Abstract Title Page
Not included in page count.

Do College-Ready Students Benefit When High Schools and Colleges Collaborate? Experimental Evidence from Albuquerque, New Mexico

Benjamin L. Castleman
University of Virginia

Laura Owen
San Diego State University

Lindsay C. Page
University of Pittsburgh

Abstract Body

Limit 4 pages single-spaced.

Background / Context:

Description of prior research and its intellectual context.

Though the economic and non-pecuniary benefits of postsecondary education continue to grow, disparities in college access and success by family income, race/ethnicity, and gender have only widened over time (Bailey & Dynarski, 2012; Goldin, Katz, & Kuziemko, 2006). Responding to these inequalities has emerged as a top policy priority, as evidenced by the White House Summit on Expanding College Opportunity that President Obama hosted in January 2014. Within this context, recent research has focused on the role of information and access to college advising in whether academically-accomplished students successfully matriculate at colleges and universities that are well-matched to their abilities (Castleman, 2013; Castleman & Page, forthcoming; Hoxby & Avery, 2013; Scott-Clayton, 2012). For instance, a substantial share of academically-accomplished, college-intending high school graduates succumb to "summer melt" and fail to enroll anywhere in the year following high school, or do not attend the quality of institution (measured, for instance, by graduation rates) at which they have the academic credentials to be admitted (Castleman & Page, 2013a; Hoxby & Avery, 2013; Smith, Pender, & Howell, 2012). Relatedly, providing students with personalized information about college and financial aid and/or the offer of additional college advising can generate substantial improvements in college access and persistence, at a low cost per student served (Castleman & Page, 2013b; Castleman, Page, & Schooley, 2014; Hoxby & Turner, 2013).

To date, the summer melt and academic mismatch literature has focused largely on college-ready *low-income* students. Yet, under-represented students more broadly may struggle to follow through on their colleges intentions and may therefore benefit from additional information and personalized support in order to realize these goals. Specifically, students of color—and particularly male students of color—may not feel a sense of belonging at postsecondary institutions if they perceive colleges and universities to be primarily the domain of affluent, white students (Walton & Cohen, 2007). They may also be concerned that they would need to downplay their group identity in order to succeed in college (Cohen & Garcia, 2005). If this lack of belonging stands as a barrier, students may be well served by colleges and universities extending a more "welcoming hand" to recent high school graduates as they make the transition to postsecondary education. Kirst and Venezia (2004), for example, have called for better alignment and collaboration between the secondary and higher education sectors and to ensure a smooth transition as students move from high school to college**.**

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

We unite these research strands by investigating the impact of a unique high school – university partnership designed to support under-represented, college-intending students to follow through on their college intentions. In summer 2012, we facilitated a collaborative effort between the Albuquerque Public Schools (APS) and the University of New Mexico (UNM), the higher education institution attended by the vast majority of APS graduates who continue on to a four-year college or university. We randomly assigned the 1,602 APS graduates who reported plans to enroll in UNM the following fall to one of three experimental groups: (1) outreach from

a high school counselor stationed at an APS high school, (2) outreach from a high school counselor stationed on the UNM campus, or (3) to a control group. This experimental design allowed us to assess whether students are more responsive to the offer of outreach and support with the transition from high school to college when it is coming from the college or from the high school.

More specifically, our research questions focus on investigating whether college-ready, college-intending recent high school graduates benefit when high schools and universities collaborate to support their transition to college. Specifically, we investigate the following questions:

1. Do students who receive proactive outreach from a high school- or college-based counselor during the summer enroll in college at higher rates than students who do not receive outreach?
2. Are students differentially responsive to outreach from counselors stationed at a university versus counselors stationed at their high school?
3. Are student groups less represented on the UNM campus more responsive to proactive outreach than students that are more represented on campus?

Setting:
Description of the research location.

We partnered with the Albuquerque Public Schools (APS) and the University of New Mexico (UNM) to implement the high school-college partnership intervention. Albuquerque is a particularly unique setting in which to conduct such an intervention, given that the vast majority of APS students who matriculate to a four-year institution do so at UNM.

Population / Participants / Subjects:
Description of the participants in the study: who, how many, key features, or characteristics.

The experimental sample is comprised of 1,602 APS graduates who had been admitted to enroll at UNM. Approximately 50 percent of the experimental sample was Latino, with 29 percent of the sample qualifying for free- or reduced-price lunch. This compares with 62 percent Latino students and 50 percent of students qualifying for free-or reduced-priced lunch among all other college-intending students in the district. The UNM-admitted students also had higher GPAs and higher standardized math and ELA scores than other college-intending students.

Intervention / Program / Practice:
Description of the intervention, program, or practice, including details of administration and duration.

In the high school-university intervention, counselors proactively reached out to students to offer help completing required summer tasks. Prior to the start of summer, we provided a comprehensive training for school counselors on how to review financial aid award letters and tuition bills and access and complete required college paperwork. Our team developed a number of tools to help guide counselors' interactions with students, including comprehensive checklists of what to cover when they met with students. Counselors documented their conversations and meetings with students from both the treatment and control groups in an online interaction log.

Counselors stationed at the university campus received several additional supports. First, in addition to the training we provided, the university provided a day-long on-campus orientation to

the college-based counselors. The orientation covered university-specific details on required summer tasks, as well as an introduction to campus staff and resources that were available to assist students. Second, the university identified a staff liaison who was available throughout the summer to answer questions for the college-based counselors. Third, the university provided office space and landlines from which the counselors could contact students.

APS hired 21 counselors to staff the APS-UNM partnership. Eight counselors were based at UNM, and 13 were based at APS high schools. Counselors worked 10–20 hours per week for a period of 5–6 weeks. Counselor caseloads ranged from 60-100 students, with larger caseloads assigned to counselors who were able to invest more hours in the project.

Research Design:
Description of the research design.

We conducted this study as a randomized controlled trial. An APS data analyst conducted the random assignment of students to experimental conditions prior to the start of summer. Randomization was done within students' graduating high school, with the experimental sample divided roughly equally among the control and two treatment groups.

Data Collection and Analysis:
Description of the methods for collecting and analyzing data.

Our investigation capitalizes on data from several sources. First, APS provided student-level demographic and prior academic achievement information from district administrative records. These data include students' gender, race/ethnicity, free/reduced price lunch status, FAFSA completion status, English language learner status, high school GPA, and scaled score on state achievement tests. APS also provided interaction-level records from the counselor interaction logs kept by counselors during the course of the summer intervention. These logs include information on whether students took up the offer of help from a counselor; when and where the interaction took place, and what help the counselor provided. Finally, APS provided student-level college enrollment records from the National Student Clearinghouse.

To assess impacts on postsecondary enrollment outcomes, we generated several binary outcome measures from the Clearinghouse data. These include whether the student enrolled in the fall semester immediately following high school graduation; whether the student enrolled at UNM or not; and whether the student enrolled at a four-year or two-year institution.

The primary explanatory variables are indicators for treatment group assignment. To increase the precision of our analyses, we include the academic and demographic covariates referenced above. We also include high school fixed effects since randomization was conducted at the high school level.

Data Analyses

We specify the following analytic model for our analyses:

$$COLLEGE_{ij} = \alpha_j + \beta_1 UNM_{ij} + \beta_2 APS_{ij} + X_{ij}\gamma + \varepsilon_{ij},$$

where α_j represents a vector of fixed effects for high school; UNM_{ij} is an indicator for student i in school j receiving outreach from an APS counselor stationed at UNM; APS_{ij} is an indicator for

receiving outreach from an APS counselor stationed at the APS high school from which the student just graduated; X_{ij} is a vector of student-level covariates; and ε_{ij} is a residual error term. Our estimate of the β_1 and β_2 coefficients will respectively indicate whether assigning students to outreach from an APS counselor stationed at UNM or from an APS counselor stationed at an APS high school increased college attainment relative to students who did not receive proactive outreach. A post-hoc F-test on the β_1 and β_2 coefficients will indicate whether assigning students to outreach from a counselor at UNM had a different impact on attainment compared to assigning students to outreach from a counselor stationed at their APS high school.

Findings / Results:

Description of the main findings with specific details.

Among students well-represented on the UNM campus—Latino and non-Latino females and non-Latino males—summer melt rates are quite low. Fewer than ten percent of students in these groups that have been admitted to UNM fail to matriculate; in the case of the female students, the melt rates among Latino and non-Latino students are seven and four percent, respectively. By contrast, the melt rate for Latino males is over 15 percent. At the same time, Latino males are more responsive to the offer of summer assistance than students from the other groups. For instance, 60 percent of Latino males who were randomly assigned to received outreach from an APS counselor stationed at UNM engaged with that counselor, compared with 55 percent of female students (Table 1). This greater responsiveness translated into larger enrollment effects of the outreach. While 84 percent of Latino males in the control group successfully matriculated at UNM, the enrollment rate among students who were randomly assigned to receive outreach from a counselor stationed at UNM was 96 percent—the same enrollment rate as non-Latino females, whose enrollment decisions were not affected by the offer of outreach over the summer (Table 2).

Conclusions:

Description of conclusions, recommendations, and limitations based on findings.

Our study demonstrates that student groups traditionally underrepresented in higher education, such as Latino males, are more susceptible to having their college plans fall apart during the summer after high school graduation. This finding aligns with the burgeoning social belonging literature in psychology, which demonstrates that underrepresented students' perceived lack of belonging can undermine their transition to or success in higher education. Our study also shows, however, that concentrated and targeted outreach to underrepresented groups during the summer months can have a profound effect on whether they successfully matriculate, increasing their enrollment by 13 percent. Outreach from counselors stationed at the college side was particularly effective, suggesting that proactive communication and the offer of support from students' intended college may helpful reinforce students' sense of belonging at and welcome from higher education institutions.

Appendices

Not included in page count.

Appendix A. References

References are to be in APA version 6 format.

Bailey, M.J., & Dynarski, S.M. (2012). *Gains and gaps; Changing inequality in U.S. college entry and completion*. National Bureau of Economic Research Working Paper No. 17,633. Cambridge, MA.

Cohen, G. L. & Garcia, J. (2005). "I am us": Negative stereotypes as collective threats. Journal of personality and social psychology, 89(4), 566-582.

Goldin, C. & Katz, L. F. & Kuziemko, I., 2006. The homecoming of American college women: The reversal of the college gender gap. Journal of Economic Perspectives, 20, 133-156.

Hoxby, C., & Avery, C. (2012). The Missing "One-Offs": The Hidden Supply of High-Achieving, Low Income Students. NBER Working Paper No. 18586.

Hoxby, C.M.. & Turner, S. (2013). Expanding College Opportunities for High-Achieving, Low Income Students. SIEPR Discussion Paper.

Kirst, M. W. & Venezia, A., eds. (2004). *From high school to college – Improving opportunities for success in postsecondary education*. Jossey-Bass.

Scott-Clayton, J. (2012). *The shapeless river: Does a lack of structure inhibit students' progress community colleges?* CCRC Working Paper No. 25. New York: Community College Research Center, Teachers College, Columbia University.

Smith, J., Pender, M., & Howell, J. (2012). The full extent of student-college academic undermatch. *Economics of Education Review*, 32: 247-261.

Walton, G.M., & Cohen, G.L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology 92*(1): 82-96.

Appendix B. Tables and Figures

Not included in page count.

Table 1. Intervention take up, for subgroups defined by ethnicity and gender

	Hispanic, male	Non-Hispanic, male	Hispanic, female	Non-Hispanic, female
UNM outreach	0.600***	0.523***	0.552***	0.549***
	(0.052)	(0.048)	(0.036)	(0.039)
APS outreach	0.455***	0.396***	0.443***	0.509***
	(0.051)	(0.048)	(0.039)	(0.044)
Fixed effects for high school	✓	✓	✓	✓
N	290	364	513	435
R^2	0.356	0.296	0.315	0.335
F-test	4.1	3.74	4.46	0.53
(p-value)	0.0439	0.0539	0.0352	0.4663

p <0.10, * p<0.05, ** p<0.01, *** p<0.001

Source: Albuquerque Public Schools administrative records.

Notes: Coefficients presented from linear probability models predicting treatment take-up from randomized treatment assignment and fixed effects for high school. Notation of statistical significance refers to comparisons between control and treatment group means after accounting for school membership with fixed effects. Essentially no control group student received support from either a UNM- or APS-based counselor. The F-test pertains to a post-hoc comparison of the rate of take-up of the UNM-based and APS-based outreach.

Table 2. Impact of the offer of summer support on college enrollment, subgroups defined by ethnicity and gender

	Hispanic, male	Non-Hispanic, male	Hispanic, female	Non-Hispanic, female
UNM outreach	0.117**	0.016	-0.018	-0.029
	(0.045)	(0.039)	(0.029)	(0.027)
APS outreach	0.076	-0.042	-0.004	-0.024
	(0.051)	(0.040)	(0.029)	(0.028)
Control group enrollment rate	0.840	0.910	0.930	0.960
Covariate controls	✓	✓	✓	✓
Fixed effects for high school	✓	✓	✓	✓
N	290	364	513	435
R^2	0.099	0.086	0.064	0.044
F-test	1.19	1.93	0.26	0.03
(p-value)	0.2766	0.1657	0.6090	0.8648

p <0.10, * p<0.05, ** p<0.01, *** p<0.001

Source: Albuquerque Public Schools administrative records and National Student Clearinghouse.

Notes: Coefficients presented from linear probability models predicting enrollment outcomes from randomized treatment assignment, fixed effects for high school, and baseline covariates. Baseline covariates include gender, race / ethnicity, FRL status, ELL status, high school GPA, performance on state standardized tests in math and ELA and indicators for missing baseline information.