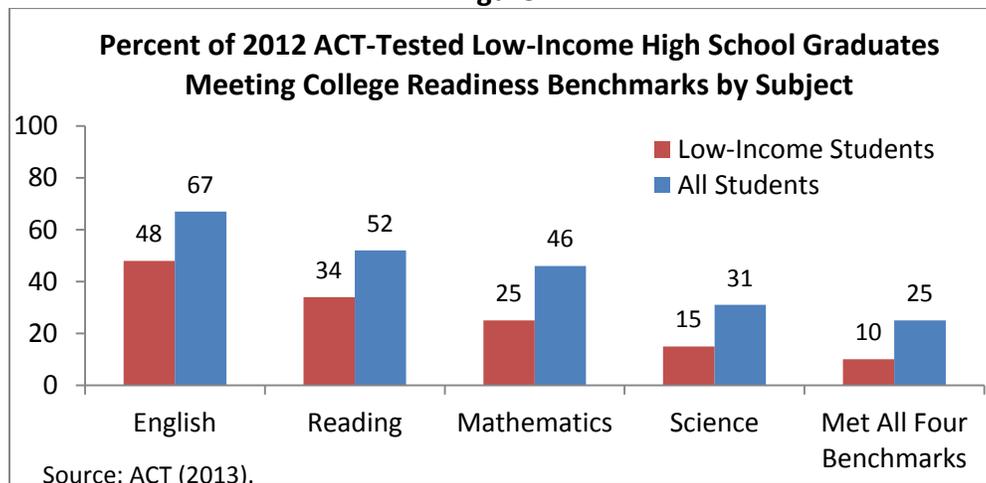
<sup>83</sup> ACT, “The Forgotten Middle: Ensuring that All Students Are on Target for College and Career Readiness before High School,” 2008, <http://www.act.org/research/policymakers/pdf/ForgottenMiddle.pdf>.

<sup>84</sup> ACT, “Catching Up To College and Career Readiness,” 2012, <http://www.act.org/research/policymakers/reports/catchingup.html>.

students' college and career readiness.<sup>85</sup>

Low-income high-school students (especially those who enter high-school academically underprepared) are also less likely to take courses that prepare them for college. The share of 18 year olds taking an AP exam rose substantially from just 2 percent in 1977 to 34 percent in 2007.<sup>86</sup> According to the College Board's annual report on the AP program, in 2012, more than one-quarter of the high school graduates who took at least one AP examination were low-income. However, the College Board also observed that each year, hundreds of thousands of students do not participate in AP courses for which they have high potential, in large part because of "the lower availability of a variety of AP courses in schools with higher numbers of low-income and traditionally underserved minority students."<sup>87</sup> Among 2012 low-income high-school graduates who had taken the ACT, those who took at least a core curriculum of four years of English and 3 years each of math, science, and social studies were more likely to meet ACT's College Readiness Benchmarks, especially in math. However, low-income students are less likely to complete a core curriculum than students from higher-income families. In every subject area, students from low-income families are less likely to meet performance benchmarks [Figure 4].<sup>88</sup>

Figure 4



Encouragingly, college aspirations among low-income students have increased considerably over the past 30 years. In fact, the largest gains in college aspirations have been among low-income students.<sup>89</sup> However, though more low-income students now want to go to college, it is still the case that too few low-income students take concrete steps toward making that a reality

<sup>85</sup> ACT, "The Condition of College & Career Readiness: Low-Income Students Class of 2012," 2013, <http://www.act.org/newsroom/data/2012/states/pdf/LowIncomeStudents.pdf>.

<sup>86</sup> Bound, Hershbein, and Long (2009).

<sup>87</sup> The College Board, "9<sup>th</sup> Annual AP Report to the Nation," February 13, 2013, <http://apreport.collegeboard.org/>.

<sup>88</sup> ACT, "The Condition of College & Career Readiness: Low-Income Students Class of 2012," 2013, <http://www.act.org/newsroom/data/2012/states/pdf/LowIncomeStudents.pdf>.

<sup>89</sup> Venezia and Jaeger, "Transitions from High School To College, *The Future of Children* Vol 23, No 1, Spring 2013.

compared to their higher-income peers.<sup>90</sup>

Though low-income students are catching up to their high-income peers in college aspirations, considerable gaps remain in college preparation, application, and enrollment. Economists Christopher Avery of Harvard and Thomas J. Kane of UCLA compared college aspirations and outcomes for low-income and high-income students by surveying seniors at Boston area schools. Low-income serving high schools were identified by their participation in the College Opportunity and Career Help (COACH) program, which brings students from Harvard University into three public high schools in Boston to work as coaches to help high school seniors make future plans and submit college and financial aid applications. As of the fall of senior year, a large majority of all students had plans to attend college – roughly 70 percent of students at COACH schools, and 91 percent of students at a well-resourced comparison school. Yet students at the low-income serving high schools were far less likely to engage in college preparation activities such as taking the SAT, getting college counseling, or visiting college campuses – and they were considerably less likely to carry a grade point average of B or higher. As a result, students at COACH schools were far less likely to ultimately enroll – leaving a large gap between college aspirations and college outcomes.<sup>91</sup>

Additionally, the same perceived cost barriers that contribute to undermatching also lead many low-income families to believe that college – any college – may be unaffordable, leading some students to write-off college as a possibility long before their senior year. The What Works Clearinghouse recommends providing financial aid workshops for parents and students long before they apply to college, to help inform their understanding of the true costs and benefits of college early in the college preparation process: “Financial literacy about college affordability is an example of an activity that could occur as early as 9<sup>th</sup> grade.”<sup>92</sup>

Research also shows that a strong college-going culture is a key ingredient in getting outcomes up to par with aspirations. The Consortium of Chicago School Research (CCSR) at the University of Chicago found that “across all our analyses, the single most consistent predictor of whether students took steps toward college enrollment was whether their teachers reported that their high school had a strong college climate.” CCSR found that those who attended schools where students were pushed to attend college and supported in the college application process were more likely to attend college and more likely to attend a match institution. Moreover, a college-going culture had the biggest positive enrollment impacts on students with the lowest

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<sup>90</sup> Jonathan Smith and Jessica S. Howell, “[Getting Into College: A Cross-Cohort Examination of College Preparations by Lower-SES Students](#),” The College Board, Policy Brief. October 2011.

<sup>91</sup> Christopher Avery and Thomas Kane, “Student Perceptions of College Opportunities: The Boston COACH Program,” in *College Choices: The Economics of Where to Go, When to Go, and How to Pay for it*, National Bureau of Economic Research, September 2004.

<sup>92</sup> NCEE What Works Clearinghouse, “Helping Students Navigate the Path to College: What High Schools Can Do,” September 2009.

academic qualifications.<sup>93</sup> Though this culture is important, it is also lacking for students in many schools. Half of high school counselors surveyed in the College Board’s 2012 Survey of School Counselors and Administrators believe that counselors should spend more time on building a college-going culture.<sup>94</sup>

## Evidence and promising interventions to increase the pool of college ready students

Getting more students ready for college will require an all-hands-on-deck approach with multiple early interventions to tackle the myriad obstacles low-income students face in preparing for college, including early interventions to connect low-income students to college, summer programs and other enrichment activities, financial aid awareness and opportunities, and early exposure to STEM education and college level coursework.

There are several studies of promising new teaching methods that use technology based learning, personalized approaches, and increased instructional time. One study found that middle schools and high schools that adopted an Algebra I curriculum that used a personalized, blended learning approach [that ensures students master subjects before progressing] significantly boosted high school Algebra scores by enough to move a student at the 50<sup>th</sup> to the 58<sup>th</sup> percentile.<sup>95</sup> Another study found that teachers who used classroom connectivity technology in Algebra I led to a statistically significant effect on achievement.<sup>96</sup> An additional study found that doubling math instructional time for underprepared high school freshmen through a teaching strategy that allowed students to develop intermediate math skills before moving on to Algebra instruction improved math achievement and led to more positive attitudes about math.<sup>97</sup>

Another successful reform effort to increase the learning and employment outcomes of low-income students takes an even broader approach to revamping high school education. High school redesign efforts realign the structure and curricula of secondary schools to better

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<sup>93</sup> Roderick, M., Nagaoka, J., Coca, V., Moeller, E. 2008. “From High School to the Future: Potholes on the Road to College.” Consortium on Chicago School Research, Chicago, March, [http://ccsr.uchicago.edu/sites/default/files/publications/CCSR\\_Potholes\\_Report.pdf](http://ccsr.uchicago.edu/sites/default/files/publications/CCSR_Potholes_Report.pdf).

<sup>94</sup> The College Board, 2012, “True North: Charting the Course to College and Career Readiness,” <http://nosca.collegeboard.org/research-policies/annual-survey>.

<sup>95</sup> John F. Pane, Beth Ann Griffin, Daniel F. McCaffrey and Rita Karam, “Effectiveness of Cognitive Tutor Algebra I at Scale,” *Educational Evaluation and Policy Analysis*, 2013.

<sup>96</sup> Stephen J. Pape et al, “The Impact of Classroom Connectivity in Promoting Algebra I Achievement: Results of a Randomized Control Trial,” *Effective Education*, 2013.

<sup>97</sup> Robert Balfanz, Vaughan Byrnes, Nettie Legters, “A Randomized Trial of Two Approaches to Increasing Mathematics Achievement for Underprepared Freshmen,” Johns Hopkins Center for Social Organization of Schools.

prepare students for a career. One example of high school redesign is Career Academies, which have been proliferating in the United States over the past 35 years; there are currently 2,500 Career Academies around the country. Career academies are typically organized as small learning communities, combine academic and technical curricula around a career theme, and establish partnerships with local employers to provide work-based learning opportunities.

MDRC, a social policy research organization, began evaluating Career Academies in 1993 and in 2008 published its findings on long-term education and earnings outcomes. The study examined nine diverse, urban high schools around the country that in total served 85 percent Hispanic and African-American students; because more students apply to Academies than there are slots, MDRC was able to randomly select applicants to attend an Academy while the remaining applicants attended non-Academy control institutions. MDRC found that compared to the control group, Career Academies led to an 11 percent increase in earnings per year, and that the earnings boost was sustained over the 8 year follow-up period – an annual earnings premium of about \$2,000 (in 2006 dollars). 90 percent of Academy students in the study graduated from high school or completed their GED and about half of students earned a post-secondary credential – considerably better outcomes than for minority students overall.<sup>98</sup> By comparison, about 30 percent of African Americans age 25 and older have a postsecondary degree nationally.<sup>99</sup>

Several successful programs use cohort-based models to identify students at an early age and follow them through college. The U.S. Department of Education Gaining Early Awareness and Readiness for Undergraduate (GEAR UP) grants to states and partnerships (including local school districts) fund programs that follow students no later than sixth grade all the way through college and provide mentoring, outreach, and support services. In fall 2006, 46 percent of low-income GEAR UP scholars enrolled in college, compared to the 34 percent national enrollment rate for low-income students.<sup>100</sup>

One promising GEAR UP program is West Virginia GEAR UP, which has improved college readiness across a variety of measures. West Virginia GEAR UP operates in 14 schools and is funded through a 6-year, \$18 million grant awarded in 2008. Between the first and third year of WV GEAR UP, the share of students who spoke with someone about financial aid increased from 24 percent to 81 percent. The program is projected to serve over 13,000 students and in 2010-11 helped 2,386 students visit a college campus.<sup>101</sup> The WV GEAR UP is now collaborating with economist Benjamin Castleman to pilot text message interventions.

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<sup>98</sup> James J. Kemple, "Career Academies: Long-Term Impacts on Labor Market Outcomes, Educational Attainment, and Transitions to Adulthood," MDRC, June 2008, [http://www.mdrc.org/sites/default/files/full\\_50.pdf](http://www.mdrc.org/sites/default/files/full_50.pdf).

<sup>99</sup> U.S. Census Bureau.

<sup>100</sup> U.S. Department of Education, <http://www2.ed.gov/programs/gearup/performance.html>.

<sup>101</sup> West Virginia Higher Education Policy Commission, "2011 Year in Review" <https://www.wvhepc.org/resources/2011YearInReview.pdf>

Similarly, the I Have a Dream Foundation (IHDF) sponsors cohorts of 50-100 children at low-income elementary schools and housing projects and follows these “Dreamers” for 12-15 years through high school. The sponsorship provides mentorship, counseling, employment and community service opportunities, as well as last-dollar scholarships.<sup>102</sup> Since it began in 1981, almost 200 IHDF programs have operated in 27 states, serving over 15,000 Dreamers. A 2010 study showed that nearly 85 percent of New York City Dreamers received their high school diploma or GED, compared with the 55 percent postsecondary completion rate for New York City public school students overall. A 2001 study found that IHDF had a dramatic impact on high school completion and college enrollment for Dreamers, averaging 10-15 percentage points higher than their peers.<sup>103</sup>

Project GRAD is a comprehensive model that provides wrap around supports for students in pre-K through grade 12 and into college. Founded in 1993, it includes academic support, parent engagement, social services, college access programming, and non-competitive scholarships. GRAD works in pre-K – 12 feeder patterns to ensure consistent support in math and literacy, including classroom management consulting. GRAD’s college access program includes summer bridge programs at local universities; college and career planning through individual counseling, college access forums, workshops, and career fairs; college visits for students and parents; SAT/PSAT preparation; assistance with loan and scholarship applications; and tutoring and mentoring.

In the longest-served group of schools, GRAD’s students are completing college at a 92 percent rate, and earning STEM degrees at a rate 71 percent above the national average for minority students. Moreover, the longest-served high school in the GRAD network, in Houston, Texas, has the lowest drop-out rate in the Houston Independent School District, outperforming schools located in higher socio-economic areas.<sup>104</sup>

College Track provides comprehensive services to students from 9<sup>th</sup> grade through college graduation. College Track provides high school students with academic support, college advising, training, tutoring, case management, ACT Prep, workshops, one-on-one mentoring, college application support, and scholarship and FAFSA completion support. While in college, students receive one-on-one mentoring in the freshman and sophomore years, financial assistance, case management and cohort model support. Over 90 percent of College Track students are accepted into 4-year universities, compared to only 50 percent of non-College Track students in the same neighborhoods. Additionally, College Track’s students graduate from college at 2.5 times the rate of their peers.<sup>105</sup>

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<sup>102</sup> <http://www.socialimpactexchange.org/sites/www.socialimpactexchange.org/files/IHDF-NY%20Metro%20Program%20Evaluation%20Report%202010.pdf>.

<sup>103</sup> I Have A Dream: The Impacts; Arete Corporation;  
[http://www.ihaveadreamfoundation.org/images/downloads/AreteSummary\\_2003.pdf](http://www.ihaveadreamfoundation.org/images/downloads/AreteSummary_2003.pdf);

<sup>104</sup> <http://www.socialimpactexchange.org/organization/project-grad-usa>.

<sup>105</sup> <http://collegetrack.org/main/>.

## Commitments to Increase the Pool of Students Preparing for College

In response to the White House’s call to address issues of college preparation and success, a number of colleges and universities, philanthropic organizations, and businesses are making commitments designed to increase the number of students who prepare for college.

Universities are making commitments such as:

- Hosting summer enrichment programs for elementary school students that receive free or reduced-price school lunches
- Creating STEM summer programs that offer high school students access to research and professionals to encourage interest and success in STEM fields
- Partnering with local high schools to create programs that span high school and provide a guarantee of admission to college with financial support upon program completion.
- Encourage current college and university students to tutor low-income high school students
- Offering real-world learning experiences in partnership with businesses that help students understand career options and postsecondary requirements
- Distributing content that inspires high school students to advanced academic achievement, guides them through the steps they will need to take, and highlights the resources already available nationally and in their communities
- Offering college faculty to interact with high school students
- Funding micro-scholarship programs for high school students to increase their achievement
- Offering high school students the chance to participate in college-level courses

### Organizations making commitments to increase the pool include:

100K in 10	Knox College	Pitzer College
American Council on Education	Lewis & Clark College	Princeton University
Blue Engine	Massachusetts Institute of Technology	Scripps College
Carnegie Mellon University	Morgan State University	The University of New Hampshire
Chegg	Mount Holyoke	Tulane
College Summit	National College Access Network	University of California, San Diego
Drake University	National Council for Community and Education Partnerships (NCCEP)	University of California, Berkeley
Florida International University	National Education Foundation	University of Chicago
Georgia Institute of Technology	Nebraska Wesleyan University	University of Delaware
Georgia Tech	Northern Virginia Community College	University of Nebraska
Hewlett Foundation	Northwestern University	University of Rochester
Hobart and William Smith Colleges	Oberlin College	University of Texas at Austin
I Have a Dream	OneGoal	University of Wisconsin
Iowa State	Oregon Institute of Technology	Washington University in St. Louis
Irvine Foundation	Oregon Tech	Whittier College
Kenyon College	PG&E	Williams College

### III. Reducing inequalities in college advising and test preparation

Access to college advising is critically important for students as they prepare to apply to college, yet students from low-income families and disadvantaged backgrounds have few experts or mentors to turn to for support and advice. Low-income students are often at a triple disadvantage when it comes to advising and mentorship: their schools have fewer counselors, they can't afford extra advising or test prep, and they often cannot turn to their parents or peers for college insight. To address these inequities, we need to recruit more counselors, advisors, and near-peer mentors to help guide low-income students through the college application and financial aid process. Organizations around the country are working to scale up their efforts to bring more counselors to low-income high-schools, and pair more students with mentors.

#### Inequality in college advising and test preparation

Low-income students have less access to college advising and preparation, undermining their college access and success. Research indicates that high schools serving predominantly low-income and minority students have 1,000 students for every counselor, compared to a national average of 470 students per counselor, though the American School Counselor Association recommends a ratio of 250 students per counselor.<sup>106</sup> By contrast, students from wealthy backgrounds have access to SAT prep and admissions expertise, which cost thousands of dollars.<sup>107</sup> According to the Independent Educational Consultant Association, 22 percent of students applying to competitive colleges receive individualized counseling beyond what is offered by their high school counselors; these students are likely to have higher grades, higher SAT scores, and come from families with higher incomes.<sup>108</sup>

While research shows that much of the impact of SAT scores on college outcomes is explained by family income – that is, students from higher-income families are more likely to succeed in college and also tend to have higher SAT scores – the SAT/ACT gap by income is nevertheless a barrier to increasing college access and success.<sup>109</sup> Performance on the SAT and ACT is a major factor in determining whether and where students are accepted to college and ultimately enroll. Among college-bound seniors, average SAT scores increase steadily by family income.<sup>110</sup>

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<sup>106</sup> <http://www.schoolcounselor.org/asca/media/asca/home/Ratios10-11.pdf>.

<sup>107</sup> See Ron Haskins, Harry Holzer and Robert Lerman, “Promoting Economic Mobility by Increasing Postsecondary Education,” Economic Mobility Project, Pew Charitable Trusts, May 2009, pp. 43-44.

<sup>108</sup> See Avery, Christopher 2009. “The Effects of College Counseling on High-Ability, Low-Income Students: Results of a Pilot Study with a Randomized Control Trial.” National Bureau of Economic Research Working Paper no 16359.

<sup>109</sup> See for example Jesse Rothstein, “College performance predictions and the SAT,” *Journal of Econometrics*, Volume 121, Issues 1–2, July–August 2004, Pages 297–317.

<sup>110</sup> <http://www.fairtest.org/college-admissions-tests-show-testdriven-schooling>.

The impact of counselors is a nascent area of study, but early research indicates that high school counseling can have a significant impact on college outcomes. Michael Hurwitz and Jessica Howell recently found that adding one additional counselor to a high school's staff increases four-year college-going by 10 percentage points. That is, if a typical high school serving 113 seniors hired one additional counselor, 11 more seniors would enroll in a four-year school. By examining high schools in states with mandated counselor-to-student ratios, Hurwitz and Howell employed a regression discontinuity design that measured college outcomes for students at similar schools with student populations just above and just below the mandate to isolate the impact of additional counselors. Despite the importance of high school counselors, these positions are among the first to be eliminated as a result of budget cuts; in fact, the recent recession caused mass layoffs of high school counselors as states were dealing with considerable budget shortfalls.<sup>111</sup>

Additionally, low-income, first generation, and minority students generally lack the support needed to determine how to apply for financial aid.<sup>112</sup> Education economists and advocates have raised concerns over the need to simplify the financial aid application process through the Free Application for Federal Student Aid (FAFSA),<sup>113</sup> the form required to qualify for Pell Grants and other federal financial aid; many states and institutions use the FAFSA to determine aid packages as well. The Obama Administration has taken steps to make the FAFSA process easier and more efficient.<sup>114</sup> Nevertheless, low-income students who fail to complete the FAFSA miss out on financial aid for which they are eligible by failing to complete the.

### **Evidence and promising interventions to increase college success through reducing the inequality in college advising and ACT/SAT prep**

Providing college advising and test prep assistance to low-income students not only boosts SAT scores and college application, but it leads to increased college attendance and completion. Empirical research has shown positive impacts of both professional and college-student advisors on college outcomes for low-income high school students, and many organizations around the country are filling the need for more counselors by recruiting and employing college students and recent graduates. While peer and near-peer counseling is not a substitute for increasing low-income students' access to professional counselors, peer and near-peer mentors

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<sup>111</sup> Michael Hurwitz and Jessica S. Howell. Forthcoming. "A Regression Discontinuity Approach to Identifying the Impact of High School Counselors on Student Outcomes," *The Journal of Counseling and Development*.

<sup>112</sup> See Ron Haskins, Harry Holzer and Robert Lerman, "Promoting Economic Mobility by Increasing Postsecondary Education," Economic Mobility Project, Pew Charitable Trusts, May 2009, p. 43.

<sup>113</sup> Susan M. Dynarski, Judith E. Scott-Clayton, "The Cost of Complexity in Federal Student Aid: Lessons from Optimal Tax Theory and Behavioral Economics," NBER, May 2006, <http://www.nber.org/papers/w12227>.

<sup>114</sup> Susan Dynarski and Mark Wiederspan, "Student Aid Simplification: Looking Back and Looking Ahead," NBER, February 2012, <http://www.nber.org/papers/w17834>.

add capacity, leverage counselor resources, and can bring useful perspectives and experiences similar to those of the students they mentor.

Economist Christopher Avery found positive impacts from an intervention that targeted high-achieving, low-income students in the Boston and New York areas to receive 10 hours of free, one-on-one college advising from a professional counselor. Of 107 students identified for the study, 52 were randomly selected for the treatment group. Avery found that students who were offered counseling were 7.9 percentage points more likely to enroll in one of the most competitive institutions; though because of the small sample size, this finding was not statistically significant. Many students included in the study lacked adequate college advising at their high schools; just less than one-quarter of students cited their guidance counselors as their most important source of information about college admissions. Avery did find significant impacts on the number of applications submitted to match schools: while students in the study had high ambitions, they were generally unaware of selective colleges outside of MIT and Ivy-League Institutions. Students who were offered counseling submitted 50 percent more applications to selective institutions (other than Ivy League) and were more likely to enroll as a result.<sup>115</sup>

The Posse Foundation, launched in 1989, selects disadvantaged, high-achieving students to participate in a “posse” of about 10 student scholars who are each awarded full scholarships to a four-year college; during senior year, these students participate in college workshops and mentoring, and 90 percent graduate college. As of May 2013, there were more than 2,200 Posse alumni. The Posse model includes many different interventions, and some of its greatest success is reflected in SAT scores. Posse students have an average SAT score of 1050, and attend colleges with an average SAT score of 1350.<sup>116</sup>

Many successful programs around the country rely on near-peer mentors and advisors – both professional recent colleges graduates and paraprofessional students – to not only provide direct advising and college prep, but also to help create a college-going culture in low-income high schools. Employing college students or recent college graduates as mentors and advisors is not only a cost-effective way to increase access to college advising, but it also means advisors are more relatable and may have more shared experiences with their mentees.

The National College Advising Corps (NCAC), for example, trains recent college graduates to be full-time high school counselors to help students register for exams and apply to college – nearly two-thirds of NCAC advisors were Pell-eligible themselves, more than half were the first in their family to attend college, and 69 percent are people of color. NCAC currently serves 127,500 students in 425 high schools in 14 states, with reports of success from around the country. NCAC’s evaluation team, a group of researchers at Stanford University, found that

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<sup>115</sup> Christopher Avery, “The Effects of College Counseling on High-Ability, Low-Income Students: Results of a Pilot Study with a Randomized Control Trial.” National Bureau of Economic Research Working Paper no 16359, 2009.

<sup>116</sup> <http://www.possefoundation.org/quick-facts>

high school seniors at NCAC schools who meet with a Corps advisor are 40 percent more likely to take the ACT or SAT, 98 percent more likely to take college workshops, and 67 percent more likely to be accepted to college. The evaluation team has also begun random controlled trials to determine the causal impact of CAC. By comparing 36 CAC partner schools to 76 similar high schools in the state of Texas, the evaluation team could isolate the impact of CAC by controlling for other factors that affect college outcomes. Early results from Texas show that NCAC increases college attendance 1.8 percentage points.<sup>117</sup>

College Spring, a California-based program focused on SAT prep, uses near-peer mentors to provide tutoring and help students with college applications. Since 2008, CollegeSpring has helped more than 4,400 students in the Bay Area and Los Angeles improve their SAT scores an average of 180 points; three-quarters of CollegeSpring students improve their SAT scores by over 100 points, and more than a third of students improve their scores by over 200 points. CollegeSpring expects to serve 9,300 students during the next three years.<sup>118</sup>

College Possible – an AmeriCorps organization – trains recent college graduates to provide free college advising services to low-income students. Founded in Minnesota in 2000, College Possible now serves 12,000 students annually on 200 college campuses and in 35 high schools across eleven school districts in four states, with plans to reach 20,000 low-income students in 10 states by 2020.<sup>119</sup> 98 percent of College Possible students have earned college admission and nearly 80 percent of college enrollees have already graduated or are actively working toward their degree.<sup>120</sup> A 2013 study by economist Christopher Avery found what may be the first statistically significant positive impacts of a non-profit college counseling program. Avery examined a randomized control trial of 238 high-school juniors and seniors in the Twin Cities, of which 134 were randomly selected to participate in College Possible. Avery found that College Possible had a significant and positive impact on four-year enrollment, as participants were more than 15 percentage points more likely to enroll in a four-year college right after high-school.<sup>121</sup>

Early results from MDRC’s College Match program in Chicago – which includes workshops and college counseling from trained, near-peer advisors for low-income, high achieving high school

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<sup>117</sup> National College Advising Corps, “2010-2011 Evaluation Report,” [http://www.socialimpactexchange.org/sites/www.socialimpactexchange.org/files/Evaluation%20Report%2010-11%20\(04%2025%2012\)%20FINAL.pdf](http://www.socialimpactexchange.org/sites/www.socialimpactexchange.org/files/Evaluation%20Report%2010-11%20(04%2025%2012)%20FINAL.pdf)

<sup>118</sup> CollegeSpring, “Organizational Overview, Spring 2013,” [http://collegespring.org/Spring\\_2013\\_Overview.pdf](http://collegespring.org/Spring_2013_Overview.pdf).

<sup>119</sup> Social Impact Exchange, <http://www.socialimpactexchange.org/organization/college-possible;> <http://www.collegepossible.org/sites>.

<sup>120</sup> Christopher Avery, “Comparative Historical Analysis Admission Possible 2007-2009,” Harvard Kennedy School, June 2011, [http://www.collegepossible.org/uploads/harvard\\_comparative\\_historical\\_analysis\\_results\\_-\\_june\\_201.pdf](http://www.collegepossible.org/uploads/harvard_comparative_historical_analysis_results_-_june_201.pdf).

<sup>121</sup> Christopher Avery, “Evaluation of the College Possible Program: Results From a Randomized Controlled Trial,” NBER Working Paper 19562, October 2013, <http://www.nber.org/papers/w19562>.

students – indicate that workshops and college counseling from recent college graduates increases college aspirations for low-income, high achieving students. 35 percent of students targeted by College Match planned to enroll at colleges in the “most/highly/very selective” categories compared with 23-28 percent of similar students in earlier years; similarly, students targeted by College Match were more likely to have plans after high school, compared to earlier cohorts.<sup>122</sup>

Economists Scott Carrell and Bruce Sacerdote have studied a college mentor program where Dartmouth students help New Hampshire high school seniors apply to colleges and file the FAFSA. The mentorship is targeted to marginal students late in their senior year (around January) who have expressed an interest in college but have not taken steps to enroll. These students are offered a mentorship, through which they are matched with a Dartmouth student who meets with them once per week, during school, to work on college applications and the FAFSA until all steps are completed. Though Carrell and Sacerdote found that mentorship did not impact college outcomes for men, they found large, positive impacts for women – women who were offered mentorship were 15 percentage points more likely to attend college and persist. Further research is needed to determine the source of the gender gap.<sup>123</sup>

Research shows that FAFSA application assistance alone can increase college enrollment and persistence and lead to larger financial aid packages. Economists Eric Bettinger, Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu evaluated the impact of providing personalized information and FAFSA assistance to low- and moderate-income tax filers at H&R Block – filers included parents of high school seniors as well as other adults. They randomly selected one group of tax filers to receive an estimate of their federal financial aid award if they or their dependent were to attend college, as well as information about postsecondary options; a second group also received personalized financial aid information but they also received assistance filling out the FAFSA application.

For many students, the barriers to higher education are significant and cannot be surmounted with information alone. This may especially be the case for the average low-income student. Bettinger et al found that providing financial aid information alone had no significant impact on college outcomes, but providing financial aid information *in addition to* FAFSA assistance led to higher FAFSA application rates, bigger financial aid awards, and greater college enrollment and persistence.<sup>124</sup> Relative to the control group, the FAFSA application rate increased 40 percent and college enrollment increased 29 percent. High school seniors who received FAFSA assistance were 8 percentage points more likely to have completed two years of college, going

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<sup>122</sup> Jay Sherwin, “Make Me a Match: Helping Low-Income and First-Generation Students Make Good College Choices,” MDRC Policy Brief, April 2012, [http://www.mdrc.org/sites/default/files/policybrief\\_24.pdf](http://www.mdrc.org/sites/default/files/policybrief_24.pdf).

<sup>123</sup> Carrell, S.E. and Sacerdote, B. 2013. “Late Interventions Matter Too: The Case of College Coaching New Hampshire,” NBER Working Paper no. 19031.

<sup>124</sup> Eric Bettinger, Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu, “The Role of Application Assistance and Information,” *Quarterly Journal of Economics*, April 2012.

from 28 to 36 percent, during the first three years following the experiment. Moreover, the H&R Block FAFSA intervention cost less than \$100 per person – including the costs of training, software installation, and the small incentives that were provided to pilot participants.

## Commitments to Equalize College Advising and Test Preparation

In response to the White House’s call to address issues of college preparation and success, a number of universities, philanthropic organizations, and businesses are making commitments designed to provide college advising and SAT/ACT test preparation to low-income and other disadvantaged students. Universities are making commitments such as:

- Offering free resources from to public high school counselors
- Creating and expanding summer college preparation programs for low-income students
- Expanding participation in the National College Advising Corps, a program that sends recent undergraduates into high schools to advise low-income and disadvantaged students
- Creating new relationships with high schools to provide advising about college and financial aid to low-income students
- Expanding opportunities for current colleges students to work in high schools and middle schools to help advise students on college options
- Making available high-quality SAT/ACT prep to more students.

### Organizations making commitments to reduce inequalities in college advising include:

Barnard	iMentor	University of California System
American Council on Education	John M. Belk Endowment	University of California, Berkeley
Amherst College	Khan Academy	University of California, Merced
Bates College	Kresge Foundation	University of Delaware
Carnegie Mellon	Mount Holyoke	University of Houston
College of the Holy Cross	National Association for College Admission Counseling (NACAC)	University of Missouri
College Possible	National College Access Network	University of North Carolina
College Spring	National College Advising Corps	University of Wisconsin-Madison
College Spring	National Council for Community and Education Partnerships (NCCEP)	University System of Maryland
College Track	National Education Foundation	Virginia Community College System
Davidson College	North Carolina State University	Washington University in St. Louis
Franklin and Marshall	Northwestern University	West Virginia Higher Education Policy Commission
George Washington University	OneGoal	
Hobart and William Smith Colleges	Princeton University	

## IV. Strengthening Remediation to Support Student Success

When students enter college underprepared for core subjects such as math and English they are far less likely to succeed. Research has shown that the remedial courses designed to “catch” these students are actually more likely to hold them back. Too many students in developmental courses never move onto credit-bearing work, therefore wasting time and resources of students and institutions with no bearing on a student’s goals or success. States, postsecondary systems, and colleges are responding to this challenge by reassessing and redesigning their remediation strategies. This chapter outlines promising new results where states have aligned their K-12 and higher education curricula and where institutions have reformed how they assess remediation needs and deliver remedial content. With further development, testing, and evaluation, we can expand the evidence base for what works while we simultaneously scale up those programs that have already demonstrated success.

### Scope of the Challenge

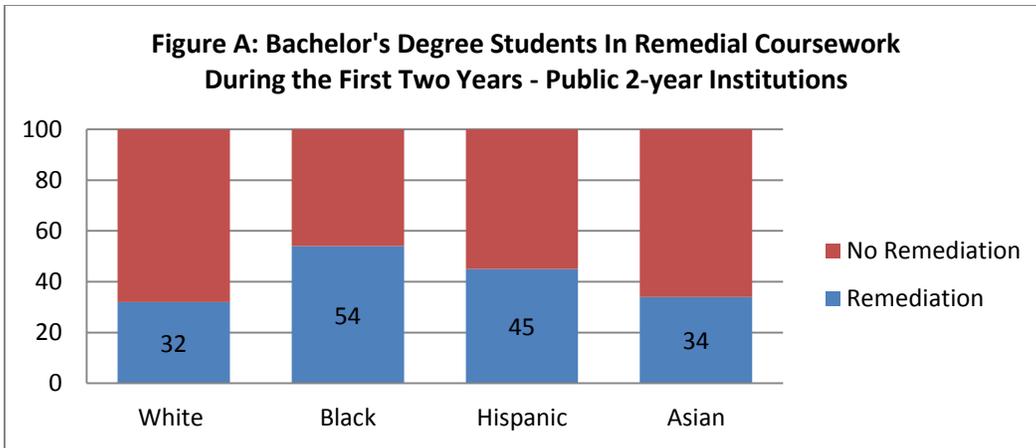
Far too many students are entering college unprepared to succeed; this is true across institutions types as well as student demographics. Students of every background are struggling to succeed. A national survey of first-year college students revealed the following:

- At public two-year institutions, 40 percent of students took a remedial course;
- At public four-year institutions, 38 percent took a remedial course;
- At private four-year institutions, 24 percent took a remedial course; and
- At for-profit four-year institutions, 23 percent took a remedial course.<sup>125</sup>

While all socioeconomic and racial groups stand to benefit from improved approaches to remediation, low-income and minority students stand to improve the most given their disproportionate representation in remedial courses. At public two-year institutions, 32.4 percent of white students, 34.2 percent of Asian students, 44.5 percent of Hispanic students, and 53.5 percent of Black students enrolled in remedial coursework during the first two years (Figure A).

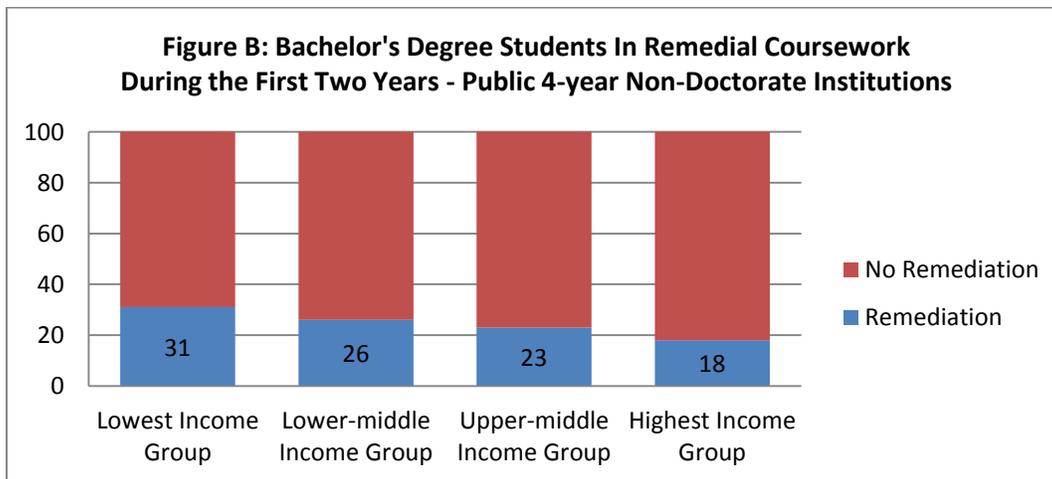
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<sup>125</sup> “National Postsecondary Student Aid Study 2011-12,” National Center for Education Statistics, 2012. Data cites non-doctoral institutions when four years.



Source: U.S. Department of Education, National Center for Education Statistics, 2011-12 National Postsecondary Student Aid Study (NPSAS:12).

The need for remediation is also a constant across income levels. While students from wealthier families are less likely to require remediation, students from all income groups are still placing into remedial courses in substantial numbers. For first time Bachelor's degree students at public non-doctorate 4-year institutions, one in three students from the lowest income group and one in five students from the highest income group are taking at least one remedial course (Figure B). There is only one institutional level (private, nonprofit non-doctorate 4-year) where less than ten percent of the top income group is in remediation.



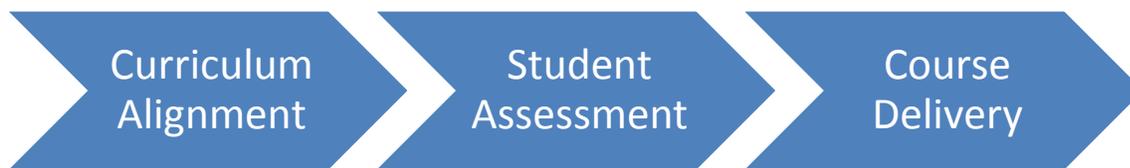
Source: U.S. Department of Education, National Center for Education Statistics, 2011-12 National Postsecondary Student Aid Study (NPSAS:12).

## A Path Forward

Remedial courses often act as gatekeepers to higher education, and in their current form they let too few students through. Only one in four students who enter a remedial course in a community college will earn a degree or certificate at that institution.<sup>126</sup> In fact, a large majority of students never even enroll in or complete the remedial courses themselves. Even when they participate in modest amounts of remediation, these students tend to fare no better in later coursework than similarly underprepared peers who did not take remedial coursework. Students are investing time and money into remediation that does not lead to better outcomes. Neither our students nor our nation can afford this status quo.

In order to reach the President’s postsecondary completion goal, we need to increase efforts to keep students from falling out of the system. This includes better alignment between high schools and colleges to reduce the overall need for remediation, a better way to assess students entering postsecondary programs, and improved design and delivery of remediation material that quickly moves students back on track to complete their education.

**Figure C: Addressing Remediation at Three Stages of Student Engagement**



We want to leverage the resources and work of the federal government, states, institutions, philanthropists, technologists, and colleges, including community and technical colleges, to support and accelerate student success, and help sustain it over the course of the student’s academic career. A number of states and institutions are already testing and validating new approaches that customize remediation to students’ academic and career interests and identify specific skills gaps without sidelining students into a costly sequence of ineffective courses.

By unifying under a shared national objective to reform the policies, practices, and delivery of remediation, we can break down a critical barrier to reaching the President’s postsecondary completion goal and eventually help more students and families realize their career aspirations.

## Promising Strategies – The Growing Evidence Base for What Works

There is growing momentum to reform remediation at the state and institutional levels. In some cases, reform means reducing the number of students entering colleges and universities who need remediation or more accurately assessing students’ capacity for success in regular

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<sup>126</sup> Thomas Bailey, “Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College,” *New Directions for Community Colleges*, Spring 2009.

coursework. It also means designing remediation to engage students, accelerate their progress, and quickly move them into credit-bearing coursework in their program of study. At each stage of the process, states, institutions, researchers, and philanthropies all have a role to play in drawing on promising reforms to engage, accelerate, and help students bridge this transition.

## Reducing the Need for Remediation through Curricular Alignment

A number of states have begun to analyze the alignment between their K-12 and postsecondary systems to identify whether students are on track to enter college-level work before they leave high school. By diagnosing these skills gaps early, secondary schools can design supplemental interventions that get students on track before they place into remedial coursework.

California is one state pursuing this approach. Assessments are now aligned between California's state universities, community colleges, and high schools. Early evidence shows that students who participate in this Early Assessment Program and then enroll at a California State University are 6.1 percent less likely to require remediation in English and 4.1 percent less likely to require remediation in math.<sup>127</sup>

## Redesigning Assessments

In too many cases, students are assigned to remedial courses they will never complete while they would have been more successful in traditional courses. Some reform-minded institutions have approached this challenge by exploring alternative assessments that rely on different data inputs or provide more tailored recommendations.

California State University – Long Beach is engaged in a pilot project that places freshmen in college math and English classes based on their grades in high school instead of their scores on a standardized placement test. After implementation of the Promise Pathways program, the percentage of Long Beach Unified freshmen who were placed in a college English course instead of a remedial course quadrupled from 14 to 56 percent, and the number of students who then passed that course increased from about 70 students to 350. Placement into non-remedial math tripled from 9 to 31 percent, and the number of students who passed doubled from slightly under 50 to slightly more than 100.<sup>128</sup>

Tennessee Colleges of Applied Technology is using ACT's WorkKeys as an alternative method to identify students' remediation needs. Because WorkKeys evaluates students based on "real world" skills drawn from a range of fields such as applied mathematics and business writing, the

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<sup>127</sup> "Postsecondary preparation and remediation: Examining the effect of the early assessment program at California State University," *Journal of Policy Analysis and Management*, Fall 2010.

<sup>128</sup> "LBSP 5-Year Progress Report: A Breakthrough in Student Achievement," *Long Beach College Promise*, March 2013.

tests provide students entering from the workforce with an opportunity to demonstrate their aptitude in a familiar format.

The Community College Research Center (CCRC) at Columbia University's Teachers College has compiled a number of promising case studies in community college assessment practices in Georgia, New Jersey, North Carolina, Oregon, Texas, Virginia, and Wisconsin. These practices can be as simple as helping students review before taking their placement test. For example, one institution that implemented a review course for its placement exams shifted 35 percent more students into higher level math courses and 60 percent more students into higher level English.<sup>129</sup>

### Improving Remediation Delivery

While reducing the need for remedial education is critical, students will continue to enter postsecondary institutions in need of additional academic support. When additional preparation is necessary, students need remedial coursework that engages their curiosity and is relevant to their academic and occupational interests. Some of the most promising reforms keep students engaged by providing them with practical examples of how theory is working in the real world, and pushing students to higher levels of achievement by enrolling them simultaneously in the remedial and standard sections of the same subject (“the Co-Requisite Course Model”).

The Carnegie Foundation for the Advancement of Teaching has focused on reforming math remediation, where more students have a need for remediation than in any other subject.<sup>130</sup> The Statway and Quantway programs are raising the extremely low completion rates in remedial math by designing a curriculum that is based around math skills relevant for students outside of the math and science fields. Currently, over 100 campuses – including the Texas Community College System – are engaged in Carnegie's efforts to implement this approach, and the initial results are promising. Over half of the students in these pilot programs completed the full developmental Pathway in one year with a C or higher in their final term. By comparison, only 5.9 percent of their peers completed non-Statway remedial math courses in the same timeframe.<sup>131</sup>

The Community College of Baltimore County has taken a different approach. Students who narrowly failed the writing placement test for English 101 are dual-enrolled in both English 101

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<sup>129</sup> Michelle Hodara, Shanna Jaggars, and Melinda Karp, “Improving Developmental Education Assessment and Placement: Lessons From Community Colleges Across the Country,” *Community College Research Center*, November 2012.

<sup>130</sup> “National Postsecondary Student Aid Study 2011-12,” National Center for Education Statistics, 2012.

<sup>131</sup> Scott Strother, James Van Campen, and Alicia Grunow, “Community College Pathways: 2011-2012 Descriptive Report,” *Carnegie Foundation for the Advancement of Teaching*, March 2013.

and a remedial companion course. Through this co-requisite course model, known as the *Accelerated Learning Program*, the remedial course is entirely structured around helping students succeed in English 101. Students remain in the classroom with higher performing students and immediately begin making progress towards their degree. Students in the Accelerated Learning Program are two times more likely to complete English 101 than peers in traditional remediation, and they do so in half the time.<sup>132</sup>

Additionally, the City University of New York is engaged in a similarly themed and even more comprehensive approach to remediation reform through its Accelerated Study in Associates' Programs. Dubbed "ASAP," this program leverages a series of strategies (e.g., learning communities, enhanced advising systems, and financial assistance) to accelerate completion of remedial courses and improve academic progress in the first year of college. The program launched in 2007, and a two-year evaluation by MDRC recently found that participants earned 25 percent more credits over two years, a 5.7 percent higher two-year graduation rate, and 8-10 percent higher semester-to-semester retention.<sup>133</sup>

## Commitments to Strengthen Remediation

In response to the White House's call to address issues of college preparation and success, a number of universities, philanthropic organizations, and businesses are making commitments designed to ensure successful outcomes for students academically underprepared for college.

Postsecondary institutions and systems are commitments such as:

- *More Accurately Assessing Remediation Needs* by reducing the overreliance on college placement tests for determining placement in first-year courses, and by relying instead on other factors such as high-school transcripts, scores on high-school exams, completion of summer-bridge and dual enrollment programs, and competency-based assessments.
- *Aligning Remediation to Programs of Study* by encouraging students to enroll in programs, not individual classes, to target remediation to needed coursework.
- *Improving Course Content* by redesigning the traditional content and timing of remedial courses to accelerate student progress, including: placing students directly into college-level work with additional support, or approaches like fast-track and modularized courses.

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<sup>132</sup> Sung-Woo Cho, et. al, "New Evidence of Success for Community College Remedial English Students: Tracking the Outcomes of Students in the Accelerated Learning Program," *Community College Research Center*, December 2012.

<sup>133</sup> Susan Scrivener and Michael Weiss, "Two-Year Results from an Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students," *mdrc*, December 2013.

- *Increasing the Relevancy of Remediation Instruction* by developing contextualized learning opportunities to help underprepared students progress more quickly while engaging directly with their occupational or college-level course work.
- *Providing Better Remediation Support* by providing enhanced support services for students in developmental courses, such as case management, advising and tutoring.

Organizations are making commitments such as:

- Developing easy-to-use, accessible web tools that students and teachers can use to assess needs for remediation and making these tools available to high schools and colleges.
- Providing technical assistance or other support services, to institutions engaged in implementing remediation reforms

**Organizations and states making commitments to strengthen remediation include:**

Colorado Community College System	Indiana	Ohio
Achieving the Dream	Jobs for the Future	Oklahoma
American Association of Community Colleges	Joyce Foundation	Oregon
Arkansas	Kentucky	Patrick Henry Community College
California State System	Kentucky Council on Postsecondary Education	Pearson
Carnegie Foundation for the Advancement of Teaching	Kingsborough Community College- CUNY	Shawnee State University
Colorado	Kresge Foundation	Starfish Retention Solutions
Community College of Baltimore County	Lake Washington Institute of Technology	Student Success Initiatives at University of Texas
Complete College America	Louisiana State University	State University of New York
Connecticut	Maryland	Tacoma Community College
Council for Opportunity in Education	Massachusetts	Tennessee
Cuyahoga Community College	Miami Dade College	Texas Association of Community Colleges
District of Columbia	Minnesota	United Negro College Fund
Education Commission of the States	Missouri	University of California System
El Paso Community College	Montana	University of Maryland, Baltimore County
Harper College	Montgomery County Community College	Utah
Hawaii	National Association for Equal Opportunity in Education	Virginia Community College System
Hewlett Foundation	National College Access Network	West Virginia
Hispanic Association of Colleges and Universities	Navajo Technical University	Wisconsin
Idaho	Nevada	Wyoming
Illinois	New Mathways Project	Zane State College
Illinois Community College Board	Northern Virginia Community College	