THE HAMILTON PROJECT

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Informing Students about Their College Options: A Proposal for Broadening the Expanding College Opportunities Project

Caroline M. Hoxby and Sarah Turner

MISSION STATEMENT

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth.

We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that "prudent aids and encouragements on the part of government" are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.

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JUNE 2013

This discussion paper is a proposal from the authors. As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The authors are invited to express their own ideas in discussion papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This discussion paper is offered in that spirit.

BROOKINGS

Abstract

Most high-achieving, low-income students do not even apply to selective colleges despite being highly qualified for admission and success at these institutions. Because they do not apply, these students forgo the generous academic resources, increased financial aid, and better collegiate and career opportunities that selective schools offer. To increase opportunities and improve outcomes for these students, we propose building on the success of an innovative intervention, the Expanding College Opportunities (ECO) Project. At a relatively low cost of about $6 per student contacted, ECO sent the following to high-achieving, low-income students: targeted and personalized information on their college options, information on the process for applying, and details of the financial information relevant to their situations. The intervention had a profound effect on their college application behavior, leading to a substantial increase in their propensity to apply to more-selective colleges commensurate with their academic achievements. Not only did students apply to more-selective schools, but they were accepted and matriculated at such schools in greater numbers, and early evidence points to their academic success in these programs. The promising results of this low-cost program suggest that ECO should be expanded. This paper proposes steps to expand and improve ECO to reach more low-income, high-achieving students across the country by partnering with respected third-party organizations such as the College Board and ACT. ECO can also serve as a model for designing and applying this type of intervention to other populations of students. The success of the ECO Project highlights the importance of researchers being able to access relevant government data to design targeted and effective programs and policies.

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Chapter 1: Introduction

The vast majority of high-achieving students from disadvantaged backgrounds never apply to selective colleges and universities, despite having qualifications that make them likely to be admitted and to succeed at these institutions (Avery and Hoxby 2012). This represents a troubling loss of opportunity both for the students, who may forgo a chance to transform their lives, and for society at large, because persistent low rates of college attainment among students from disadvantaged backgrounds exacerbate disparities in well-being and diminish the upward economic mobility that America is known for.

Just as troubling, the evidence suggests that these high-achieving students miss out on improved college opportunities in part because they are unaware of these opportunities or are deterred from exploring them for relatively trivial reasons. In surveys, low-income, high-achieving students express eagerness to attend the best colleges to which they can gain admission and that they can afford, and their high grades and top test scores would make them excellent candidates at even the most-selective schools. Instead of applying to selective schools, however, they often attend nonselective institutions with far fewer instructional resources, much less demanding curricula, and much lower graduation rates. This contributes to the disparity of educational outcomes between low-income, high-achieving students and their higher-income counterparts.

The outcomes for these students can be dramatically improved, however, through low-cost, high-return informational interventions. In a recent experimental program—the Expanding College Opportunities (ECO) Project—we tested whether the provision of targeted, customized information about the college choice and college application process would help improve the choices of low-income, high-achieving students.[1] This intervention provided guidance on how to apply to colleges, on what the student would actually pay to attend various colleges (the net cost as opposed to the sticker price), and on colleges' widely varying graduation rates and instructional resources; it also provided no-paperwork fee waivers for applying to about 200 selective colleges.[2] A key feature of the intervention is that each student's materials are customized by analyzing and combining a vast array of data on students, their high schools, their local colleges, and their likely net costs, so that each student receives information relevant to her circumstances.

To determine the effectiveness of the ECO intervention, we implemented a randomized control trial—the gold standard of research methods, much like efficacy tests of medical interventions—to test whether the intervention affected the choices and outcomes of students. We gathered information on decision-making, applications, admissions, financial aid offers, enrollment, and in-college performance using a combination of surveys and administrative data from the National Student Clearinghouse (NSC). We tested whether the intervention caused students to apply to and enroll in institutions that have greater instructional resources, higher graduation rates, and curricula more oriented to their preparation.

The outcomes for these students can be dramatically improved through low-cost, high-return informational interventions.

The results of the ECO experiment were striking. Armed with the information and no-paperwork fee waivers in the ECO intervention, low-income high achievers applied to, were admitted to, and matriculated at schools with greater resources, higher graduation rates, and curricula more oriented to their preparation. Moreover, they are paying less to enroll in such schools than they would have paid at less-selective schools. This is because, for high achievers, net costs fall as college selectivity rises because of more-generous financial aid at more-selective institutions.

Building on the lessons of our successful experiment, we propose five steps that will expand the program to serve more students and to increase the program's effectiveness.

1. Establish or partner with credible third parties for implementing and extending the ECO Project. The success of the ECO Project necessitates maintaining and improving the complex and data-intensive targeting and customization systems that underlie the intervention; establishing and sustaining credibility of the ECO intervention as a trusted source of unbiased information; and providing a clearinghouse for data, research, and dissemination of information that meets the needs of students and their families, colleges and universities, and other partners and data providers, such as government agencies.

Although ECO was designed to be easily scalable, sustaining and improving the quality of the program still requires expert oversight, and the means to conduct continual evaluation and improvement and to manage day-to-day operations. Therefore, the program would benefit from partnerships with credible and trusted institutions such as the College Board or ACT. We also found in our research that students and parents were more open to the information we sent if they believed it was objective and that it was not trying to sell them on any specific school. As reputable third parties in the college process, the College Board and ACT would be seen as credible and neutral sources of information. By establishing such partnerships, ECO and its researchers would maintain the capacity to address the analytic and data challenges that arise with a project of this size and to continue research toward improving the effectiveness of the intervention.

2. Expand the ECO interventions to serve more high-achieving, low-income students through partnerships with the College Board and ACT. The original ECO intervention targeted only a fraction of potentially eligible high-achieving, low-income students. To increase the number served, we propose extending our relationships with organizations such as the College Board and ACT. Indeed, the College Board has already committed to move forward with a broader implementation of the ECO intervention for the 2013–14 academic year. However, this expansion still leaves out roughly half of all students that take college admissions tests nationwide—particularly those who take the ACT—and also leaves out a large share of colleges and universities that rely on applications from those students. Including high-achieving ACT students in the pool of students receiving ECO materials would significantly extend the reach of the program.

3. Improve targeting and effectiveness of the intervention by providing ECO researchers with better access to data. A key factor in the success of the ECO intervention is the ability to target individual students with accurate, customized, and relevant information. This capacity depends critically on access to rich data to predict and target high-achieving, low-income students using a variety of indicators. This ability is already being eroded by changes in census data: the Census Bureau no longer gathers data on incomes, housing values, occupations, or adults' education. This is a major loss of information at the fine level of geography we need to estimate students' family income accurately. The federal government, however, maintains a variety of administrative databases that could dramatically improve the efficacy of the targeting, and thus the effectiveness of the program. Valuable data include information on the geographic concentration of student aid recipients within the U.S. Department of Education, and/or information on family income from other sources. By providing a mechanism to give access to ECO researchers and administrators, these data-sharing efforts would help ensure that more low-income students receive the valuable help they need.

4. Apply similar interventions to different students and outcomes. While the ECO interventions tested thus far have focused on the relatively narrow problem of helping high achievers understand their full array of college-going opportunities, the basic structure of the intervention would help improve student outcomes in a variety of dimensions. For example, targeting students earlier in their high school careers could help position students to apply to more-selective colleges by providing customized guidance on AP courses, subject-area tests, and other college-preparation steps. A new host of challenges face these students once they enroll in college, such as knowing what courses to take, how much time to devote to employment outside of school, how much to borrow, and how to manage finances during school. There are opportunities to extend the basic insights of the ECO model to help targeted students succeed by providing in-college guidance related to financial management and curricular choices. Similarly, there are also opportunities to take the lessons learned from these interventions and apply them to other populations of students beyond low-income high achievers, who also would likely benefit from customized information on their postsecondary options.

5. Support rigorous research on information-based interventions. We propose that the Institute of Education Sciences (IES), the research arm of the U.S. Department of Education, not only provide its usual, competitive grant support for research on interventions to improve college choice, but, more importantly, that it work with researchers to ensure that they gain access to federal data. This would be something of a change for the IES. Currently, it makes grants to researchers only after they have succeeded in obtaining data access on their own. Although IES often encourages other divisions of the U.S. Department of Education to cooperate with researchers, it has no power to ensure that the other divisions actually do so.

Chapter 2: The Challenge

Each year, a surprisingly large number of high-achieving students from low-income backgrounds—probably the vast majority of such students—do not apply to a selective college or university. In sharp contrast, high-achieving students from upper-income families are overwhelmingly likely to apply to such schools (Avery and Hoxby 2012).[3]

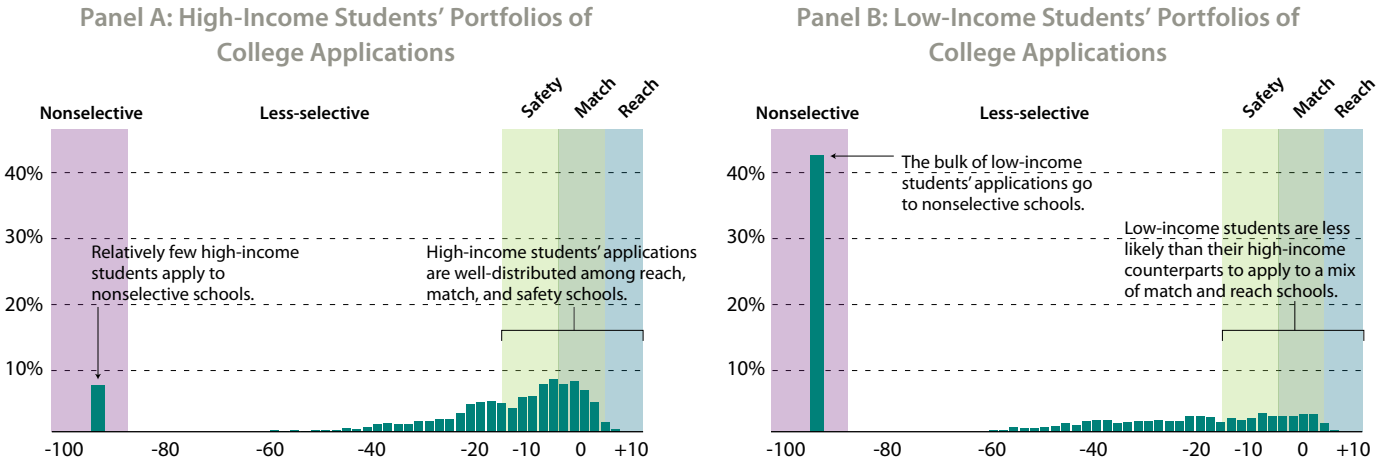
Figure 1 illustrates the gap between high-income high achievers' and low-income high achievers' application behaviors. As seen in panel A, high-achieving, high-income students tend to apply to colleges and universities where their test scores closely match the test scores of typical students at those institutions. Relatively few of these students—less than 10 percent—apply to nonselective schools, while, as seen in panel B, high-achieving, low-income students mostly apply to institutions that are less selective. Slightly more than half of applications from these students are to nonselective schools, and a large share are to less-selective schools. Only a small fraction applies to schools where their achievement is similar to that of their fellow students.

This gap, and the failure of high-achieving, low-income students to apply to selective colleges, is puzzling for two main reasons. First, these students are well qualified to attend top institutions—their test scores and grades place them in the top 4 percent of students nationwide. In fact, there are more than five times as many students with the capacity to succeed at selective institutions than apply to these institutions (see Avery and Hoxby 2012). And, among the few who do attend top colleges, the data suggest that low-income, high-achieving students thrive at colleges where their preparation is similar to that of their peers, many of whom are from middle- or high-income families (Avery et al. 2006; Avery and Turner 2011; Avery and Hoxby 2012; Roderick et al. 2009).

Second, because their family incomes place them in the bottom third of the population (with incomes less than about $41,000 a year), low-income high achievers would—counterintuitively—nearly always pay less to attend these selective institutions than the institutions that most of them actually do attend, despite the fact that these selective institutions offer students much richer instructional, extracurricular, and other resources. Avery and Hoxby (2012) demonstrate that low-income high achievers routinely pay more to attend nonselective schools with very modest instructional resources than they would pay to attend a state flagship or a very selective private institution. This is shown in figure 2, which includes sticker prices (comprehensive cost, including room and board), net

FIGURE 1.

Application Behavior of High-Achieving Students



Source: Avery and Hoxby (2012).

costs, and instructional expenditures per student across the spectrum of college selectivity. It is striking that resources per student are greatest at the colleges with the lowest net cost for low-income students.

A MISSED OPPORTUNITY

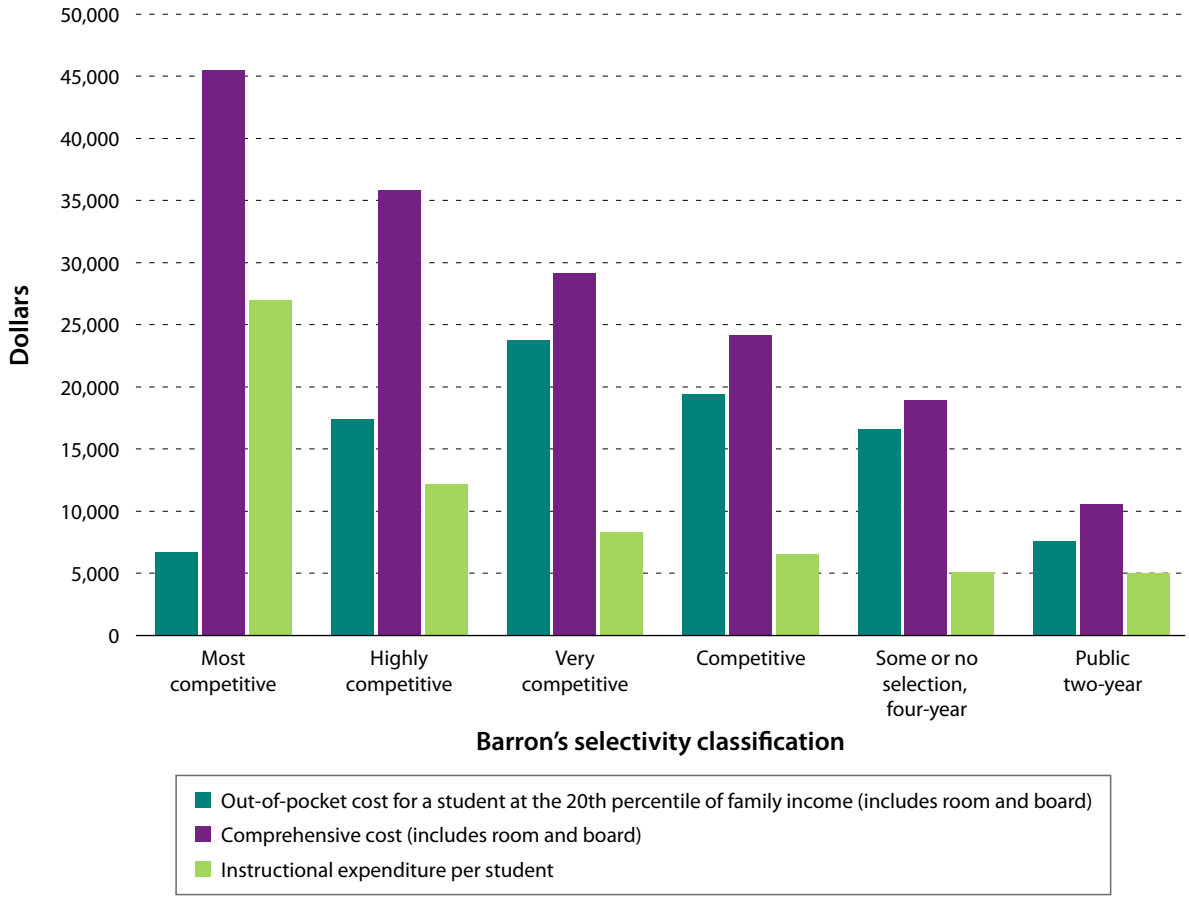
The gap in the application behavior of high- and low-income students is more than just a puzzle—it also represents a tremendous missed opportunity. First, a low-income high achiever who *does* apply to a selective institution attains outcomes that are extremely similar to those of high-income students with the same preparation: on-time course completion, high on-time graduation rates, negligible rates of loan default, and so on.[4] This similarity likely occurs because the low-income high achievers are in an environment where studying, individualized advising, generous financial aid, and excellent college-career links are the norm. Interestingly, the low-income high achievers who enroll in nonselective institutions have outcomes that are not nearly as good, despite the fact that their preparation is much stronger than that of most of their classmates.

Second, high-achieving, low-income students are the natural role models for their communities. If they do not have the opportunities to expand on their high achievement at the postsecondary level with life-transforming college experiences, then the message to the vast majority of low-income students is that working hard in primary and secondary school is pointless because high achievers end up with outcomes quite similar to those of mediocre achievers. High-achieving, low-income students are potentially the greatest future college ambassadors to low-income students. Their authentic experience of a life transformed can make them powerful advocates and policy leaders who understand the issues that plague low-income students who are striving to obtain a world-class education.

Third, high-achieving, low-income students give us a unique opportunity to learn what works to improve college outcomes for low-income students. If we cannot improve college outcomes for students who are well prepared, we are unlikely to figure out what interventions would improve outcomes for students who face the additional burden of poor secondary school preparation.

FIGURE 2.

Comprehensive Costs, Net Costs, and Instructional Expenditures per Student



Finally, low-income high achievers are a missed opportunity because policies are already in place that are intended to make a great education available to them. Selective colleges and universities offer those students such generous financial aid that it is *less* expensive for them to attend highly selective colleges than it would be for them to attend the nonselective institutions that they would normally attend. Moreover, local, state, and federal governments are already willing to invest substantially in these students. For instance, most states offer generous merit aid to high achievers who attend public colleges, and the more-selective public institutions nearly always receive greater state funding per student than the less-selective ones. Federal Pell grants currently have a maximum of $5,550, a substantial increase over 2006's $4,050 level. And, of course, low-income high achievers do not attain their scores and grades on their own: they usually have benefitted from public school spending equal to $150,000 or more between kindergarten and twelfth grade.

In other words, this is not a situation in which the nation needs to be convinced that educational investments in high-achieving, low-income students are worthwhile. Rather, it is a situation in which students appear to be failing to take advantage of the full range of opportunities available to them.

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WHAT'S BEHIND THE GAP AND HOW CAN IT BE ADDRESSED?

One possible explanation for low-income high achievers' behavior is that they do not fully appreciate the vast differences between sticker prices and net costs. Such an information gap is plausible because net costs are far from transparent until a student has been admitted and received a financial aid offer. A related explanation is that students do not know how much variation there is among colleges in resources and outcomes (such as the probability of graduating on time).

Avery and Hoxby (2012) find that the small share of low-income high achievers whose application behavior resembles that of high-income high achievers (the "achievement-typical students") is extremely concentrated geographically. About 70 percent come from only 15 of the 316 metropolitan areas in the United States, and—within those metropolitan areas—many come from a small number of selective and magnet high schools. In contrast, the low-income high achievers who apply only to nonselective or barely selective schools (the "income-typical students") are widely dispersed geographically. They are usually one of the few high achievers in their high school. Thus, traditional college outreach efforts—such as admissions staff traveling to high schools and inviting students to campus—are not cost-effective strategies for individual colleges.

Avery and Hoxby (2012) also demonstrate that the probability that an income-typical student has a high school teacher or counselor who attended a very selective college is only about 1 percent. Moreover, high-achieving students make up only about 1 percent of the student roll served by a counselor in such high schools.

In short, no one should be surprised that income-typical students, who make up the vast majority of low-income high achievers, lack expert guidance about admissions and financial aid at very selective colleges. They are very unlikely to encounter admissions staff from the colleges and their counselors are unlikely to have expertise. This is no one's fault: it is a natural consequence of where the income-typical students live and attend high school.

Indeed, in recent work building on the evidence reviewed above, we examined the extent to which low-income, high-achieving students were informed about college admissions. Our conclusions can be summarized as follows:

1. Low-income, high-achieving students are poorly informed about the application strategies typically used by students who generate a strong portfolio of admission offers from which to choose. For instance, they appear not to know enough about their admissions probabilities at various schools to realize that a normal strategy involves applying

to several peer schools and one or two schools where they are virtually certain to be admitted.

2. Low-income high achievers are poorly informed about what college will actually cost them (the net cost) as opposed to colleges' listed comprehensive costs (the sticker price).

3. Low-income high achievers are poorly informed about the differences among colleges in their instructional resources and typical outcomes, such as their graduation rates.

4. Low-income high achievers either do not realize that they are eligible for testing and application fee waivers, or do not have counselors who help them file the paperwork necessary for fee waivers.

We found no evidence of the popular misconception that low-income high achievers or their families actively want to avoid applying to or attending selective colleges. In fact, when asked about their ambitions and expectations, the low-income students whom we interviewed and surveyed expressed eagerness to attend the best schools that would admit them, and many expressed a desire to attend an out-of-state school if it was affordable. The results of our research suggest that cultural or familial factors are not a primary driver of students' behavior.[5] Indeed, the key barrier for many low-income high achievers seems to simply be a lack of information.

This central finding is, on the one hand, very frustrating. By the time they are seniors, low-income high achievers have put in over a decade of hard work, often in the face of great personal adversity, to make it to the top of their high school classes. What's more, they express an eagerness to attend selective colleges, schools that would welcome them with open arms and shower them with generous financial aid packages. Although the current generation of financial aid policies at the most-selective colleges—which make attending these schools free for low-income students—have improved income diversity to some extent at top universities, most in the educational community consider this progress insufficient. The stubborn income gap in college applications—which in 2007 translated to between eight and fifteen applications from high-income high achievers for every one application from a low-income high achiever at selective colleges—remains. It seems, therefore, that it is a tremendous waste of potential that many low-income high achievers do not develop their talents at America's best colleges.

Still, the fact that poor access to information seems to be the main factor keeping low-income students from applying to better colleges is cause for some encouragement. Changing a student's mind about her college preferences might be a tough task, but merely providing her with better information is easy—and cheap. Given their academic success, low-income high achievers are also especially likely to be able to digest and act upon that information if it were more readily available to them. Therefore, low-income high achievers provide an excellent opportunity for a targeted informational intervention that could have dramatically positive results.

Chapter 3: The ECO Project

Drawing on a wide body of research and support from university leaders and foundations, we developed a novel intervention to develop ways to improve the outcomes of high-achieving, low-income students—the ECO Project. A founding principle of ECO was that it was not an agent for any specific college or colleges, but rather a trusted third party. Underlying the project is the idea that higher education and society more generally will benefit from students being fully informed about their full range of college opportunities. An individual college would accrue only a tiny fraction of the gains if it were to make the same investment in informing students.

Evidence from our past research on the behavior of low-income high achievers helped us design the ECO interventions. For instance, because we realized the sheer scale of the pool of income-typical high achievers—numbered in the tens of thousands, not in the hundreds or even thousands—we designed interventions that could be scaled up to a large population. The interventions were designed to be very inexpensive on a per-student basis to include as many students as possible at low cost. Because we knew the students were dispersed, we designed interventions that did not require a critical mass of students in any location. Almost any in-person intervention would have this requirement. Because we knew that there was already a great deal of college-related information (and misinformation) available on the internet in various flat forms, we designed interventions that contained customized information and showed students how to navigate through the flat information to find what they needed.[6] Because we knew that the income-typical students had teachers and counselors who did not have the time to develop expertise on selective college admissions and financial aid that they would rarely use, we designed interventions that went directly to the students, and did not convey it through a counselor. An additional reason to go directly to the student is that the possibilities for customization are much greater. For example, it allowed us to employ an individual student's estimated family income when we constructed net cost scenarios.

Because we realized the sheer scale of the pool of income-typical high achievers—numbered in the tens of thousands, not in the hundreds or even thousands—we designed interventions that could be scaled up to a large population.

We developed the ECO intervention using a wide array of data sources, some of which are available only to researchers with specific data contracts. To synthesize best practices with regard to application strategies, we relied on materials from the College Board and ACT, published guidebooks, interviews with college admissions officers, and interviews with organizations that have a history of success in working with students from low-income families. We collected very detailed data on the financial aid and scholarships for each U.S. location and on the net costs of each selective college. These data included college-going and achievement histories for every high school, public or private, and were used to customize the material for each student using data from the College Board and ACT at the level of student records for several cohorts.

IMPLEMENTING THE ECO INTERVENTION

Developing and rolling out the ECO intervention involved careful information-gathering stages and a fine-tuning of the intervention materials. We conducted pilot testing of our interventions using a randomized controlled trial on 9,000

students in 2009–10. To gather feedback on the materials, we also conducted numerous focus groups after the 2009–10 school year. The ECO interventions that resulted from the pilot testing were sent to 10,000 randomly selected high school seniors in 2010–11 (with a control group of 2,500 randomly selected seniors), and to 15,000 seniors in 2011–12 (with a control group of 3,000).

The students who received ECO materials and the control group (who received nothing) were randomly selected from the top decile of ACT and SAT test takers. They are exceptionally good candidates for admissions at most of the 236 most-selective schools, and strong candidates at even the *most*-selective private schools. We focused on students from the bottom third of the family income distribution.

The primary ECO intervention on which we report here combines the following pieces (see figure 3):

1. *Application Guidance.* ECO provides students with the advice that an expert college counselor would give a high achiever. This part of the intervention includes customized reminders about deadlines and requirements for colleges in which the student expresses interest. It shows comparisons between students' local schools, other in-state schools, and randomly chosen selective schools from other states. Schools are compared on data such as instructional resources and graduation rates. This part of the intervention informs students about how to obtain fee waivers and how to use the U.S. Department of Education's College Navigator (nces.ed.gov/collegenavigator) to find peer colleges.
2. *Net Costs.* ECO provides students with net cost information on their local schools, other in-state schools, and randomly chosen selective schools from other states. It is not possible to show a student her exact net cost. Rather, net cost is shown for exemplary families whose income is likely to span the student's own. In a supplement, students are given net cost information on all peer and safety schools. This part of the intervention strongly encourages students to apply to colleges that match their interests rather than to *assume* that they cannot afford it. This part also explains how to interpret a financial aid offer and how to seek individual advice on a financial aid offer from the relevant college.

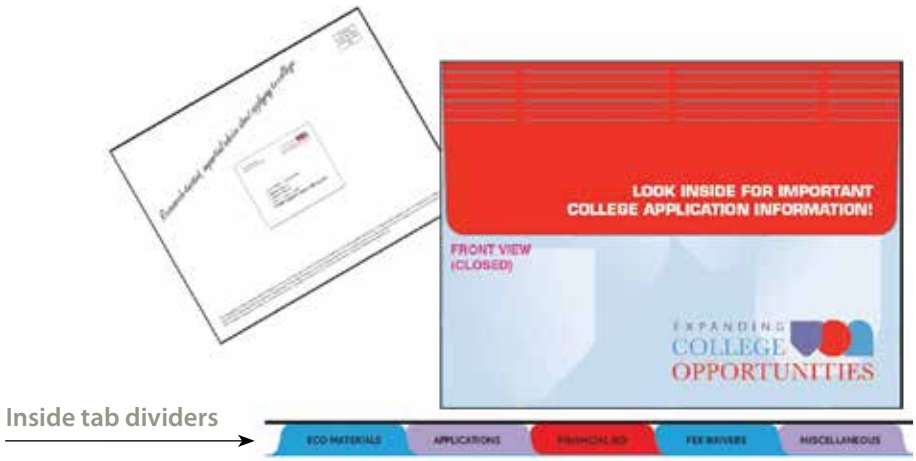
FIGURE 3.

Expanding College Opportunities Intervention Content

Application Guidance	Net Costs	Fee Waivers	Comprehensive ECO Intervention	Parent Intervention
• Personalized letter of introduction • Application Guidance booklet • Customized handout comparing graduation rates and instructional resources • Graduate rates for all four-year institutions • Individualized reminders about deadlines and requirements for students who gave us a list of colleges that interested them • Blank Common Application • FAQs • Reminder magnet	• Personalized letter of introduction • Customized net costs handout with local, state, and national schools for families with similar estimated income ($25k, $40k, $60k) • Net costs for all selective colleges • List of colleges that meet 100% of need • Customized list of merit and need-based aid programs • Guide to financial aid • FAQs • Reminder magnet	• Personalized letter of introduction • Fee waiver guide • Eight ECO Fee Waiver coupons, personalized with participant's name and an ECO code • Fee waiver instructions and list of participating institutions • FAQs • Reminder magnet	• All materials from Application Guidance • All materials from Net Costs • All materials from Fee Waiver	• Personalized letter of introduction • Parent Guide #1: Application Guidance for parents • Parent Guide #2: Net Costs modified for parents • Parent Glossary • Supplemental materials from Application Guidance and Net Costs • April mailing: Guide about how to help child make college decisions

FIGURE 4.

Representation of ECO Mailing Packet for 2010–11 and 2011–12 Cohorts



3. *Fee Waivers.* ECO provides students with no-paperwork fee waivers that allow them to apply to up to eight selective colleges (from about the 200 most selective) free of fees. The fee waivers are specific to the student and cannot be transferred to anyone else.

4. *Parent Intervention.* ECO also tested an intervention that repackaged the material from Application Guidance and Net Costs for an audience of parents.[7]

Although we initially planned to deliver more material via internet than by mail, we learned during the pilot phase that mailed materials were much more appealing to students and their parents. Thus, the primary mode of delivery was mail, with each student also getting access to a website that presented customized information similar to that in the mailed packet. Each student had her own password for the website so that she could see only the materials for the intervention to which she was assigned. The password also ensured that students saw customized materials. Figure 4 presents an example of the mailing envelope, which contained a large, expandable folder organized by topic—intended to send the message that the students needed to organize information if they were to make wise college choices. As noted above, figure 3 lists the primary items included in the intervention packets.

Data on students' outcomes were collected from surveys that we conduct each summer (after high school graduation and after each year of college). The surveys are the richest source of data on high achievers ever gathered in the United States. They allow us to understand not just what students did, but why they made their choices. To complement these data, we also collected data on students' outcomes from the NSC, which record exactly where and how students are enrolled each year. The advantage of the NSC data is that they include essentially every student, including the one-third who do not respond to the survey.

We examined outcomes at all stages of the college-choice process—application, admissions outcomes, and matriculation. Consider the policy implications: if ECO increased applications but students were not admitted to more and different colleges (implying choice sets were unaltered), ECO would generate costs in terms of the added burden of applications for both students and institutions, but no benefits in terms of expanded choice sets. Similarly, if students did not change the institution in which they enrolled even though they had more and different options, the benefits of ECO would be limited.

Chapter 4: Results and Lessons of the ECO Project

The results of the initial program were dramatic: ECO affected students' application behavior, their choice sets through a greater number and higher-quality set of admission offers, and finally through attendance at more-selective colleges and universities.

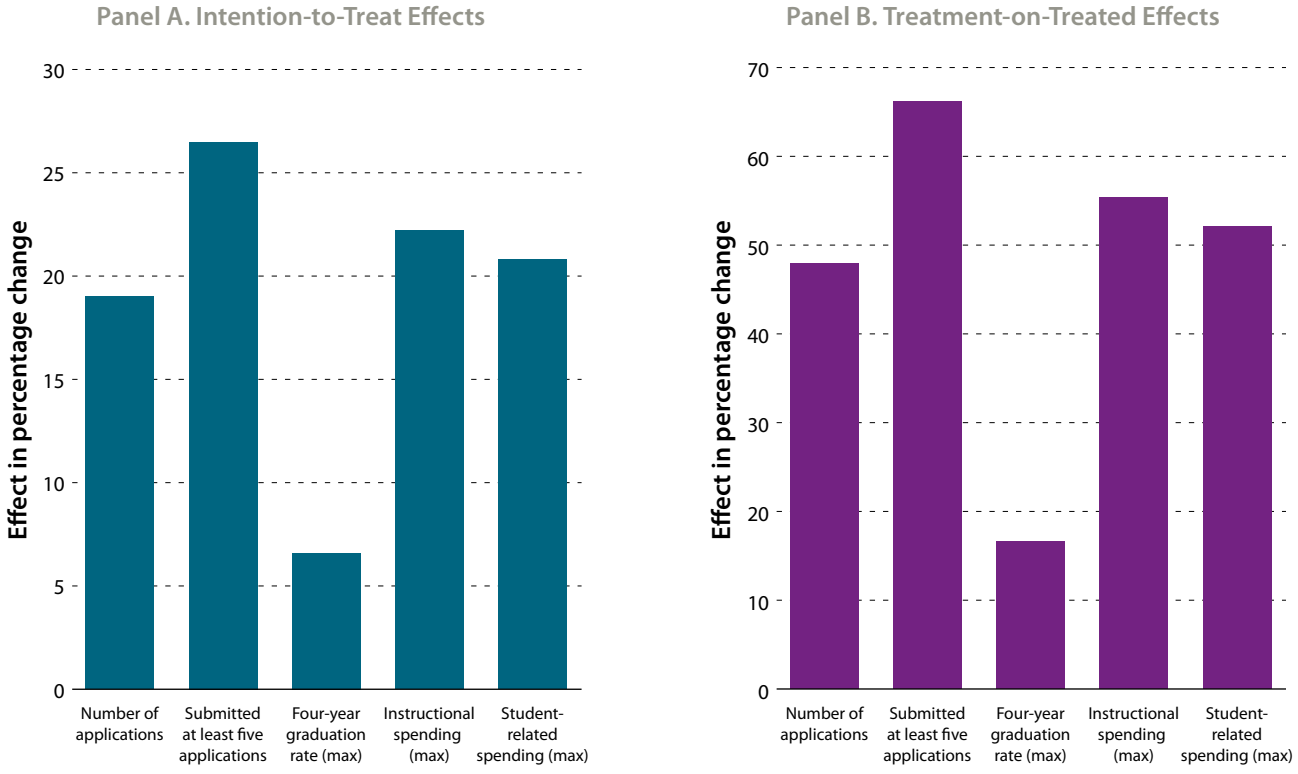
Figure 5 shows the difference between the application behavior of students that randomly received the primary ECO intervention and students in the control group. We find that the ECO intervention causes students to submit 19 percent more applications, with an increase in the share sending more than five applications rising by 26 percent. What is more, students apply to institutions with greater instructional and student-related expenditures, with these metrics rising by 22.2 percent and 20.8 percent, respectively (figure 5, panel A).[8]

Moreover, the ECO intervention raises students' probability of applying to a peer public university by 19 percent, a peer private university by 17 percent, and a peer liberal arts college by 15 percent.

However, these results likely represent a lower bound on the effectiveness of the program were it to be scaled up and conducted by a well-known and trusted organization such as the College Board or ACT. Our intervention materials were distributed by a relatively unknown organization and many students disregarded the mailings. Indeed, based on our surveys, only about 40 percent of the students assigned to receive ECO materials could recall seeing intervention materials at all. Because most students disregarded the materials, the effects of the program were likely diminished.

FIGURE 5.

Effect of the ECO Intervention on College Applications, Quality Metrics



To correct for this, we scaled up the estimates to form an estimate of what economists call the "treatment-on-the-treated" estimate of the effects on the students that actually read the materials.[9] This estimate is presumably closer to the effects that a trusted organization such as the College Board or ACT would experience if it were to conduct the intervention. Indeed, these organizations would likely achieve greater effects if they sent the materials at the same time that students received their PSAT, SAT, PLAN, or ACT scores—since score reports are extremely likely to be opened.

We present the treatment-on-the-treated effects (relevant for a trusted organization such as the College Board or ACT) in panel B of figures 5 through 8. The ECO intervention caused students to submit 48 percent more applications and to be 66 percent more likely to submit at least five applications. Students were 48 percent more likely to apply to a peer public university, 42 percent more likely to apply to a peer private university, and 38 percent more likely to apply to a peer liberal arts college. The ECO intervention caused students to apply to a college with a 17 percent higher four-year graduation rate, 55 percent higher instructional spending, and 52 percent higher student-related spending.

Effects of the ECO intervention on college admissions. Not only did students apply to more-selective colleges, but they were accepted by more of those colleges, as shown in figure 7. First, consider the effects of simply receiving the information (the intention-to-treat effect). Students who were assigned to the primary ECO intervention were admitted to 12 percent more colleges. They were 31 percent more likely to be admitted to a peer college; the maximum college to which they were admitted had students whose median SAT scores were 21 points higher. Students were admitted to a college with a 10 percent higher graduation rate, 14 percent higher instructional spending, and 14 percent higher student-related spending.

The treatment-on-the-treated effects (relevant for a trusted third party) are larger. The ECO intervention caused students to be admitted to 31 percent more colleges. It caused them to be 78 percent more likely to be admitted to a peer college. They were admitted to colleges with a 24 percent higher graduation rate, 34 percent higher instructional spending, and 34 percent higher student-related spending.

Effects of the ECO intervention on enrollment outcomes. In figure 8, we show that the ECO intervention does, in fact,

FIGURE 6.

Effect of the ECO Intervention on College Applications, Peer

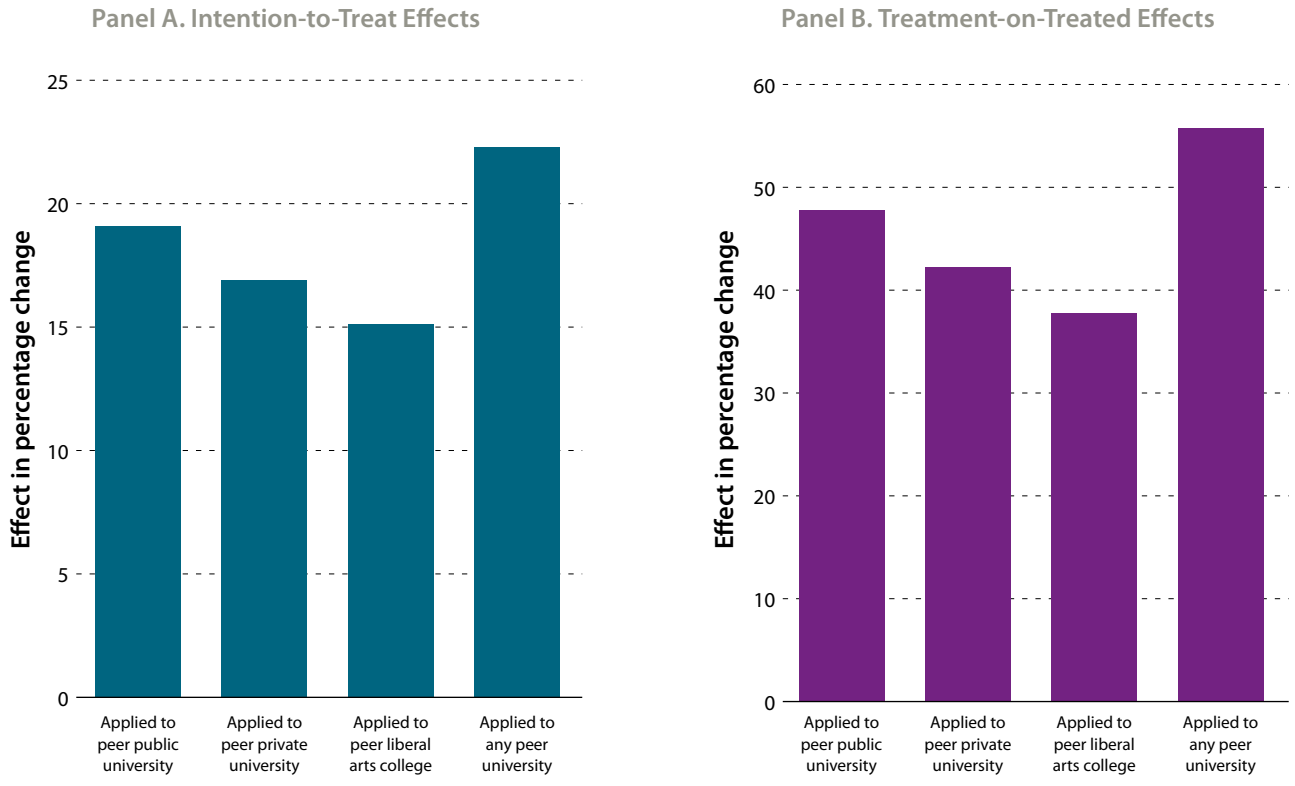
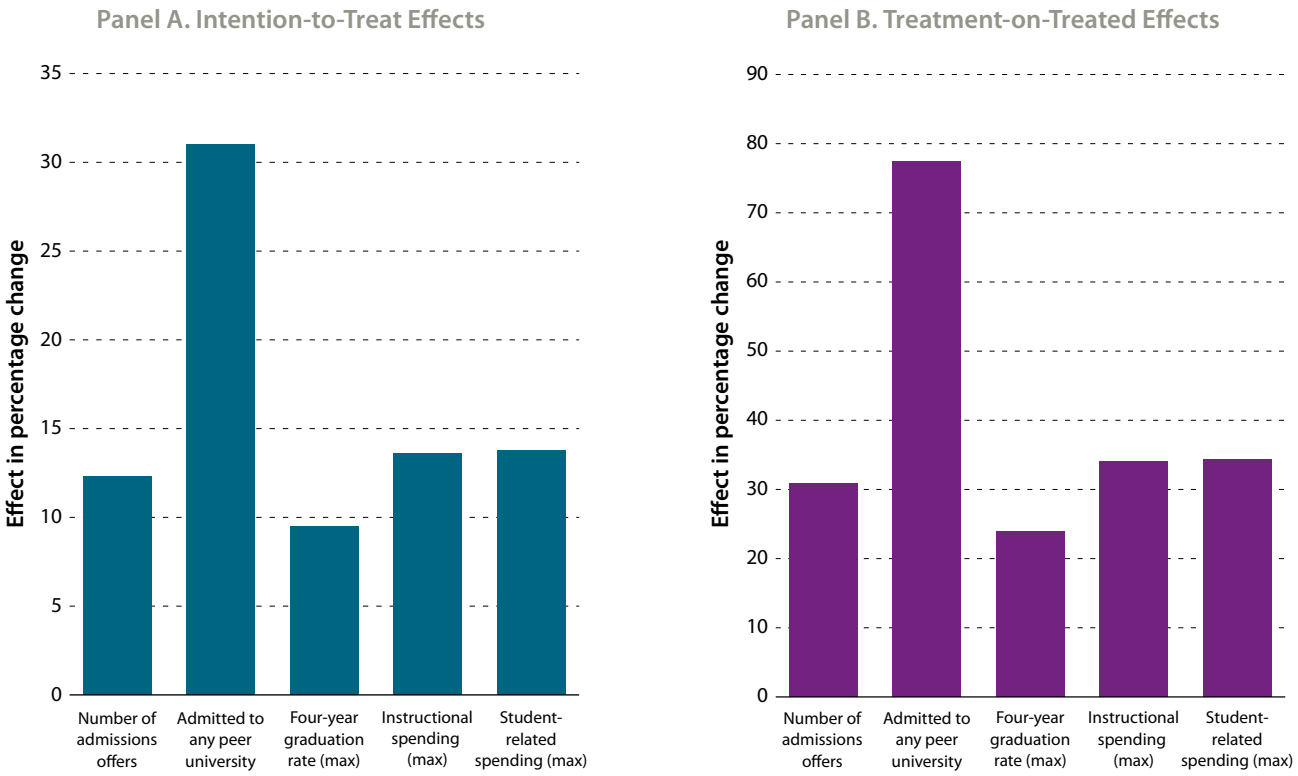


FIGURE 7.

Effect of the ECO Intervention on College Admissions Outcomes



alter students' enrollment decisions. The intention-to-treat effects are as follows: Students who were assigned to the ECO intervention enrolled in a college that was 19 percent more likely to be a peer institution. They enrolled in colleges with graduation rates that were 6 percent higher, instructional spending that was 8.6 percent higher, and student-related spending that was 10.4 percent higher.

The treatment-on-the-treated effects (relevant for trusted organizations) are larger. The ECO intervention caused students to enroll in colleges that were 46 percent more likely to be peer institutions, whose graduation rates were 15.1 percent higher, whose instructional spending was 21.5 percent higher, and whose student-related spending was 26.1 percent higher.

An important corollary of the fact that the ECO intervention changed the choices of students is that it demonstrates that the application and matriculation decisions made by low-income, high-achieving students in the absence of the intervention were not the product of a well-informed decision. These students could have attended the same schools they would have attended in the absence of the intervention if their family circumstances or preferences had favored those choices. The fact that they behave differently in the presence of new information indicates that their new choices make them better off.

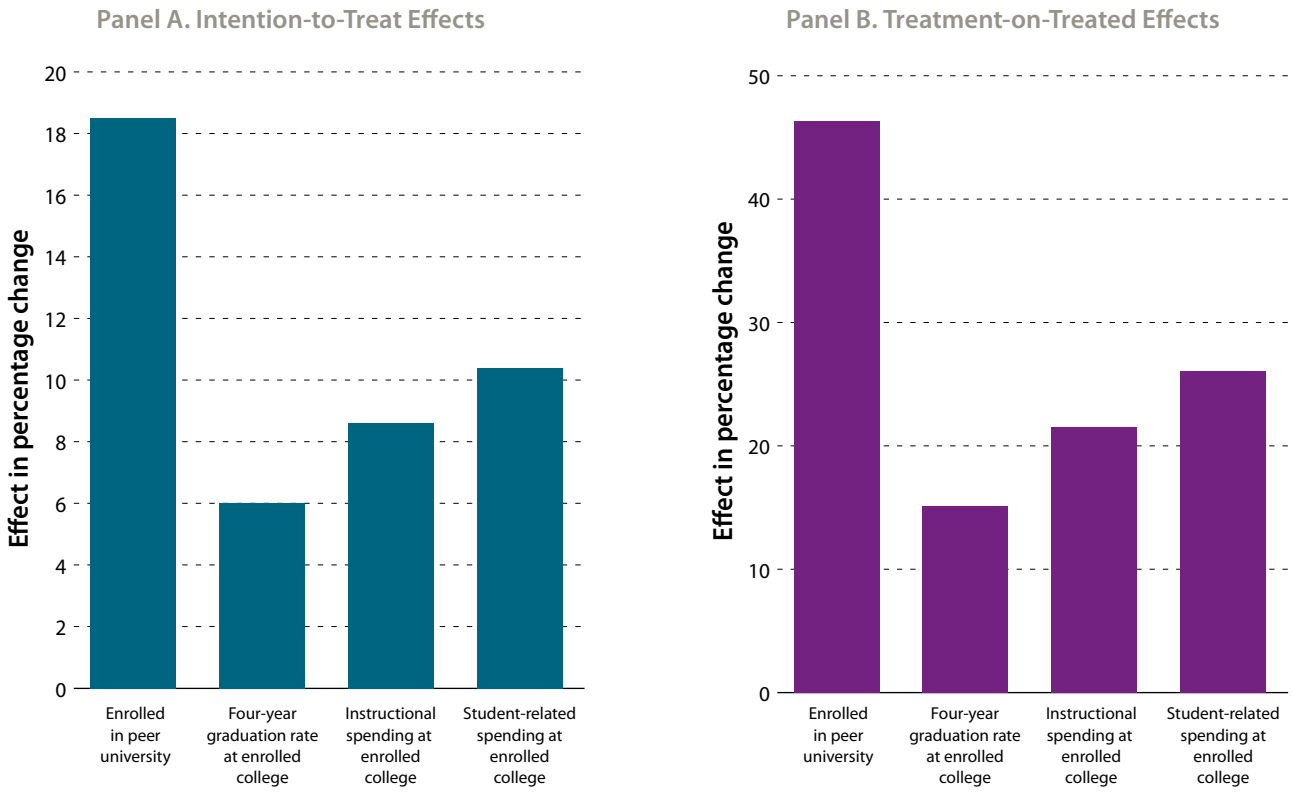
COMPARING COSTS AND BENEFITS

The realized long-term benefits of the ECO interventions depend on how attending institutions with greater instructional resources and curricula oriented toward students with high preparation affects students' outcomes such as graduation rates, progression to graduate school, and earnings.[10] While it will be some years before these indicators are available, existing estimates on the benefits of attending a more-selective college can be used to conduct some cost-benefit comparisons.

Of course, costs are straightforward to measure: they were approximately $6 per student that we intended to treat. (Given that not all students actually receive the materials, the cost of reaching any one student is somewhat higher, likely about $15.) As we discuss later, we believe that a highly reputable organization such as the College Board or ACT would likely achieve a much higher open rate, and thus a lower cost of treatment.

FIGURE 8.

Effect of the ECO Intervention on Enrollment Outcomes



Because the ECO intervention causes students to enroll in colleges that have higher graduation rates, more resources, and more similarly prepared peers, the benefits are proportional to the effect of attending a more-selective institution. Using the best available *causal* estimates (which are based on regression discontinuity designs), we expect the long-run earnings impact of ECO to be between $222,990 to $567,821 in higher lifetime earnings.[11] What is more, there is a range of nonpecuniary benefits such as marital outcomes, likelihood of assuming leadership positions, and civic participation that have been shown to be affected as well.

An important benefit for society overall is that the ECO intervention will likely cause low-income students to have greater social mobility. They can thus raise aspirations for everyone and serve as mentors and role models to others from low-income backgrounds.

While the direct program costs of the ECO program are unambiguously small, the low-income, high-achieving students do receive educations that are more expensive—on the order of $50,600 per student over four years. Ultimately, though, these students' costs are paid by alumni and taxpayers via the greater lifetime earnings that they garner as a result of having attended more-selective colleges.

KEY LESSONS FROM THE ECO PROJECT

The ECO Project, by marrying rigorous research to a clear policy challenge, provides a number of lessons about improving college outcomes for low-income high achievers. It also provides numerous insights that apply to a much broader range of students than the ones we targeted in the interventions. The key lessons learned are as follows:

Common aspirations. Contrary to some beliefs, culture and/or lack of aspiration do not appear to be important factors in explaining why low-income high achievers apply to nonselective colleges while their high-income counterparts apply mainly to peer colleges. In the ECO survey, low-income high achievers express no hesitancy about attending the best college to which they can gain admission and that they can afford. Most students are eager to go beyond the postsecondary options available to their lower-achieving high school classmates—even though they can do so only by attending school outside their immediate neighborhood and with students who are strangers. The ECO survey is strongly supported by survey and interview

evidence in Avery and Kane (2004) and Avery and Turner (2011): both studies find low-income, high-achieving students place the same value on college and care about the same college characteristics as their affluent counterparts. Where the low-income and high-income high achievers differ is in their access to information and help with the college application process, not in their aspirations.

Information differs. In the absence of the ECO intervention, low-income high achievers are much less-informed about net costs, fee waivers, and resource differences among colleges than one might think. For instance, the ECO survey shows that control-group students often are unaware of which colleges are peer institutions for them, which have high graduation rates, and which offer generous financial aid. They often do not know which are the more-selective schools—even within their own state. They are frequently unacquainted with the process of applying to very selective institutions and reported that they miss key deadlines. The vast majority of control-group students do not know that they are eligible for fee waivers. They believe that it is normal to apply to many fewer institutions than their high-income counterparts believe.

Information matters. High-achieving, college-ready students are well positioned to make good use of information about application strategies. They appear able to digest information about specific college and university options *if* it is customized so that it is relevant to them.

Informational interventions are cheap. For about $6 per student, the ECO intervention has an impact on where students choose to attend college that is larger than that of interventions that are dramatically more expensive—for instance, in-person counseling and increased financial aid. What is more, this type of intervention is likely to multiply the effectiveness of any program, such as the Pell grant, which relies on students to make choices by comparing returns across different institutions.

The relevance, not just the quantity, of information matters. The internet contains vast quantities of information—and misinformation—about colleges. Furthermore, high achievers typically receive hundreds of recruiting brochures from colleges, each touting itself as being a wonderful fit. Thus, the problem that a student faces is not a lack of data per se. Rather, the problem is that data need to be filtered for accuracy, packaged, and connected in order for students to make effective use of those data in decision making. To engage students, the information must be relevant to a student's particular circumstances.

For example, the College Navigator site maintained by the U.S. Department of Education contains an extraordinary quantity of information about colleges, including their graduation rates, tuition, and average financial aid. Yet such repositories suffer from two shortfalls. First, the information presentation is flat. Second, much of the information presented on such sites is hard for the student to customize, making it difficult for students to identify options that fit their circumstances. While students *can* find the information they need, it is only savvy students who are likely to do so—exacerbating the guidance gap between low-income students and those with affluent parents who themselves attended selective colleges.

For about $6 per student, the ECO intervention has an impact on students' college enrollment that is larger than that of interventions that are dramatically more expensive—for instance, in-person counseling and increased financial aid.

These findings should not come as a surprise. When faced with a vast quantity of information and few tools to digest this information, people are likely to follow default behavior, which—in the case of students—may be choosing the nearest college. In some respects, this outcome parallels the behavior of individuals when faced with complex financial planning decisions. For example, when individuals are faced with complicated choices about health-care coverage or retirement savings, they gravitate to the default option (see Choi et al. 2002; Madrian and Shea 2001; and Thaler and Sunstein 2008). Such default behavior generates great inequality in outcomes between people who are savvy and those who are not. In the case of college choice, the default behavior appears to be

causing inequality between low-income high achievers and their high-income counterparts.

It should also not come as a surprise that customized information can substantially reduce inequality. In a number of other contexts such as selection of financial instruments and prescription drug coverage, direct provision of customized information has been shown to improve decision making. For example, Kling and colleagues (2012) show how personalized information about drug costs under different Medicare options changed plan selection. In a different context, Hastings and Weinstein (2008) demonstrate that providing parents with relevant and digestible information on school characteristics led low-income families to choose elementary schools of higher quality.

Data quality and computational power distinguish effective informational interventions. Delivering highly targeted interventions requires the integration of an enormous volume of data on students; their high schools' record of sending students to college; colleges' characteristics; financial aid, scholarships, and net costs; and college outcomes for prior cohorts of students. To create effective interventions, we needed access to the underlying raw data as well as advanced analytic and statistical skills. Indeed, the computing power, data, and research skills that we employed to create the ECO interventions are far beyond the capacities of even the best universities' admissions staff or the most high-achieving high school seniors.

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Indeed, the key distinguishing feature of the ECO Project is its use of data and advanced analytics to reach students and disseminate information. The analytics required to execute the ECO Project are formidable. First, the identification of high-achieving, low-income students draws on multiple large data sets with millions of observations. It is necessary to engage in computationally intensive programming to match student characteristics and detailed data from high schools and local neighborhoods in order to identify students in the target group. Use of college-specific graduation rates, financial aid availability, and other characteristics requires knowledge of large-scale federal and proprietary data sets and the capacity to match relevant data to individuals.

Looking forward, we anticipate many opportunities to build on the analytic model and provide guidance on college planning and college choice significantly earlier in students' lives. We could also provide information that is much more customized, give information to students over the full range of preparation and aptitude, and give students interactive tools for evaluating their college options.[13] Helping students focus on the range of institutions where they are likely to be admitted and succeed may lead to better matches and improved outcomes. Similarly, helping students to focus on the programs for which they are best-prepared may improve degree completion, particularly in fields (such as science, math, and engineering) where poor preparation causes students to derail.

Assuming that every policy must work through in-person counseling is likely to lead to unequal treatment. In-person counseling by high school staff, college staff, or mentors has an obvious appeal. However, because of its expense, its requirement for counselors to become experts for individual students (whose needs may be unusual), and its requirement that the counselor and student be in the same place at the same time, it nearly guarantees unequal advising among students who are equally well-prepared for college. Indeed, because so many well-intentioned people reflexively believe that only in-person counseling can be effective, they often do not ask themselves whether funds could be better used than in programs that spend thousands of dollars on each student and that serve only a fraction—often a tiny and arbitrary fraction—of students. The students who suffer most from this assumption are low-income students, because it dooms many of them to receiving expert advising in *no* form whatsoever.

Parents are eager for objective information. One reason why some people prefer that college information goes through counselors and not directly to students is that they suspect low-income and less-educated parents of trying to prevent their children from attending college, or from attending any

college but the most local one. We found little support for this notion in the ECO survey. Instead, we found that parents were often suspicious of college-related information that appeared to be recruiting for a specific institution, that might be selling their child some service, or that might commit their child to some debt she would not be able to repay. It was very important to them that the ECO information was objective and did not suggest recruiting. It was also important to them that ECO was not selling their child anything. If they grasped these facts about ECO, they were generally eager for information.

Collective action is needed. It would not make sense for any individual college to implement an ECO-type informational intervention. Indeed, the information is much more credible and effective if it is delivered by a third-party, nonprofit organization. Only such an organization will be perceived as offering objective information. Moreover, much of the efficiency of the ECO Project comes from the fact that it is effectively addressing a collective-action problem. Many colleges and universities would like to enrich their pool of prospective students with more low-income high achievers, but identifying such students is very difficult for them. (We emphasize that no college has the tools to implement the ECO interventions.) Furthermore, unilateral increases in recruiting and financial aid by a few institutions tend to reshuffle students among selective colleges rather than dramatically expand the overall pool of high achievers who apply to selective colleges.

Collaboration in the identification and recruitment of low-income students is a clear mechanism through which colleges are able not only to increase opportunity, but also to improve efficiency. Better-informed students are likely to foster constructive competition among schools.

Chapter 5: A Way Forward

The ECO Project was specifically designed to be scalable, and the success of its early implementations suggests that it should be expanded beyond the 15,000 students that received the informational intervention last year. But expansion does not only mean sending more envelopes to more students (although that is an important next step): it also means improving researchers' access to data and applying the lessons of the ECO interventions to new populations and problems. In light of the program's preliminary success, we have five specific policy proposals for how it can be expanded:

1. Establish or partner with credible third parties for implementing and extending the ECO Project.
2. Expand the ECO interventions to serve more high-achieving, low-income students through partnerships with the College Board and ACT.
3. Improve targeting and effectiveness of the intervention by providing ECO researchers with better access to data.
4. Apply similar interventions to different students and outcomes.
5. Support rigorous research on information-based interventions.

Each item is discussed in detail below.

1. Establish or partner with credible third parties for implementing and extending the ECO Project.

Building on the success of the ECO Project necessitates maintaining and improving the complex and data-intensive targeting and customization systems that underlie the intervention; establishing and sustaining credibility of the ECO intervention as a trusted source of unbiased information; and providing a clearinghouse for data, research, and dissemination of information that meets the needs of students and their families, colleges and universities, and other partners and data providers, such as government agencies. However, sustaining and improving the quality of the program still requires expert oversight, and the means to conduct continual evaluation and improvement and to manage the day-to-day operations. This requires sustaining the ECO organization as a central party in any implementation and expansion of the program.

In addition, we recommend partnerships with credible and trusted institutions including the College Board and ACT. Such partnerships would likely increase the impact of the evaluation—particularly if the outreach materials were disseminated alongside other important college-related materials. Moreover, in our research we found that students and parents were more open to the information we sent if they believed it was objective and was not trying to sell them on any specific school. As reputable third parties in the college process, the College Board and ACT would be seen as credible and neutral sources of information. Similarly, it makes sense to concentrate these resources within one or two institutions: by providing a clearinghouse of information for all parties, this would reduce duplicative and competing efforts on the part of universities, clarify the information available to students, and help establish the credibility of the organization as a purveyor of a public good.

By establishing such partnerships, ECO and its researchers would maintain the capacity to address the analytic and data challenges that arise with a project of this size and to continue research toward improving the effectiveness of the intervention.

2. Expand the ECO interventions to serve more high-achieving, low-income students through partnerships with the College Board and ACT.

The original ECO intervention targeted only a fraction of potentially eligible high-achieving, low-income students. An important design feature of the ECO program is that it is easily brought to scale at a low marginal cost. Sending the materials to 50,000 students is no more logistically complicated than sending the materials to 500. To increase the number served, we propose extending our relationships with organizations such as the College Board and ACT.

Executing the implementation of the ECO intervention requires unique characteristics that few organizations possess, and therefore we propose that ECO be implemented nationwide through the College Board and ACT. Two main factors drive this recommendation. First, the sheer quantity of data that must be analyzed and mailing material that must be processed requires a great deal of coordination, and it would be simpler for ECO to partner with one or two large

organizations than with many smaller institutions. Second, in our research we found that students and parents were more open to the information we sent if they believed it was objective and was not trying to sell them on any specific school. As reputable third parties in the college process, the College Board and ACT would be seen as credible and neutral sources of information. ECO would remain the trusted party for addressing analytical and data issues that arise with a project of this size, and for supporting the work of the College Board and ACT in implementation.

3. Improve targeting and effectiveness of the intervention by providing ECO researchers with better access to data.

A key factor in the success of the ECO intervention is the ability to target individual students with accurate, customized, and relevant information. This capacity depends critically on access to rich data to identify, target, and customize information for high-achieving, low-income students.

This ability is already being eroded by changes in census data; the Census Bureau no longer gathers much of the necessary data. Since 2010, the Census of Population has ceased gathering data on incomes, housing values, occupations, or adults' education. This is a shocking loss of information at the fine level of geography needed to estimate students' family income accurately.[14] Indeed, without precise information on students' family incomes, researchers will be unable to identify thousands of students who could benefit from the ECO intervention.

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The federal government, however, maintains a variety of administrative databases that could dramatically improve the efficacy of the targeting—and thus the effectiveness of the program. Valuable data include information on the geographic concentration of student aid recipients within the U.S. Department of Education and/or information on family income from other sources.

In 2013, the College Board committed to undertake the ECO intervention for every low-income high achiever who takes a College Board test such as the PSAT. While that would be an unprecedented feat in social science, the planned expansion of ECO through the College Board leaves out a significant fraction of students who might benefit from the intervention.

Indeed, this expansion still omits roughly half of all students that take college admissions tests nationwide—particularly those who take the ACT—and also omits a large share of colleges and universities that rely on applications from those students. A substantial share of students—particularly in noncoastal states—take only the ACT exam. Including high-achieving ACT students in the pool of students receiving ECO materials would markedly extend the reach of the program. Also, it would ensure that selective colleges in ACT-reliant states (Carleton, Grinnell, Oberlin, Tulane, University of Chicago, Vanderbilt, and so on) experience just as big an increase in the economic diversity of their applicant pool as selective colleges in SAT-reliant states. If ECO interventions were fully implemented through both the College Board and ACT, low-income, high-achieving students in almost every region of the country could be helped by the intervention.

To that end, we propose that the federal government provide a mechanism for ECO and other legitimate researchers who are engaged in developing interventions that inform students about their college-related options to access these key administrative databases. These data would facilitate the identification of students from different economic circumstances, and the compiling of information on college outcomes. Many of the uses of these data would not require individually identifying information; for data that require more sensitive protections, a variety of systems (such as the secure Research Data Centers) could ensure confidentiality.

The U.S. Department of Education and other federal agencies maintain a significant amount of the data relevant to ECO. The key source of that administrative data is derived from the Free Application for Federal Student Aid (FAFSA) and the Title IV programs, including Pell grants and Stafford loans.

Another important source is the data set derived from the administration of guaranteed student loans.

There are several reasons why these federal data are particularly valuable for the ECO Project.

a. Because the data are derived from administrative sources rather than surveys and use the actual numbers used to determine students' eligibility for financial aid, they are extraordinarily accurate. This accuracy strengthens scientific evaluation, increasing the likelihood of reliable and robust results.

b. Unlike survey data from the Current Population Survey or the American Community Survey, federal administrative data are not a sample but rather represent the population of students who file financial aid forms. As a result, the power of inference based on these data is much greater and would allow ECO researchers to target interventions much more precisely.

c. Federal administrative data include students who take no College Board or ACT test—about half the students in the United States. While very high achievers almost always do take these tests, many students who are reasonably but not highly college-prepared do not (Bulman 2012). It would be unfortunate if non-test-takers were permanently excluded from interventions that inform students about their college options. Federal administrative data would allow them to benefit much more equally.

d. Federal administrative data have exact geographic specificity. Even when aggregated to a level such as the census block group, the geography is important. This is because a student's postsecondary options often vary with her school district, her municipality, her county, and so on.

The barrier to the availability of large-scale administrative data sets to aid in the developing and targeting of interventions is not technological or financial: it is purely administrative. Federal data and states' longitudinal data from their accountability

BOX 1

How More-Precise Targeting Could Enhance the Effectiveness of the ECO Project

It is important to note that, while low-income students who reside in areas of concentrated poverty are relatively easy to identify and to target with college access programs, including federal initiatives such as the TRIO Programs, these students are only a minority of low-income students. The vast majority of low-income students live in clusters of poverty that are far too small to be identified from a zip code or an urban concentration. They are routinely missed by programs that target high-poverty schools and the inner cities of major metropolitan areas. It seems unlikely that the federal government intends to give low-income students such unequal treatment.

To illustrate, whereas 76 percent of low-income college-aged children live in a school district that does not have concentrated poverty, only 36 percent of low-income college-aged children live in a census tract that does not have concentrated poverty, and only 14 percent live in a census block group that does not have concentrated poverty. Thus, fine geographic areas provide considerable power in identifying those students most likely to be low income.

Full data from the FAFSA that distinguish student circumstances at the census block or block group level would provide an unprecedented mapping of the distribution of low-income college students. It would allow ECO researchers to customize interventions on dimensions such as financial literacy, use of debt, take-up of aid programs, and colleges that are most popular locally. Incorporating this information in efforts to identify low-income students holds the potential to magnify the impact of existing initiatives such as the ECO Project while also serving the needs of future interventions designed to improve collegiate outcomes.

With address information, it is straightforward (though computationally intensive) to match each student to his or her census block, school district, and so on. After the match, the address itself can be discarded. Indeed, much of the needed research does not require student-identifying information such as name, birth date, or Social Security number. For ECO researchers, the procedures for restricted-use licenses for the major National Center for Educational Statistics (NCES) data sets would serve as a model for the administration and management of these data. Researchers would expect to use de-identified data provided under similar security protocols.

systems are potentially key inputs to better analytics and information dissemination, but to date, researchers have faced formidable challenges in accessing this information. With the proper data, ECO researchers could develop methods for better identifying the students who could most benefit from these interventions, and, along with the third-party organizations that oversee the implementation phases, they could make meaningful strides in increasing access to higher education.

4. Apply similar interventions to different students and outcomes.

ECO has shown itself to be very successful in informing low-income, high-achieving students about their collegiate opportunities, and the results suggest that similar methods can be applied to help students in other ways. Specifically, there are three directions in which the lessons and model of the ECO Project may be usefully extended to provide low-cost assistance to improve collegiate attainment.

First, it is possible to reach students in the first three years of high school rather than just during the senior year. Such early-stage interventions may provide an opportunity to help students with college preparation and college planning. For example, sophomore- and junior-year guidance can help students to take AP classes or subject-specific achievement tests that are valued in the college admission process. Similarly, better information about the affordability of selective colleges may encourage students to raise their achievement.

Second, although ECO has so far been targeted only to high-achieving, low-income students, it is possible to use the basic insights of the program to provide information to reach a much broader range of potentially college-ready students and help them understand the trade-offs among different college and noncollege options. It is possible, if not likely, that high-achieving, medium-income students or moderate-achieving low-income students, and others, would also benefit from a similar informational intervention. Such a program requires a much richer data structure and analytics than was required for the ECO Project, but it is feasible. It could potentially remedy information deficits about *causal* differences in graduation, earnings, and other key outcomes. It could also potentially remedy confusion about debt, repayment rules, and repayment probabilities.

Third, while the ECO Project focuses on the relatively narrow problem of helping high achievers understand their full array of college-going opportunities, a new host of challenges face them once they enroll, such as what courses to take, how much time to devote to employment outside of school, and how much to borrow. Low-income students are especially likely to be at-risk with respect to these choices, as they have more complex financial aid packages than their more-affluent peers. They have fewer financial resources to rebound from mistakes or short-term setbacks while in college, and are more likely to lack the networks and information they need to make sound financial and curricular choices in college. Thus, there are opportunities to extend the basic insights of the ECO model to help targeted students succeed by providing in-college guidance related to financial management and curricular choices.

5. Support rigorous research on information-based interventions.

The ECO Project is just one of many important educational interventions that could help increase college access and diversity. We propose that the IES be given new powers to support information-based interventions to improve college choice. Currently, the IES approach—which is highly laudable—is to make competitive grants to researchers if they make their own arrangements to access data. In addition, IES encourages other divisions of the U.S. Department of Education to cooperate with researchers. However, encouragement is often insufficient. In our view, IES should be given additional powers so that, if it judges that a research project would be highly beneficial to American students, it would have the ability to ensure that the researchers gain access to the necessary federal data, under appropriate safeguards. This will ensure that IES sees research proposals based on whether they are important and feasible, not on whether some other division has already decided to sign off on data access—something it currently has almost no incentive to do.

Chapter 6: Conclusion

The fact that too few low-income, high-achieving students apply to America's most-selective colleges continues to frustrate social scientists, university presidents, and policymakers alike. Promising results from the ECO Project provide one path forward for making progress on solving this important problem. Students who received the informational intervention applied to more colleges, applied to more peer colleges, were accepted at those colleges, and ultimately were more likely to enroll at peer colleges. More low-income high achievers attending more-selective universities could lead to a long list of positive individual and social outcomes, including higher lifetime earnings for the students, greater diversity at America's most-selective colleges, a more-skilled (and, therefore, more-productive) workforce, and more social mobility.

But as successful as ECO has been in expanding the opportunities of low-income, high-achieving students, it would have far broader impact if it were expanded to more low-income high achievers. These are students in whose primary and secondary education state, local, and federal governments have invested tens of thousands of dollars. For an extremely low cost, this intervention can help send more of them to the colleges for which they are best prepared. Here is a serious problem confronting society, and the main barrier to resolving it is not financial, and it is not political—it is simply a matter of releasing existing administrative data to a trusted third party for the purposes of carrying out this intervention. If policymakers can work with social scientists to ensure that the data and infrastructure are in place to extend this intervention to every low-income student in the country, the benefits could be immense.

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Endnotes

1. ECO studied students in the top 10 percent of performance on college assessment exams and in the bottom 35 percent of the income distribution of families with a twelfth grader.
2. Importantly, low-income students already qualify for application fee waivers, so the intervention removes a paperwork burden. It does not give out money that was otherwise unavailable.
3. Avery and Hoxby (2012) provide a comprehensive study of every student in the high school class of 2008 who took either a College Board or ACT assessment. These data provide close to a census of college application decisions and show that the pool of low-income high achievers is strikingly larger than one would think if one looked at current applications to selective colleges. People who consider only applications routinely underestimate the pool because 82 percent of low-income high achievers apply to no peer college, and others apply to only one peer college. (A peer college is one in which the median student has scores and grades very similar to the student's own—specifically, within 5 percentiles.) In contrast, high-income high achievers usually apply to several peer colleges.
4. See Avery and Hoxby (2012). Of course, we have not yet proven that low-income high achievers who are induced to attend more-selective institutions (when they would otherwise not do so) thrive at selective colleges, but we do show in this study that, for a limited range of outcomes that we examine, these students are doing very well. In order to analyze other outcomes, we will continue to follow the students who are so induced.
5. An example of a cultural factor would be placing a low value on higher education, perhaps especially for females. An example of a family factor would be a student's acting as the interpreter for his non-English-speaking family. The ECO survey and survey-based work by Avery and Turner (2011) provide little support for the hypothesis that low-income, high-achieving students do not place the same value on college characteristics and outcomes as their more affluent peers. Nevertheless, people might say one thing in a survey and do another, so it is valuable to test whether students are affected by interventions that do not change their culture or families.
6. Flat forms of information list facts and figures rather than integrate data in a way that makes it easy for students to customize it for themselves or to compare costs and benefits.
7. We evaluate the partial interventions and the parent intervention in Hoxby and Turner (2013) but do not discuss them further here.
8. Student-related spending is spending on instruction, student services, academic support, and institutional support. It does not include research spending or public service spending.
9. See Hoxby and Turner (2013) for a more detailed discussion of the methodology.
10. Note that our follow-up observations on the 2010–11 cohort provide clear evidence that recipients of ECO materials have grades and persistence outcomes that are at least as strong as their peers in the control group. See Hoxby and Turner (2013).
11. Regression discontinuity estimates of attending a more-selective college have been produced by Cohodes and Goodman (2013), Hastings and colleagues (2012), Hoekstra (2009), Kaufmann and colleagues (2012), and Saavedra (2009). All of these studies find substantial positive effects of attending a more-selective college, and they all examine a variety of lifetime outcomes: earnings, on-time graduation, and even the qualities of the person the student marries.
12. Examples include the federal Integrated Postsecondary Education Data System (IPEDS) modules; the American Survey of Colleges from the College Board; and the data on aid and loans from Federal Student Aid.
13. Hoxby and Turner are presently pursuing a preliminary demonstration with the College Investment Project.
14. We have tested the American Community Survey, the census' substitute for the long form of the census data. It is an extremely inadequate substitute at the fine level of geography, which is the census block group, that we use.

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THE HAMILTON PROJECT

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Highlights

Caroline M. Hoxby of Stanford University and Sarah Turner of the University of Virginia propose a national intervention to expand college opportunities for high-achieving students from diverse economic backgrounds and to allow better access to research data in order to more efficiently target and benefit more students.

The Proposal

Establish or partner with credible third parties for implementing and extending the Expanding College Opportunities (ECO) Project. Partnerships with trusted institutions will help build credibility and increase the impact of the program, especially if outreach materials are disseminated alongside other important college-related materials.

Expand the ECO interventions to serve more high-achieving, low-income students through partnerships with the College Board and ACT. Implementing the ECO program through both the College Board and ACT would allow the intervention, which was designed to be fully scalable, to reach low-income, high-achieving students in almost every region of the country.

Improve targeting and effectiveness of the intervention by providing ECO researchers with better access to data. Access to federal databases would help researchers develop methods for better identifying students who could most benefit from ECO and similar interventions.

Apply similar interventions to different students and outcomes. ECO methods can be applied to help students in other ways, such as reaching younger students and students from middle-income families and advising low-income students on new challenges that face them once they enroll in college.

Support rigorous research on information-based interventions. Because the ECO Project is strengthened by the availability of detailed information on family characteristics at very fine levels of geography, the Department of Education and Institute of Education Sciences (IES) can improve the effectiveness of information-based interventions by improving researchers' access to administrative data.

Benefits

The ECO Project is a low-cost and effective means of helping low-income, high-achieving students apply to and ultimately enroll in colleges that are better matched with their academic abilities. Allowing researchers better access to valuable federal databases will facilitate more-efficient targeting of students and wider outreach potential for ECO and similar interventions. More low-income high achievers attending more-selective universities could lead to a host of individual and social benefits, including higher lifetime earnings for students, greater diversity at the most-challenging colleges, a more skilled and productive workforce, and more social mobility for America.

THE HAMILTON PROJECT

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