The Impacts of SOURCE
A Program to Support College Enrollment through Near-Peer, Low-Cost Student Advising

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Abstract

This paper examines the impacts of the SOURCE program, an intervention seeking to improve the college enrollment and persistence outcomes of economically disadvantaged high school students in Los Angeles, California. Using a large-scale randomized control trial, the paper finds that targeted peer-to-peer advising is an effective strategy to increase four-year college enrollment and persistence for these students.

I. Introduction

The question of how to increase college enrollment and persistence, especially among low-income high school students, has long occupied policymakers, scholars, educational institutions, teachers, and parents. Research has demonstrated the important role family income plays in determining access to higher education for even the most qualified students. Ellwood and Kane (2000) found that the enrollment rate in postsecondary education was 90 percent for students in the highest family income quartile compared to 60 percent in the lowest income quartile. For four-year college enrollment, these percentages were 66 and 28 percent, respectively. Remarkably, Ellwood and Kane (2000) found that only about one-half of this difference in college enrollment was attributable to variation in high school grades and test scores.

As discussed further below, there is a significant body of research that indicates that many more, especially disadvantaged, students qualify for college and financial aid than actually attend. An important education policy question then becomes how best to support students to attend the highest level of post-secondary education for which they qualify. This paper addresses this policy question by describing the impacts of the Student Outreach for College Enrollment (SOURCE) program in Los Angeles. This demonstration program, first implemented in the 2006-07 school year by the EdBoost Education Corporation, sought to measure the impact of providing a low-cost intervention aimed at helping disadvantaged youth in Los Angeles successfully complete the college

and financial aid application processes.[1]

This paper describes the impacts of the SOURCE program on a number of college and financial aid access outcomes. Using a random assignment design, we found that the intervention positively impacted many of these outcomes, included SAT taking, college application, enrollment in the two California state university systems, financial aid application and receipt, and persistence in college as much as three years after anticipated high school completion. This article reviews the research that motivated the design of the SOURCE program, describes the characteristics and implementation of SOURCE, and reports on the results of a randomized control trial including 2,499 high school students. We conclude with a discussion of these results and their implications.

II. Actual And Perceived Barriers To College

Effects of Actual and Perceived College Costs on College-going

Existing research has had limited success in identifying the factors that explain differences in college enrollment among higher income and lower income high school students with similar academic records. For many years, hypotheses about why many low-income students who qualify academically do not attend college centered on the perception that college tuition forms a fundamental barrier to enrollment. To examine this, several studies have investigated the impact of various types of tuition and financial aid policies on college enrollment for low-income and other students.[2] In an early review of the literature on student responsiveness to changes in college costs, Leslie and Brinkman (1997, 1988) reported a consensus estimate that associated a $1,000 increase in college costs with an approximately five-percentage point reduction in college enrollment rates.

Some researchers have examined the effect of public tuition on college going by comparing college enrollment rates in high- and low-tuition states. Research in this area assumed that the relevant price for the "marginal" student is the tuition at public institutions in their home state, and evaluated the effect of public tuition on college going by comparing college enrollment rates in high- and low-tuition states. Using three nationally representative data sets—the Current Population Survey, the National Longitudinal Survey of Youth, and the High School and Beyond survey—these studies generated estimates consistent with the literature summarized by Leslie and Brinkman: A $1,000 difference in tuition cost was associated with a six percentage point difference in college-

[1] The research presented here was financially supported by grants from the William T. Grant Foundation and the U.S. Department of Education's Institute of Education Sciences.

[2] See, for example, Dynarski, 2002 and Dynarski, 2003.

going (Cameron and Heckman, 1998; Kane, 1994; Kane, 1999).

In examining the CalGrant program in California, Kane (2003) found that while this aid had a substantial impact on first year enrollment, it had no effect on second year enrollment, suggesting that financial considerations are particularly important at the time when students and their parents first decide about college enrollment.[3] Kane (2003) estimated that the CalGrant program increased first year enrollment by between 1.2 and 9.2 percent per $1,000 of aid. In their analysis of the DCTAG Program,[4] which provides a substantial subsidy to Washington DC residents to attend colleges and universities outside the District, Abraham and Clark (2003) found evidence of the effects of financial aid on students from both low and high-income backgrounds. They found that DCTAG, which is not means-tested and does not require any financial information from the student or family, succeeded in increasing overall enrollment of DC freshmen in colleges and universities, even as high school graduation rates declined (2003: 23). Specifically, they calculated that total college attendance of DC residents increased by 1.1 percent for each $1,000 of tuition assistance available (2003: 24). Conversely, other researchers have found that changes in the amount of aid available had no discernable effect on enrollment (Linsenmeier, Rosen, and Rouse, 2002). Overall, however, evidence suggests that the availability of tuition assistance has a positive impact on college going among various groups of students, especially among low-income students.

The cost of public and private college tuition has increased dramatically in recent years. In 2010, the College Board reported that tuition and fees at public four-year colleges and universities increased about 6 percent beyond the general inflation rate over the past decade (Baum and Ma, 2010). From 2005-06 to 2010-2011, tuition and fees increased approximately 24 percent at public, four-year colleges and universities; 17 percent at private, non-profit four-year colleges and universities; and 11 percent at public, two-year colleges (Baum and Ma, 2010). In roughly this same period (1999-2009), average family incomes have either stayed the same or decreased. African-American and Latino families in this period maintained a median income some 60 percent less than white families, making increases in college tuition potentially especially burdensome for these families. With college tuition on the rise and most families experiencing stagnant incomes, the

[3] The CalGrant program is a state aid program available to California residents graduating from a California high school with a qualifying GPA, attending a qualifying California public college, and with financial need.

[4] DCTAG does not target any one group and covers students from a wide range of socioeconomic backgrounds. It only requires that students meet basic eligibility criteria of being a recent DC high school graduate who plans to attend a public post-secondary institution (and smaller subsidies to students attending private, non-profit institutions in DC and historically black colleges and universities in Maryland and Virginia) at least half time toward an accredited degree (Abraham and Clark, 2003).

importance of information about and access to financial aid has become increasingly important to aspiring college students, especially for those from lower-income families.

Effects of Financial Aid on College Enrollment

Given the sensitivity of college enrollment to tuition costs, it would seem logical that the increase in availability of financial aid programs would lead to increases in college going. Several studies in the 1980s and 1990s did not, however, find this to be the case. These studies examined the impact of the expansion of federal means-tested financial aid programs on college going but found no evidence that these programs were effective. Analyzing college enrollment trends in the aftermath of the establishment of the Pell Grant program in the 1970s, for example, Hansen noted that there had been little evidence of a disproportionate rise in college enrollment by low-income youth (1983). Although this study was criticized for relying too heavily on only two years of data, and for including males, whose decisions may have also been affected by the end of the Vietnam War, later research confirmed that the results were not sensitive to the choice of annual end-points or to the inclusion of males (Kane, 1994). Manski (1993) also reported little evidence of a disproportionate growth in BA completion by low-income youth graduating from high school between 1972 and 1980 (see also Kane, 2003).

One explanation for this apparent paradox is that low-income students and their families may be misinformed or not fully informed about the cost of college, about their eligibility for financial aid, and about the rules procedures associated with obtaining assistance. Ikenberry and Hartle (1998), for example, found that public estimates of tuition costs were three times the actual costs. Other research has confirmed that low-income youth considerably overestimate the cost of attending college (De La Rosa and Tierney, 2007; Tornatzky, Cutler, and Lee, 2002). Tierney and Venegas (2009) hypothesized that student actions are likely to follow from their misperceptions of college costs; i.e., they do not plan for college academically or financially if they do not believe they can access it (2009: 370). Current, on-going research is investigating the impact of providing precise information about the actual costs of college and the availability of aid to high-achieving, low-income, high school seniors (Hoxby and Turner, 2011).[5]

A second related explanation, discussed below, is that students from disadvantaged backgrounds lack information about how to complete their applications for college and financial aid (O'Conner,

[5] http://www.expandingcollegeopps.org/eco/about

2009).

Comprehensive Approaches to Increasing College Enrollment

Several federal programs currently exist that provide comprehensive, multi-year interventions to low-income students. These include, for example, the federal TRIO programs, which aim to improve student preparedness and increase college access and have been found to increase attendance rates for low-income and underrepresented minority students (Pitre and Pitre, 2009: 96). Among the TRIO programs is Upward Bound, which served 65,000 students in 2007, and the Talent Search program, which served 382,500 students in FY 2004 (Seftor et al., 2009; Constantine et al., 2004). The goal of programs such as these is to increase high school completion and college enrollment rates.

The Upward Bound program was extensively evaluated and found to have a modest positive impact on college enrollment. Established in 1965, Upward Bound enrolls students in ninth or tenth grade who have low scholastic achievement and demonstrate a high likelihood for school dropout (Myers and Schirm, 1999; Seftor et al., 2009). The program seeks to help these students prepare for and achieve success in postsecondary education through counseling, college application assistance, and supplemental academic instruction. The program was found to have significant impacts on college going—total postsecondary attendance was three percentage points higher and four-year college attendance was six percentage points higher for the treatment group than for the control group (Olsen, 2003). Longer-term analysis of the program effects found, however, that Upward Bound had "no detectable effect" on either the rate of post-secondary enrollment or the likelihood of applying for financial aid or receiving Pell grants. It did, however, increase post-secondary enrollment for some subgroups, e.g., students with lower educational expectations at baseline (Seftor, et al 2009: xiv-xv). Program costs, however, were relatively high at more than $4,700 per student per year for up to five years.

Another of the TRIO programs created in 1965, Talent Search, focuses on increasing low-income students' access to post-secondary education and serves more students than any other TRIO program (Cahalan et al., 2004). Talent Search incorporates two key informational components aimed at high school students: (1) information about the types of courses students should take in order to prepare for college; and (2) information about financial aid programs that can assist students in paying for college. Additionally, the program provides high school students with information about different types of colleges and the college application process as well as about the financial aid

application process for grants, loans and scholarships (Constantine et al., 2006). The resources devoted to each student are more modest than Upward Bound – around $400 per student per year (Seftor et al., 2009). Talent Search participants were found to have increased rates of financial aid application and enrollment in state colleges and universities (Constantine et al., 2006). These findings suggest that informational inputs like those provided by Talent Search can make a contribution to post-secondary access for low-income youth.

The format, timeframe, and impacts of these federal programs provided a starting point for the conceptualization and development of the SOURCE intervention that is the subject of this paper. A major goal of developing and testing this intervention was to investigate whether a less intensive and less expensive intervention that begins late in students' high school careers could achieve impacts similar to those of longer term, more comprehensive, and significantly more expensive college access interventions, especially if targeted to high school students whose academic records suggested that they were academically on track to meet the college admissions requirements of the University of California (UC) and California State University (CSU) systems. Following the hypothesis that low-income students may have difficulty navigating and completing the college and financial aid application processes, this alternative intervention focused exclusively on the high school to college transition – identifying, applying to, financing, and choosing an appropriate post-secondary institution. It did not provide academic supports or instruction. If such a streamlined program could have meaningful effects on college enrollment (and persistence), this would have implications for how to utilize limited resources to reach – and to promote college going among – a much larger group of students.

III. Overview Of The Source Program

The EdBoost Education Corporation, a nonprofit education service organization located in Los Angeles, developed and implemented the SOURCE Program. The program was conceptually based on the COACH program, an earlier high school-to-college transition program developed, implemented, and evaluated in Boston, Mass. (Kane and Avery, 2004). In the demonstration program described here, SOURCE provided 1,051 LAUSD high school juniors with an advisor to support, counsel, and oversee the college and financial aid identification, application, and admissions processes. The intent of the program was to help students understand their college options, the actual costs and benefits of attending and completing college, and the requirements of college admission and financial aid. The program also actively helped participants manage and complete

specific activities and milestones associated with the process of applying for college and financial aid. SOURCE cost approximately $1,000 per student to provide and administer, funds that were made available by the U.S. Department of Education's Institute of Education Sciences and the William T. Grant Foundation.

To provide college advising services to students selected for the program, the SOURCE staff recruited and trained 67 college advisors, themselves undergraduate or graduate students enrolled in local colleges and universities, and matched each of them with fifteen high school juniors. The advisors were both near-peer (e.g., similar in age, had attended LAUSD, and often of the same ethnicity, first in their family to attend college, and/or Spanish-speaking) and professional (e.g., paid, participated in required training, expected to follow an advising and reporting protocol, and could be dismissed).

Between May 2006 and May 2007, the advisors guided their students through a sequence of college and financial aid application steps including:

- Complete the SAT, PSAT, or ACT college admissions test with a sufficiently high score (including repeating the test as needed);
- Complete all high school coursework required for entry into a four-year California state university (known as the "A-G requirements"), with a sufficiently high grade point average to qualify for admission to the CSU system;[6]
- Draft and revise a college application essay (required for application to the University of California system);
- Develop a three-tiered list of colleges for application;
- Complete and submit applications to chosen schools before the deadline;
- Identify and complete applications for scholarships and financial aid, including filing the Free Application for Federal Student Aid (FAFSA) on time and accessing assistance with parents' tax preparation;
- Choose an appropriate college from among those to which students were accepted.

The program was designed so that advisors were not to offer significant material or academic assistance. They focused instead on providing advice and support, reminders, and encouragement to their advisees via regular contact, including in-person meetings, phone calls, emails, IM chats, texts,

[6] The CSU and UC systems require that students have a certain minimum high school GPA to qualify for admission and that they complete a particular sequence of courses in math, English, history, science, language other than English, etc – the so-called A-G requirements.

and other means. Because each advisor had approximately fifteen assigned students, his or her time with each student was necessarily limited. On average, each advisor spent 9.2 hours with each of his or her assigned students during the one-year intervention period.

EdBoost employed 67 advisors and three coordinators, two of whom also served as advisors, to implement the SOURCE program. Advisors received a monthly salary for their work, as well as bonuses tied to individual student achievement of various milestones. Although the SOURCE intervention depended to a great extent on the initiative and persistence of the advisors, they also received extensive training and supervision. EdBoost staff developed a detailed training curriculum and provided a series of six half-day trainings on key aspects of the college and financial aid application processes. They also guided advisors through specific strategies and techniques they could use to increase student engagement, participation, and success. The timing of these training sessions was linked to the sequence of college and financial aid application steps required during the program year, e.g., SAT taking, identifying appropriate colleges, drafting essays, submitting online applications, completing the FAFSA, and selecting a college to attend from those extending invitations. SOURCE also required that the advisors monitor students' participation and report weekly on each student's progress. Advisors entered information on these participation measures and benchmarks into a management information system (MIS) developed for SOURCE. The participation data used in the evaluation of SOURCE (and discussed below) were extracted from this MIS system.

In addition to offering the assistance of a college advisor and support for timely completion of college and financial aid applications, SOURCE provided participants and their parents with free tax preparation services for the 2006 tax year. In February 2007, program participants were offered vouchers for free tax preparation from H&R Block. Only a handful of participants, however, utilized this service. It appeared that most participants whose parents were filing a 2006 tax return had already done so and those who had not were either not attracted to the offer or failed to respond for other reasons.

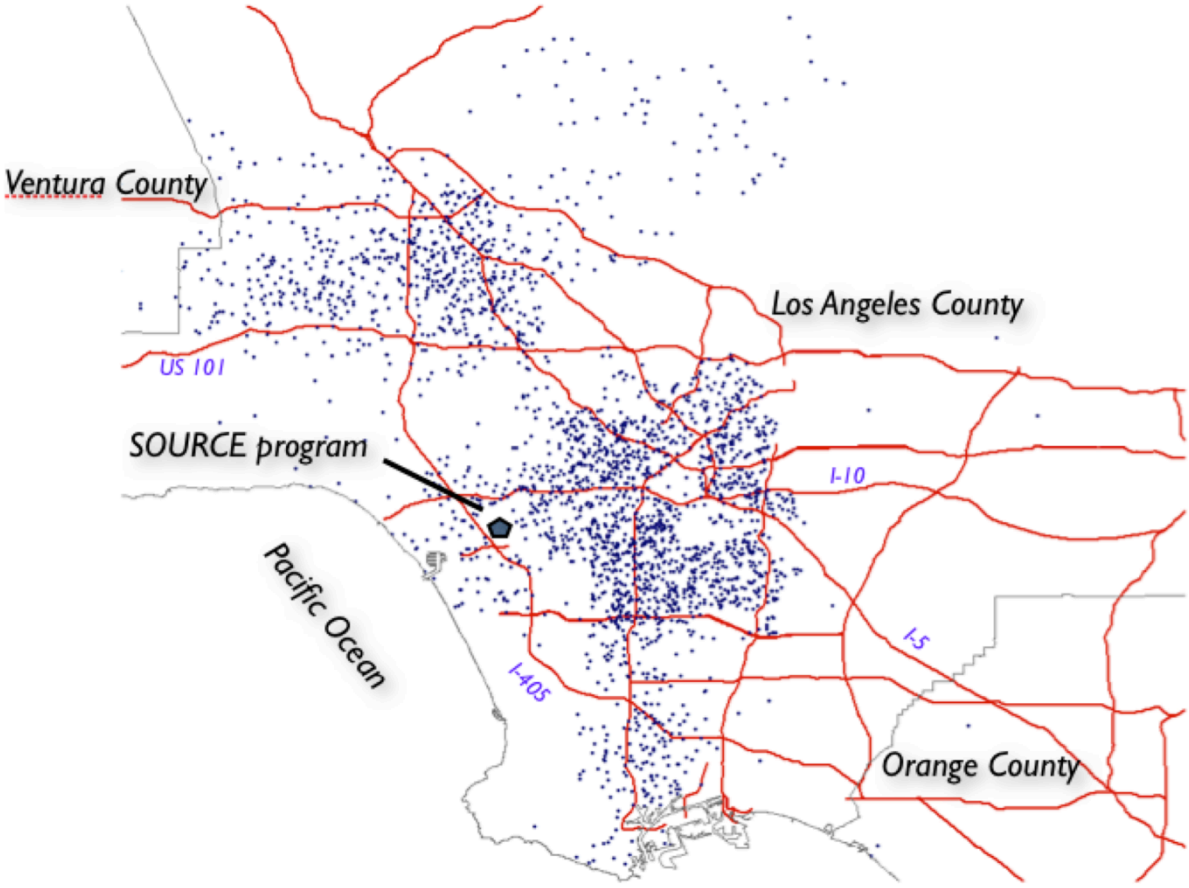
IV. Methods (Data And Estimation Strategy)

Study Sample

The study sample of 2,499 high school juniors was recruited from all LAUSD high schools. The pool of applicants reflected the geographic and ethnic diversity of the school district. Figure 1 shows the wide geographic distribution of the participating students in the City of Los Angeles.

Table 1 summarizes key background characteristics of the students who were recruited into the study. More than two-thirds of the students (69.5 percent) were female, which may reflect the interest of female students in the SOURCE program as it was described to them in the recruitment materials and may also reflect the distribution of female students within the Los Angeles Unified School District who met the SOURCE program's entry criteria.

Figure 1
Geographic Distribution of SOURCE Evaluation Sample Members



Source: SOURCE application data
Note: Each blue dot represents one sample member. Geographic location is approximate based on zip code. Sample members in outlying areas are depicted as living in the center of their zip code, which is not always close to their physical address.

A majority of the sample members (62.0 percent) identified themselves as Latino on the SOURCE enrollment form and 45.3 percent reported speaking Spanish as their first language**.** Black, non-Hispanic students were the next largest group of study participants at 12.8 percent of the sample, and Asian or Pacific Islander students were 12.4 percent of the sample. Ten percent of the sample was non-Hispanic whites.

The enrollment form included a number of questions about the students' plans for going to college and the steps taken to pursue these plans. When they applied to SOURCE in the early spring of their junior year, 74.0 percent of sample members reported having already taken the SAT, ACT, or PSAT at least once. As shown in Table 2, a considerable majority (63.5 percent) reported that it was "very likely" that they would enroll in a four-year college. Overall, 93.1 percent of the study sample reported that they were at least "somewhat likely" to attend a four-year college. Between 85.7 and 97.4 percent of students had completed the courses required by the program (Algebra 1, 9th and 10th grade English), with approximately 80 to 90 percent of them earning an A or B in these courses. At least 70 percent of SOURCE participants had earned a B or higher in Geometry, Biology, a foreign language, and/or World History. This suggests that the program recruited a sample of students who appeared on track academically to attend a four-year college and who expected and were motivated to enroll. At the same time, the sample characteristics suggest that the SOURCE program had to clear a 'high bar' to achieve meaningful impacts on college preparation and enrollment for this sample of students, most of whom were already motivated and academically ready to attend post-secondary education (as further corroborated by the control group survey results discussed below).

Table 1
Selected Background Characteristics of SOURCE
Evaluation Sample Members

Characteristic	
Gender	
Female (%)	69.7
Male (%)	30.3
Ethnicity	
Asian or Pacific Islander (%)	12.4
Black (%)	12.8
Latino (%)	62.0
White (%)	10.0
Primary language	
English (%)	47.2
Spanish (%)	45.3
Other (%)	7.5
Already took SAT, PSAT, or ACT at least once	74.0
Claimed to be very likely to attend a 4-year college (%)	63.5
Sample size	*2,499*

Source: SOURCE application data.

Recruitment and Random Assignment

The evaluation of the SOURCE program was designed and implemented as a randomized control trial (RCT). Student recruitment involved several activities conducted between November 2005 and February 2006. First, the LAUSD research department used administrative data to identify students who met the following criteria: (1) enrollment in a LAUSD high school; (2) status as a high school junior; (3) course distribution aligned with CSU requirements and on-track to graduate; and (4) a grade point average of 2.5 or higher. Using these criteria, LAUSD staff initially identified approximately 15,000 eligible students in the district to target for the program. EdBoost staff and the research team then designed a baseline data collection and informed consent form, which LAUSD then sent to all eligible students. Counting the initial and repeat mailings, LAUSD sent out some 60,000 recruitment letters and applications. In addition, EdBoost and research team members handed out flyers and baseline/informed consent forms at LAUSD college fairs and met with LAUSD high school college counselors and left forms with them to recruit participants. The letters and forms explained the eligibility requirements and offered students a chance to participate in the SOURCE program free of charge. In addition, the recruitment letters offered participating students a free movie ticket that would be mailed to the student's home address after receipt of the signed enrollment and consent form by the research team.

These recruitment efforts yielded responses from over 3,000 applicants, 2,499 of whom LAUSD research staff subsequently verified as eligible for the program and the study. Of these, 1,000 were randomly assigned to the intervention group and 1,499 were randomly assigned to the control group. A subsample of 150 control group members were randomly assigned to a waiting list to ensure that all 1,000 program slots would be filled with students who had been successfully contacted by a SOURCE advisor. The 1,349 control group students who were not on the waiting list received a rejection letter together with their movie ticket. They also were told that they would be contacted twice in coming years by a survey research firm and would be compensated for participating in follow-up surveys. The rejection letter ensured the students that their eligibility for college enrollment, financial aid, and other college support services was unaffected by their assignment to the SOURCE control group.

As soon as the 1,000 intervention group students were identified, the SOURCE program staff assigned them to an advisor based on such practical considerations as travel distance between the advisor's home and the high school the students attended. In matching advisors to students the SOURCE program staff also considered gender and language spoken at home (although they were not always able to match all advisor-student pairs on these dimensions). Each advisor was assigned

15 advisees and was asked to contact them by phone within two weeks of random assignment, which took place April 3, 2006. If all attempts to contact a student within the initial two-week period failed, EdBoost staff assigned the advisor a replacement student from the waiting list of 150 control group students. Altogether, 41 waitlisted students were assigned to the intervention group during the first several weeks after random assignment, after which the remaining 109 were sent their rejection letters. None of the waitlisted students was notified of their status until the final resolution of their status. No students, even those who were non-responsive, were dropped from the study. The final sample size for the impact analysis was thus 1,051 intervention group members and 1,448 control group members.[7]

Data and Data Collection

The impact analysis used six different data sources: (1) demographic and educational aspiration information collected at application; (2) administrative program data (MIS participation data) from the SOURCE program; (3) LAUSD administrative data on high school completion, GPA, and SAT outcomes; (4) a control group follow-up survey conducted shortly after expected high school graduation or 16 to 19 months after random assignment (fielded June – September 2007; response rate 87 percent); (5) a full sample follow-up survey conducted one year after expected high school graduation or 27 to 31 months after random assignment (response rate 82.0 and 85.5 percent for intervention and control groups, respectively), and (6) three years of college enrollment data from the National Student Clearinghouse (NSC), collected beginning 25 months after random assignment (March 2008; December 2009, and May 2010).[8] Together, these data sources enabled us to describe in detail the program experiences of SOURCE participants, the treatment contrast between the intervention and control group, and the high school and post-high school outcomes of intervention and control group members for three years.[9]

In addition, the research team conducted extensive qualitative and quantitative implementation research, using two waves of individual interviews with SOURCE program staff, focus groups with 30 of the 67 advisors, direct observations of advisor training sessions, review of program training and participant materials, and an advisor survey (fielded May – June 2007; response

[7] All 41 intervention group members who were not successfully contacted during the first several weeks remained in the intervention group for analytical purposes and several later joined the SOURCE program.
[8] The NSC is a non-profit entity that maintains an electronic registry of 100 million student records. NSC also compiles and disseminates enrollment data from 3300 post-secondary schools, representing 92 percent of colleges in the U.S. For further information, please see http://www.studentclearinghouse.org/.
[9]Further long-term follow-up data collection from the NSC is planned.

rate 100 percent).

Analysis

The statistical procedures used to estimate program impacts include multiple regression for continuous outcomes and *Probit* analysis for discrete outcomes. Standard multiple imputation procedures were used to impute missing background and outcome data. All analyses were done using *Stata* software. After merging baseline, survey, NSC, and LAUSD data, we estimated regression-adjusted impacts for all outcome variables with a linear regression model in which the outcome variable was regressed on a 0/1 SOURCE program dummy variable and a series of baseline covariates.[10] Including these baseline covariates increased the statistical precision of the impact estimates.[11] We estimated impacts of the SOURCE program on high school graduation, GPA, SAT taking, college application, overall college enrollment, UC or CSU enrollment, 2- and 4-year college enrollment, FAFSA submission, application for and receipt of CalGrants and other scholarships, paying for college with grants and scholarships, and paying for college with loans.

V. Results

Program Participation and Treatment Contrast

The SOURCE program was designed to provide persistent and focused support of a relatively low intensity throughout the program year, beginning in the last months of the participants' junior year in high school and ending near the end of the participants' senior year. The advisors were not expected to spend a large amount of time working with each of the fifteen students assigned to them but rather to provide ongoing support and advice, as well as actual technical assistance with on-line college and financial aid applications as needed. The advisors were also expected to stay in touch with each student on a weekly basis, even if just via a short phone call or text message.

The program participation data reflect overall achievement of these objectives. As shown in Table 2, the large majority of SOURCE participants (81.1 percent) participated in at least one in-

[10] Covariates included race/ethnicity; whether the student reported that he or she was likely to attend college at baseline; whether the student had a sibling in college; whether either of the student's parents was a college graduate; the student's age at random assignment; and whether Spanish was the student's primary language.

[11] We examined how the inclusion of baseline variables affected the point estimates presented in this paper and whether doing so changed the conclusions about the SOURCE program. The effects of including the covariates were found to be minimal and inconsequential to the interpretation of the findings. Differences in baseline characteristics between the intervention and control group were not statistically significant.

person meeting with their assigned advisor and 90.5 percent of the participants had at least one telephone meeting with their advisor. Advisor interviews and participation data indicated that other forms of contact (e.g., emails, texts, IM conversations, and contact via social networking sites) also constituted important channels of advisor/student contact. Approximately 9 percent of the students assigned to the SOURCE program had no contact at all with their assigned advisor or were never found after random assignment. Among those who participated, each received, on average, 11.1 hours of direct program service. These hours are considerably lower than those found for other high school to college transition programs.

Table 2
Selected SOURCE Program Participation Measures

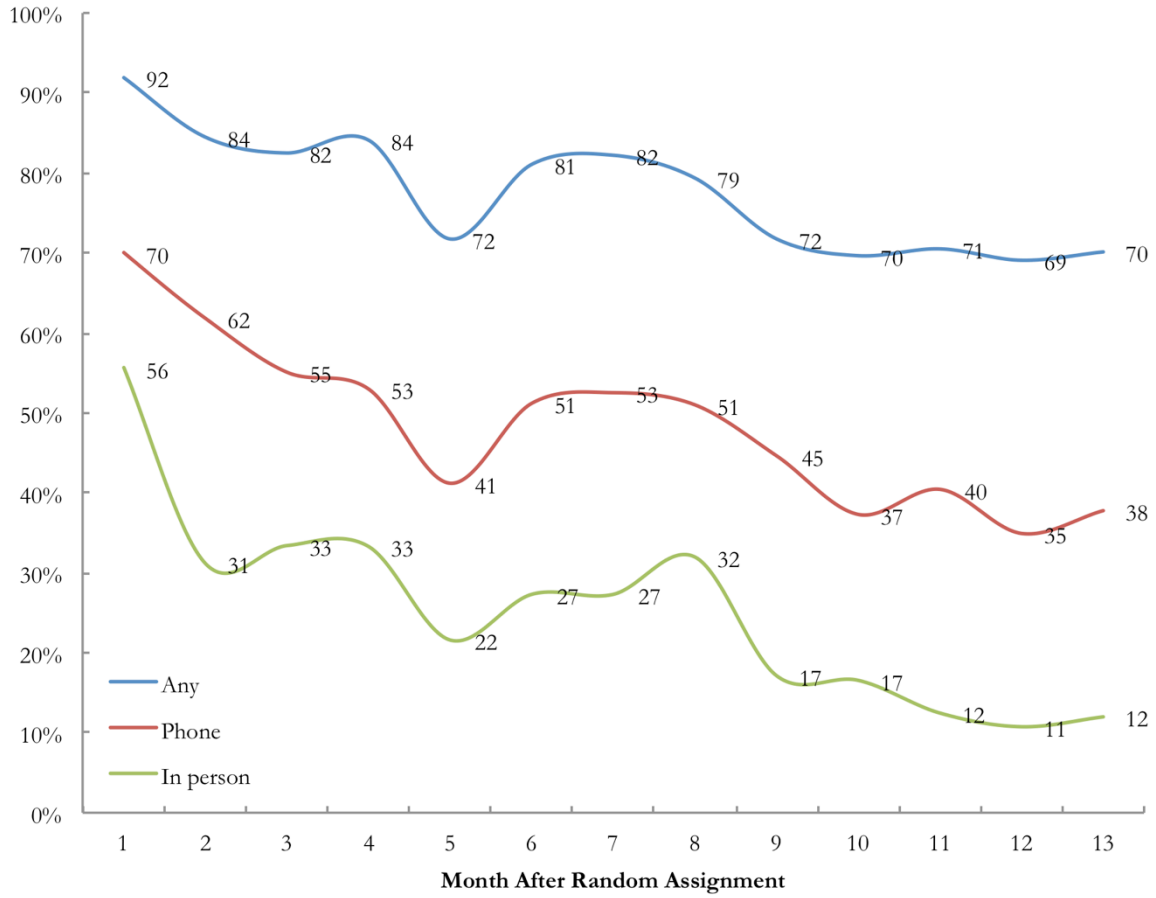
	Participation measure	Participation measure for those who participated
Advisor ever: (% of students)		
Met with student in person	81.1	n/a
Met with student by phone	90.5	n/a
Exchanged email with student	71.2	n/a
Met with student's parent(s)	37.0	n/a
Visited student's school	47.2	n/a
Number of contacts per student		
In-person meetings	4.2	5.2
Telephone conversations	11.5	12.7
Email exchanges	5.3	7.4
Meetings with parents	1.0	2.7
Contact time per student (hrs.)		
In-person meetings (1.5 hrs/meeting)	6.3	7.8
Telephone conversations (10 min/call)	1.9	2.1
Email exchanges (10 min/exchange)	0.9	1.2
Total estimated contact time	9.1	11.1
Sample size	*1,051*	*Varies*

Source: SOURCE management information data.

Once advisors had established contact with their students, they managed to remain in touch with most of them throughout the program year. As illustrated in Figure 2, which shows monthly rates of interaction between advisors and students, 70 percent of the advisors continued to be in contact with their students in April 2007 (Month 13), the last official month of the SOURCE program.[12]

[12] Implementation data show that many advisors and students formed strong bonds and intended to stay in touch after the program ended. The program did not, however, track continued engagement nor compensate for continued advising.

Figure 2
Monthly Rate of Being Contacted by SOURCE Advisor



Source: SOURCE management information data.

Throughout the program year, the average SOURCE participant had 4.2 in-person meetings, 11.5 telephone meetings, and 5.3 email exchanges with his or her advisor. In addition, on average, SOURCE advisors met with the parents of each of their assigned students once. (This translates into almost three parental visits on average for the 37 percent of students whose parents were visited).

Control Group Outcomes: A High Bar

In evaluating the impacts of the SOURCE Program it is important to understand the very high level of engagement and achievement of control group members in the study sample. Their receipt of non-SOURCE college-related services and advising coupled with their post-secondary ambitions suggests that SOURCE had only a relatively small margin in which to have an additional impact on college outcomes.

As indicated above, shortly after expected high school graduation, control group members were contacted to participate in a survey to report on their receipt of alternative services and their college preparation and application activities during their senior year. Table 3 shows that by the end of their senior year in high school, 93.7 percent of control group members reported having applied to college. More than three out of four of these students (76.3 percent) reported having applied to a UC or CSU four-year college.

Table 3
College Application and Related Service Receipt among Control Group Members
As Reported at the End of their Senior Year in High School

Outcome	
Services received during high school	
Met with high school counselor (%)	77.2 %
Met with other college advisors (%)	66.6
Participated in a program like Upward Bound or Talent Search (%)	24.1
Received tutoring (%)	20.7
Received help with college essay writing (%)	54.3
Participated in SAT preparation program (%)	42.6
Preparation for college application	
Took SAT Reasoning Test (SAT I) (%)	85.6
Took SAT Reasoning Test (SAT II) (%)	61.2
Took PSAT (%)	79.7
Took ACT (%)	41.5
Attended a college fair (%)	70.8
Visited colleges (%)	80.7
Plans for college attendance	
Applied to college (%)	93.7
Applied to CSU or UC (%)	76.3
Sample size	*1,262*

Source: First follow up survey of control group students.

Toward achieving these goals, control group members reported receiving a variety of supports and services, in spite of their ineligibility for the SOURCE program. Almost one in four (24.1 percent) reported participating in a federally funded Upward Bound or Talent Search program; 77.2 percent reported meeting with their high school counselor to discuss the college application process; and 66.6 percent reported meeting with other types of college advisors. If these college advisors provided services similar to those available through the SOURCE program, the treatment contrast created by this evaluation of SOURCE would be limited, both in the scope of services provided and in the extent to which students were supported who otherwise would not have received such services.

Impacts on High School and SAT Outcomes

Table 4 displays the estimated impact of the intervention on several outcomes reported in LAUSD administrative data. The table shows that, with the exception of some small impacts on SAT taking, SOURCE did not impact students' high school outcomes. SOURCE participants and control group members had similar course taking patterns (not shown in table), were equally likely to graduate from high school, and had a similar grade point average when they did. The LAUSD data did show a small but statistically significant impact on the percentage of students taking the SAT as recorded by the school district, which the program increased from 78.3 to 82.5 percent.

Table 4
SOURCE Impacts on High School Outcomes:

Outcome	SOURCE participants	Control group	Difference	p-value	Effect size
SAT outcomes					
Took SAT Verbal, Math, and Writing (%)	82.6	78.3	4.2 ***	0.008	0.11
SAT score	900	911	-10	0.198	-0.05
Graduation outcomes					
Graduated from high school (%)	89.9	91.8	-1.9	0.105	-0.07
Grade Point Average	3.06	3.07	-0.01	0.593	-0.02
GPA 3.0 or higher (%)	58.2	59.0	-0.8	0.686	-0.02
Eligible to attend CSU (%)	75.3	74.8	0.5	0.753	0.01
Sample size	*1,038*	*1,438*			

Source: Administrative data obtained from the Los Angeles Unified School District.
NOTES: Calculations used data for all sample members for whom there were follow-up data, including those with values of zero for outcomes and those who were assigned to SOURCE but did not participate. Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members. Rounding may cause slight discrepancies in the calculations of sums and differences. Effect sizes are calculated by dividing the SOURCE participants-control group difference by the standard deviation of the outcome for the control group.
A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels are indicated as ***= 1 percent; **=5 percent; *=10 percent.

Not shown in the table, this impact on SAT taking was more pronounced among students whose primary language was Spanish and students whose parents did not attend college. For the former subgroup, the impact on SAT taking was 9.5 percentage points (an increase from 73.1 to 82.6 percent) and for the latter subgroup, this impact was 6.6 percentage points (an increase from 74.2 to 80.8 percent). This is an important first indication, as discussed further below, that SOURCE was most helpful to these specific subgroups of students, which, compared to other students in the sample, may have lacked information and college application resources at home.

Impacts on College Enrollment

Table 5 presents impact estimates on first-year college application enrollment based on student self report and on data from the National Student Clearinghouse (NSC). Self-reported levels of college enrollment (not shown in the table) were considerably higher than those found in the NSC data, which may reflect the fact that the NSC does not capture enrollment at all post-secondary institutions that students may refer to as "college". (In 2010, toward the end of this study's follow-up period, researchers estimated NSC coverage to be 93 percent of all post-secondary institutions in the U.S.; Cook and Pullaro, 2010). The table shows that, 18 months after high school graduation, 96.2 percent of SOURCE participants and 93.6 percent of control group members reported having applied to college. This small impact of 2.6 percentage points reduced the proportion of sample members who reported not applying to college from 6.4 to 3.8 percent.

Table 5
SOURCE Impacts on College Application and Enrollment during the Year Following Expected High School Completion

Outcome	SOURCE participants	Control group	Difference	p-value	Effect size
Reported applying to college (%)	96.6	94.1	2.5 ***	0.007	0.11
Enrolled in college (%)	75.7	74.9	0.8	0.661	0.02
Enrolled in a 2-year college (%)	38.7	39.6	-0.9	0.646	-0.02
Enrolled in a 4-year college (%)	55.8	52.2	3.5 *	0.092	0.07
Enrolled in California State University (%)	23.9	25.8	1.9	0.291	0.04
Enrolled in University of California (%)	16.7	19.3	2.5	0.109	0.06
Enrolled in UC or CSU (%)	46.7	42.3	4.4 **	0.032	0.09
Sample size	*1,051*	*1,448*			

Source: One-year follow-up survey and National Student Clearinghouse Data.

NOTES: Calculations used data for all sample members for whom there were follow-up data, including those with values of zero for outcomes and those who were assigned to SOURCE but did not participate. Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members. Rounding may cause slight discrepancies in the calculations of sums and differences. Effect sizes are calculated by dividing the SOURCE participants-control group difference by the standard deviation of the outcome for the control group.

A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels are indicated as ***= 1 percent; **=5 percent; *=10 percent.

The subsequent follow-up data from the NSC found that 75.7 percent of SOURCE participants had enrolled in a post-secondary institution covered by the NSC compared to 74.9 percent of their counterparts in the control group. The difference was not statistically significant. The table shows that there was no impact on two-year college enrollment (38.7 percent of SOURCE participants and 39.6 percent of control group members) but that SOURCE increased four-year college enrollment by 3.5 percentage points, from 52.2 to 55.8 percent. This difference was marginally statistically significant and translated into an effect size of 0.07 standard deviations. As

expected, the impact on four-year college enrollment was more pronounced for enrollment into CSU and UC institutions, because increasing enrollment into these public four-year universities was an important objective of the SOURCE program. The program increased UC/CSU enrollment from 42.3 to 46.7 percent, an effect size of 0.09 standard deviations. Conversely, it did not have an impact on enrollment in other four-year institutions.

Table 6 shows how the SOURCE program's impact on four-year college enrollment in the 2007-08 academic year varied across key student subgroups. The impact was concentrated among Spanish-speaking students and students whose parents had not attended college. For these two groups, the corresponding effect sizes on four-year college enrollment were 0.21 and 0.12.

Table 6
SOURCE Impacts on College Enrollment:
Full Sample and Selected Subgroups

Outcome	SOURCE participants	Control group	Difference	p-value	Effect size
		Full Sample			
Enrolled in 4-year college (%)	55.8	52.2	3.5	0.092	3.50
Enrolled in UC or CSU (%)	46.7	42.3	4.4 **	0.032	4.40
Sample size	*1,051*	*1,448*			
		Students Whose Primary Language is Spanish			
Enrolled in 4-year college (%)	51.0	40.4	10.6 ***	0.001	0.21
Enrolled in UC or CSU (%)	43.9	34.5	9.4 ***	0.002	0.19
Sample size	*471*	*658*			
		Students Whose Primary Language is Not Spanish			
Enrolled in 4-year college (%)	60.0	62.3	-2.3	0.400	-0.05
Enrolled in UC or CSU (%)	49.6	48.9	0.6	0.823	0.01
Sample size	*580*	*790*			
		Students Whose Parents Attended College			
Enrolled in 4-year college (%)	60.0	66.0	-5.9	0.214	-0.12
Enrolled in UC or CSU (%)	47.6	47.7	-0.1	0.983	0.00
Sample size	*202*	*260*			
		Students Whose Parents Did Not Attend College			
Enrolled in 4-year college (%)	55.4	49.3	6.1 ***	0.009	0.12
Enrolled in UC or CSU (%)	47.1	41.1	6.0 ***	0.008	0.12
Sample size	*849*	*1,188*			

Source: National Student Clearinghouse data.

NOTES: Calculations used data for all sample members for whom there were follow-up data, including those with values of zero for outcomes and those who were assigned to SOURCE but did not participate. Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members. Rounding may cause slight discrepancies in the calculations of sums and differences. Effect sizes are calculated by dividing the SOURCE participants-control group difference by the standard deviation of the outcome for the control group.

A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels are indicated as ***= 1 percent; **=5 percent; *=10 percent.

Impacts on the Application for and Use of Financial Aid

Improving students' access to and information about financial aid options was an important objective of the SOURCE program. The follow-up survey conducted 18 months after students' expected high school graduation (at the end of their freshman year in college) captured sample members' use of loans, scholarships, and other financial supports for college. As shown in Table 7, 87.8 percent of SOURCE participants and 84.0 percent of control group members reported submitting a FAFSA before enrolling in college. The SOURCE impact of 3.8 percentage points was statistically significant, representing an effect size of 0.11 standard deviations.

Table 7 also indicates that 67.4 percent of SOURCE participants reported receiving grants and scholarships, compared to 62.6 percent of their counterparts in the control group. The difference of 4.8 percent was statistically significant and translated into an effect size of 0.10. Conversely, there was no statistically significant difference between the percentage of SOURCE participants and control group members who reported paying for college with student loans (as respectively 28.8 and 29.8 percent of the program and control group members reported).

Estimated impacts on FAFSA submission among key subgroups are also presented in Table 7. The program had its greatest impact on FAFSA submission among students whose primary language was not Spanish and among students whose parents did not attend college.[13] Among these two subgroups, the program increased receipt of grants and scholarships by 6.0 and 5.3 percentage points, respectively, for respective effect sizes of 0.13 and 0.11 standard deviations.

[13] This finding is an exception to the pattern in most of our other impact analyses, which generally found larger impacts for students whose primary language was Spanish than for students for which it was not.

Table 7
SOURCE Impacts on Application for and Use of Financial Aid:
Full Sample and Selected Subgroups

Outcome	SOURCE participants	Control group	Difference	p-value	Effect size
		Full Sample			
Reported submitting a FAFSA (%)	87.8	84.0	3.8 **	0.014	0.11
To pay for college, reported using:					
Grants and scholarships (%)	67.4	62.6	4.8 **	0.027	0.10
Loans (%)	28.8	29.8	-1.1	0.605	-0.02
		Students Whose Primary Language is Spanish			
Reported submitting a FAFSA (%)	83.8	80.1	3.7	0.142	0.10
To pay for college, reported using:					
Grants and scholarships (%)	67.2	63.5	3.6	0.258	0.08
Loans (%)	22.8	24.7	-1.9	0.508	-0.04
		Students Whose Primary Language is Not Spanish			
Reported submitting a FAFSA (%)	90.7	87.1	3.6 *	0.056	0.10
To pay for college, reported using:					
Grants and scholarships (%)	68.0	62.0	6.0 **	0.040	0.13
Loans (%)	33.9	34.6	-0.7	0.806	-0.02
		Students Whose Parents Attended College			
Reported submitting a FAFSA (%)	89.6	83.2	6.3 *	0.082	0.17
To pay for college, reported using:					
Grants and scholarships (%)	63.4	61.2	2.2	0.675	0.05
Loans (%)	34.0	35.6	-1.7	0.737	-0.04
		Students Whose Parents Did Not Attend College			
Reported submitting a FAFSA (%)	87.5	84.5	3.0 *	0.084	0.08
To pay for college, reported using:					
Grants and scholarships (%)	68.3	63.0	5.3 **	0.027	0.11
Loans (%)	27.5	28.7	-1.2	0.596	-0.03
Sample size	*873*	*1,244*			

Source: One-year follow-up survey.

NOTES: Calculations used data for all sample members for whom there were follow-up data, including those with values of zero for outcomes and those who were assigned to SOURCE but did not participate. Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members. Rounding may cause slight discrepancies in the calculations of sums and differences. Effect sizes are calculated by dividing the SOURCE participants-control group difference by the standard deviation of the outcome for the control group.

A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels are indicated as ***= 1 percent; **=5 percent; *=10 percent.

Persistence in College

We collected NSC monthly enrollment data through the students' third year following high school graduation to estimate program impacts on persistence in college attendance over time. These data included information on the type of college students were enrolled in (two-year vs. four-

year) and whether they were enrolled in college in specific systems such as the CSU or UC system. NSC data also provided information on transfer from a two-year to a four-year college. Table 8 shows the college enrollment status of sample members as of October of their expected junior year in college (October 2010). At that time 60.8 percent of SOURCE participants and 59.4 percent of control group members were still enrolled in college**.** Rates of four-year college enrollment at that time were 43.9 percent and 40.5 percent of SOURCE participants and control group members, respectively. The program continued to impact enrollment in the University of California or the California State University, with 35.9 percent and 31.5 percent of SOURCE participants and controls being enrolled, respectively. The 4.5 percentage point difference (an effect size of 0.10) was statistically significant.

Table 8
SOURCE Impacts on Longer-Term College Attendance and Persistence

Outcome	SOURCE participants	Control group	Difference	p-value	Effect size
In October of their expected junior year in college, enrolled in: (%)					
Any college	60.8	59.4	1.4	0.497	0.03
Two-year college	15.8	17.5	-1.6	0.289	-0.04
Four-year college	43.9	40.5	3.3	0.106	0.07
California State University	17.5	16.1	1.5	0.325	0.04
University of California	16.4	13.7	2.6 *	0.073	0.07
CSU and/or UC	35.9	31.5	4.5 **	0.022	0.10
In the 36 months following the month of expected HS graduation, months enrolled in:					
Any college	19.0	18.7	0.3	0.562	0.02
Two-year college	5.2	5.8	-0.6	0.101	-0.06
Four-year college	13.9	12.9	1.0 *	0.071	0.07
California State University	6.0	5.5	0.5	0.255	0.05
University of California	5.6	4.8	0.8 *	0.066	0.07
CSU and/or UC	11.6	10.3	1.3 **	0.016	0.10
Transfered from a two-year college to a four-year college (%)	12.6	11.6	1.0	0.432	0.03
Sample size	*1,051*	*1,448*			

Source: National Student Clearinghouse Data.

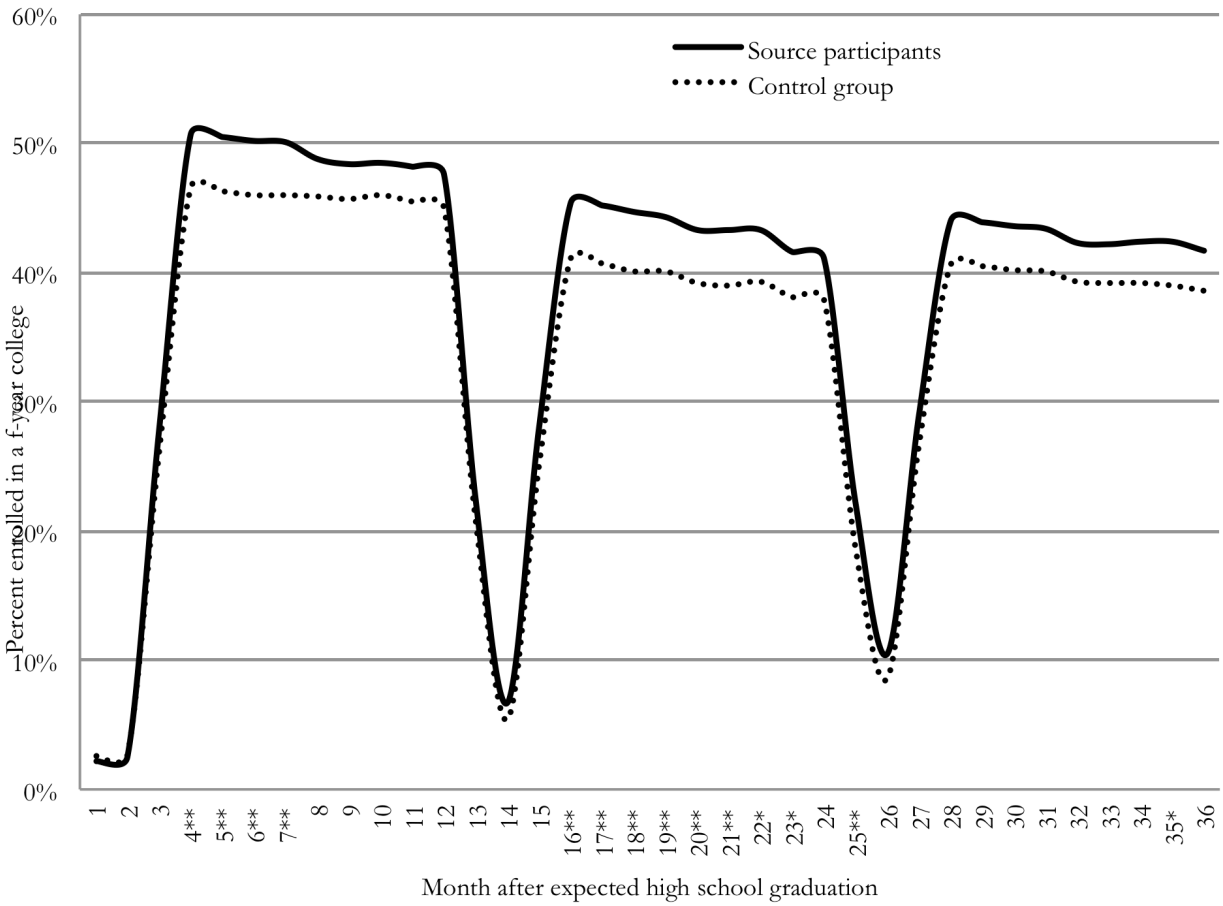
NOTES: Calculations used data for all sample members for whom there were follow-up data, including those with values of zero for outcomes and those who were assigned to SOURCE but did not participate. Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members. Rounding may cause slight discrepancies in the calculations of sums and differences. Effect sizes are calculated by dividing the SOURCE participants-control group difference by the standard deviation of the outcome for the control group.

A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels are indicated as ***= 1 percent; **=5 percent; *=10 percent.

The second panel of Table 8 presents SOURCE's impacts on college enrollment as a continuous variable counting the number of months during which students were enrolled in college during the 36-month follow-up period. The SOURCE program increased four-year college enrollment by 1 month, UC enrollment by 0.8 months and combined CSU/UC enrollment by 1.3 months. The latter represents an increase of approximately 12.6 percent for an effect size of 0.10.

A different way to illustrate these effects over time is by presenting them in a continuous time trend, as is done, for four-year college enrollment, in Figure 3. The figure shows how intervention-control group differences persisted over three post-high school graduation college years. Months in which the intervention-control group difference was statistically significant are flagged on the figure's horizontal axis. The differences were statistically significant in 14 out of 36 months.

Figure 3
Monthly Rate of 4-Year College Enrollment



Source: National Student Clearinghouse
A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels for individual months are indicated on the horizontal axis as ***= 1 percent; **=5 percent; *=10 percent.

Lastly, Table 9 presents program impacts on longer-term college attendance outcomes for the subgroups introduced before. Consistent with our findings for the first year of follow-up, longer-term SOURCE impacts were concentrated among students whose primary language was Spanish and students whose parents did not attend college. In October of the students' expected junior year in college (October 2010), 37.8 percent of SOURCE participants whose primary language was Spanish were still enrolled in a four-year college, compared to 30.6 percent of their counterparts in the control group. The difference was statistically significant and represented an effect size of 0.15. At the end of the three-year follow-up period, SOURCE participants whose primary language was Spanish has accumulated 12.4 months of four-year college attendance on average, compared to 10.1 months for their control group counterparts, for an effect size of 0.17. These impacts were significantly different from those estimated for students whose primary language was not Spanish. For that group, the average attendance rates were considerable higher (as high as 49.1 percent for control group members in October 2010, their expected junior year), but intervention-control group differences were essentially nonexistent.

The bottom half of the table shows a similar pattern of impacts for students divided by whether one or both of their parents attended college. All effects of SOURCE were concentrated among students whose parents did not attend college, with no statistically significant impacts for students whose parents had attended college.

VI. Discussion

The results presented here highlight both the potential and the challenges of offering college transition mentoring support to economically disadvantaged high school students. With an investment of $1,000 per participating student, the SOURCE program was able to recruit, train, and employ a pool of highly motivated university students to provide a year's worth of continuous mentoring and college advisement services to a diverse group of Los Angeles high school students. The advisors established lasting mentoring relationships with most of the high school students assigned to them, monitoring their efforts to prepare for college, assisting with financial aid applications, and seeking to broaden the range of colleges, universities, and aid for which they applied.

Table 9
SOURCE Impacts on Longer-Term College Attendance and Persistence
Full Sample and Selected Subgroups

Outcome	SOURCE participants	Control group	Difference	p-value	Effect size
Full Sample					
In October of their expected Junior year in college, enrolled in 4-year college (%)	43.9	40.5	3.3	0.106	0.07
In the 36 months following the month of expected HS graduation, months enrolled in 4-year college	13.9	12.9	1.0 *	0.071	0.07
Sample size	*1,051*	*1,448*			
Students Whose Primary Language is Spanish					
In October of their expected Junior year in college, enrolled in 4-year college (%)	37.8	30.6	7.2 **	0.014	0.15
In the 36 months following the month of expected HS graduation, months enrolled in 4-year college	12.4	10.1	2.3 ***	0.004	0.17
Sample size	*471*	*658*			
Students Whose Primary Language is Not Spanish					
In October of their expected Junior year in college, enrolled in 4-year college (%)	48.9	49.1	-0.2	0.956	0.00
In the 36 months following the month of expected HS graduation, months enrolled in 4-year college	15.1	15.2	0.0	0.969	0.00
Sample size	*580*	*790*			
Students Whose Parents Attended College					
In October of their expected Junior year in college, enrolled in 4-year college (%)	50.9	56.2	-5.3	0.281	-0.11
In the 36 months following the month of expected HS graduation, months enrolled in 4-year college	15.2	16.5	-1.3	0.300	-0.09
Sample size	*202*	*260*			
Students Whose Parents Did Not Attend College					
In October of their expected Junior year in college, enrolled in 4-year college (%)	42.2	37.1	5.1 **	0.026	0.10
In the 36 months following the month of expected HS graduation, months enrolled in 4-year college	13.6	12.1	1.5 **	0.012	0.11
Sample size	*849*	*1,188*			

Source: National Student Clearinghouse Data.

NOTES: Calculations used data for all sample members for whom there were follow-up data, including those with values of zero for outcomes and those who were assigned to SOURCE but did not participate. Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members. Rounding may cause slight discrepancies in the calculations of sums and differences. Effect sizes are calculated by dividing the SOURCE participants-control group difference by the standard deviation of the outcome for the control group.

A two-tailed t-test was applied to differences between the SOURCE participants and control group. Statistical significance levels are indicated as ***= 1 percent; **=5 percent; *=10 percent.

The logistics of providing these services posed a considerable challenge. Advisors spent much of their time establishing and maintaining regular contact with their students, keeping track of their students' progress, and reporting on that progress to the SOURCE program. They spent comparatively little time in actual face-to-face meetings with their students or the students' parents. As a result, the intensity of the SOURCE program, as experienced by participants, was relatively modest, mostly consisting of a string of frequent contacts, mostly by phone or text message, which were relatively short in duration.

A key question for this evaluation was whether the modest amount of actual counseling received by the average participant was sufficient to make a meaningful difference in their college outcomes. The program appears to have done so, but the impacts were modest and not evenly experienced by all participants. The program did not increase post-secondary enrollment or persistence overall but did have a positive impact on participants' enrollment in 4-year colleges and in California's CSU and UC colleges, which represent the most affordable 4-year college option for most California college students. In the first year after their high school graduation, the program increased participants' enrollment in a 4-year college by 3.5 percentage points (from 52.2 to 55.8 percent). One way to think about this is that 37 of the 1,051 SOURCE participants enrolled in a 4-year college when they would not have done so without the program. If this were the only impact of the program and none of the other participants experienced any benefits, the cost of such an achievement would have been approximately $27,000 per student.

There are two reasons why such an interpretation of the findings presented here is overly negative. The first is that the program's impact on 4-year college enrollment is only one way in which it benefited students. We found that this initial impact was sustained through the full three-year follow-up period, which is rare in evaluations like these. Programs that expand the pool of students who enter post-secondary education typically have relatively short-term effects because the newly added students are less prepared for college than their peers and experience greater financial and logistical barriers to their continued enrollment. In the case of the SOURCE program, the impact on 4-year college enrollment was sustained for at least three years with the exact same effect size of 0.07 at 29 months as we found two years earlier. The likely reason for this persistence in the modest program effects we found is that students were provided not just with support and encouragement to get into a 4-year college but also with practical and financial advice concerning which college to enroll in, how to pay for it, and how to qualify for grants and scholarships. This resulted in a small but statistically significant increase in the share of students who paid for college

with grants and scholarships, which make it more likely that students persist in college and reduce their financial burden upon graduation.

The second reason why the findings we presented are a conservative estimate of the potential effect of programs like SOURCE is that our evaluation took place in a highly service-rich environment. As we discussed, many of the control group members we recruited for this evaluation had access to a similar set of college-access services and were similarly motivated as the SOURCE participants to enroll in a 4-year college. This suggests that a program like SOURCE might make a bigger difference if it were targeted at a population of students with fewer of such resources. Our subgroup analyses reinforce that interpretation. Among students whose primary language was Spanish, the program increased initial 4-year college enrollment from 40.4 to 51.0 percent. This means that among the 471 SOURCE participants in this subgroup, 50 enrolled in a 4-year college who would not have done so without the program. Better targeting of the program on students in greatest need of the support and advice it offered may significantly increase the overall benefits and cost-effectiveness of interventions like these

The promising and persistent findings presented here suggest that the SOURCE program model, which uses professionally trained and paid college student mentors, is promising and deserves to be replicated on a larger scale. As post-secondary education and degree attainment continue to increase in importance in the global economy, affordable and scalable programs like SOURCE have the potential to improve the outcomes of disadvantaged students, the quality and skills of the U.S. workforce, and the strength of the U.S. and global economies.

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