

# Increasing College Opportunity: School Counselors and FAFSA Completion



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## ABSTRACT

Closing postsecondary opportunity gaps has become a national, state and local educational priority. To help eliminate these gaps, the U.S. Department of Education initiated a project that provided real-time, student-level Free Application for Federal Student Aid (FAFSA) completion status to large, urban school districts. Leveraging this information, school counselors identified and supported students and families as they navigated the financial aid process. In this article, we discuss this initiative and document statistically significant increases in FAFSA completion and college attendance in one participating school.

**Keywords:** School counseling, financial aid, FAFSA completion, college matriculation, college opportunity gaps, college advising

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## INTRODUCTION

Opportunity gaps continue to widen in terms of who attends college and persists through graduation, with underserved and underprivileged students remaining less likely to apply and attend college than their more advantaged peers (Swail & Perna, 2002; Perna, 2002; Roderick, Nagaoka, Coca, & Moeller, 2008; Ross, Kena, Rathbun, KewalRamini, Zhang, Kristapovich, & Manning, 2012). These disparities are especially pronounced when attendance and persistence data is reported by race/ethnicity, socioeconomic status, and gender (Bailey & Dynarski, 2012). National initiatives such as the President's College Opportunity Agenda and the First Lady's Reach Higher Campaign have drawn increased attention to inequitable student educational outcomes (Hatch & Owen, 2015; Savitz-Romer & Liu, 2014). Two recent White House Convenings held at Harvard University (July 2014) and San Diego State University (November 2014) focused specifically on the lack of adequate school counseling and college advising resources available to many students (Hatch & Owen, 2015; Savitz-Romer & Liu, 2014). The Convenings called for renewed attention and evaluation of school counseling practices and interventions that create postsecondary pathways for all students (Hatch & Owen,

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2015; Savitz-Romer & Liu, 2014).

While some individuals might argue that school counselors are not primed for this work, there are increasing numbers of researchers and practitioners who have advocated for school counseling as a means to address inequitable postsecondary opportunities. The College Board's 2012 National Survey of School Counselors found that principals and counselors believe that school counselors should spend time building a college-going culture within schools and that extra attention should be given to supporting students from low-income, disadvantaged, and immigrant backgrounds (Heart Research Associates, 2012). Engberg and Gilbert (2013) found the number of hours school counselors spent on college counseling was a strong predictor of the school's four-year college going rates. They also noted that school counseling departments that offered financial aid assistance to students were approximately 12 percentage points higher in four-year college going rates compared to schools that did not offer that type of assistance (Engberg & Gilbert, 2013). Similarly, Hurwitz and Howell (2014) found the addition of one extra high school counselor increased four-year college enrollment rates by 10 percentage points. While more research is needed to fully understand the impact of school counseling on college opportunity, these

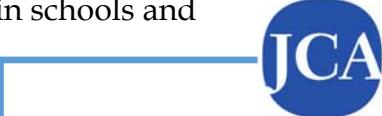
studies provide some evidence that evaluating K-12 district and higher education school counseling and college advising interventions hold promise for promoting postsecondary opportunity for all students (Hatch & Owen, 2015; Savitz-Romer & Liu, 2014).

In this article, we investigate a project initiated by the U.S. Department of Education. This project's aim was to provide real-time student-level Free Application for Federal Student Aid (FAFSA) completion status

data to the largest urban school districts across the country. School counselors used this verified FAFSA completion information to provide targeted outreach and support to students and their families as they navigated the financial aid process. Prior to this project, school counselors

relied on student self-reported FAFSA completion information or the Expected Family Contribution (EFC) determination to verify FAFSA completion status.

Because the U.S. Department of Education uses a completed FAFSA to determine whether a student is eligible for financial aid, FAFSA completion is a crucial action many students must undertake to be able to pay for and attend college. With this in mind, we analyzed data from a large U.S. school district that participated in the U.S. Department of Education outreach program. We found that



**"We found that increased counselor outreach and financial aid support not only increased FAFSA completion, but also had a large impact on college attendance."**

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increased counselor outreach and financial aid support not only increased FAFSA completion, but also had a large impact on college attendance.

### Literature Review

The last decade has seen a surge of initiatives and policy recommendations to increase college attendance for low-income and underrepresented groups (Holcomb-McCoy, Lee, Bryan, & Young, 2011). As a result, a variety of college access programs have been designed to address college-going barriers (Swail & Perna, 2002; U.S. Department of Education, 2013). Even with these programs, many students remained without access to these resources and missed out on valuable information and counseling support necessary to navigate the complex college admissions and financial aid processes (Gullatt & Jan, 2003; Simmons, 2011; Swail & Perna, 2002; Tierney, Corwin, & Colyar, 2005).

Inability to pay and misinformation regarding college costs are barriers to college-going. These barriers are especially salient for minority, low-income, and first generation students (Long, 2009; Long & Riley, 2007; Porter, 2006). Many students and families find the financial aid process confusing and cumbersome (Castleman, Arnold, & Wartman, 2012; Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2012; Chen & DesJardins, 2007, Perna, 2004). This scenario is especially true for African American and Hispanic/Latino students who often lack access to adequate college counseling that supports and provides valuable information to

navigate the complex college admissions and financial aid process (Bryan, Moore-Thomas, Day-Vines, & Holcomb-McCoy, 2011; Simmons, 2011).

High schools can help ensure that students take the necessary steps to obtain financial aid by educating students and their parents early in high school about college affordability and the availability of financial aid and by helping them identify potential sources of aid (Tierney, Bailey, Constantine, Finkelstein, & Hurd, 2009). Students may also benefit from hands-on assistance in meeting financial aid deadlines and completing application forms (Bettinger et al., 2012; Tierney et al., 2009). Castleman and Page (2014c) found that many students and families have unanswered questions related to financial aid after high school graduation and may need support throughout the summer months to review financial aid award letters and navigate the tasks needed for successful on-time college matriculation. Comprehensive programs supporting students and families through the financial aid process has significant impacts on college attendance especially for underrepresented youth who otherwise would be unable to go (Bettinger et al., 2012; Castleman & Page, 2014a, 2014b, 2014c; Castleman, Page, & Schooley, 2014; Hoxby & Turner, 2013). However, very little research has been documented on how to implement school-wide efforts to provide student and parent support through the financial aid process. Research is not clear on whether attempting to work with every student would truly improve college outcomes and receipt of

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aid (Bettinger et al., 2012).

**School Counselors and College Admissions**  
Numerous researchers have examined the role school counselors play in college access (McDonough, 2005; Perna, 2008; Plank & Jordan, 2001; Venezia, Kirst, & Antonio, 2008). A review of the literature reveals a dichotomy of opinions. Some authors have focused on deficits, noting that role confusion, high student-to-school counselor ratios, fiscal constraints, lack of preparation, and inadequate expertise in college admissions prevent school counselors from fulfilling the college counseling role (Dounay, 2008; Johnson & Rochkind, 2010; McDonough, 2005; McDonough & McClafferty, 2001; Oliver, Ricard, Witt, Alvarado, & Hill, 2010; Perna, Li, Anderson, Thomas, Rowan-Kenyon, & Bell, 2008; Tierney et al., 2005). Low-income, first generation, and students of color have the greatest need for access to a school counselor, yet they are often the least likely to meet with a school counselor for college admissions or financial aid support because they are more likely to attend schools where their counselors tend to be heavily focused on crisis related matters, social-emotional concerns, and other counseling and/or administrative issues (Bryan, Holcomb-McCoy, Moore-Thomas, & Day-Vines, 2009; Cabrera & La Nasa, 2001; Corwin, Venegas, Oliverez, & Colyar, 2004; McDonough, 2005; Perna et. al, 2008; Plank & Jordan, 2001; Trusty & Niles, 2003).

Given that school counselors rarely report that their program's primary goal is to help students plan and prepare for postsecondary

education (Bridgeland & Bruce, 2011; Clinedinst, Hurley, & Hawkins, 2011; Engberg & Gilbert, 2013; Ross et al., 2012), these findings might lead some individuals to believe that this important task should be relegated to other parties. However, when school counselors are available and able to provide assistance to students and families navigating the college admissions process, college attendance rates increase and opportunity gaps begin to close (Belasco, 2013; Castleman, Owen, & Page, 2015; Hurwitz & Howell, 2014; Owen, 2014).

Johnson and Rochkind (2010) found a correlation between the degree to which students had a poor relationship with their school counselor and whether they felt like they were disappointed in their college choice. Analyzing data from the Educational Longitudinal Study of 2002, Belasco (2013) found that school-based counseling made distinct and substantial contributions to the college enrollment and destinations of low socioeconomic students (SES). Engberg and Gilbert (2013), analyzing the High School Longitudinal Study of 2009, found that both school counselor norms (average caseload and hours spent on college counseling) and resources (college fairs, college course offerings, and financial aid) were important predictors of a school's four-year college-going rates.

Two recent multi-site studies utilized high school counselors or community-based financial aid advisors to help college intending seniors review their financial aid

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packages, understand and complete paperwork, and negotiate social/emotional barriers to enrollment during the summer after high school graduation. Across sites, students to whom counselors offered additional support were five to fourteen percentage points more likely to enroll in college (Castleman, Arnold, & Wartman, 2012; Castleman, Page, & Schooley, 2014).

These studies shed light on the impact school counselors may have on college attendance. However, compared to other role groups, very little research has focused on specific school-wide school counselor efforts to increase college attendance. This fact, combined with the purported underutilization of school counselors as resources for increasing college attendance, informed the design of this study.

### Method

Our primary goal was to determine if school counselor outreach and support can positively affect FAFSA completion and college attendance. We asked the following research questions:

Does increased school counselor outreach and support increase the number of students who complete a FAFSA?

Does increased school counselor outreach and support increase the number of students who attend college the fall semester after graduation?

### Participants

The sample for this study was taken from a large urban school district in the southwestern U.S. comprising 8,655 high school graduates across 21 high schools over two years. Cohorts were similar in size, with 4,365 graduates in 2010 and 4,290 graduates in 2011. District K-12 demographics show a total population average of 56% Hispanic, 32% white, 5% Native American, 4% African American, and 3% Asian. Special education services were received by 13% of the students.

### Procedure

The U.S. Department of Education's FAFSA Completion Project was designed to encourage, support, and increase FAFSA completion in some of the largest school districts across the country (U.S. Department of Education, Office of Elementary and Secondary Education, 2011). School districts in the pilot project were able to request and receive FAFSA completion information from the U.S. Department of Education's office of Federal Student Aid (FSA) for individual high school students. One person from each local education agency (LEA) submitted directory information (name, date of birth, and zip code) to the U.S. Department of Education and in return, the U.S. Department of Education provided the LEA with student-specific FAFSA submission information. Reports came back identifying students who had submitted a FAFSA, on what date the FAFSA was submitted, and if the expected family contribution had been calculated. This information allowed counselors to reach out to students who had not yet completed the

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FAFSA or who had submitted it with errors. The pilot project encouraged the development of school-wide counselor driven outreach but allowed each district the flexibility to design how that would look.

### Actions taken to provide outreach and support

The superintendent and school district leadership team in Albuquerque, New Mexico were enthusiastic about participating in the U.S. Department of Education's FAFSA completion project and asserted the project aligned well with their district-wide focus and commitment to increase the number of students attending college. School principals also acknowledged their support for prioritizing school counselor time and energy on the FAFSA Completion project.

The U.S. Department of Education's Federal Student Aid (FSA) office offered FAFSA training to equip school counselors with the knowledge and skills needed to properly assist students and families throughout the FAFSA completion process. Seventy-five high school counselors across the district participated in three hours of training with staff from the U.S. Department of Education Federal Student Aid office on the FAFSA. They learned about the myths surrounding financial aid, the different types of federal grants, basic eligibility requirements, the Student Aid Report (SAR), FAFSA filing options, the Estimated Family Contribution (EFC), the Internal Revenue Service (IRS) retrieval tool, and the IRS authentication process. Each counselor then logged into the

FSA FAFSA demo test site and completed a full FAFSA application based on a fictitious student's financial information. A post-test consisting of a variety of scenarios was administered after the training to measure counselor skills and knowledge needed to adequately support families through the completion process. All counselors who attended the training passed the post-test, demonstrating proficient knowledge and understanding of information required to provide individual support to students and families.

The school district set up "trusted centers" in fourteen comprehensive high schools throughout the city. The term "trusted center" was used to encourage the students, parents, and community that the centers were places where they could safely seek help with financial aid information. Each trusted center was located in a high school computer lab where FAFSA applications could be accessed and completed. Each high school held a minimum of eight FAFSA completion events between February and March. The FAFSA completion events lasted one to two hours and were advertised on the radio, TV, newspaper, via the web, and through the use of the individual high school's automated telephone messaging system. Messages were sent to parents in their native language to inform them of the trusted centers and school counselor support available. When requested, counselors also worked with students and parents one on one in their offices.

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FAFSA completion support was offered to the entire class of 2011 and records were maintained to monitor individual student meetings. The FAFSA match from the U.S. Department of Education's Financial Student Aid system was postponed until mid-May due to some unforeseen programming issues for the U.S. Department of Education. This unexpected delay prevented the school counselors from having access to the Federal Student Aid FAFSA completion status during the school year. Recognizing the importance of the student specific data, the district took advantage of the completion information that was accessible beginning in May 2011 and hired school counselors to work during the summer months of June and July. The counselors were tasked with reaching out to students who had not completed a FAFSA as of graduation. Students and parents received calls from school counselors over the summer months to offer support with FAFSA completion and college transition issues.

### Research Design

The U.S. Department of Education (DOE) provided data on FAFSA completion. The school district submitted the names, birthdates, and zip codes for the graduating seniors in 2010 and 2011 to the DOE. The DOE then matched each student's information to their FAFSA record and returned students' FAFSA filing date and students' current completion status to the school district. When the school district received the FAFSA data, they used student records to match the data with records in the National Student Clearinghouse to determine whether students

enrolled in college. The district then eliminated all student identifiers, assigned a random identification number to each student, and provided student-level information (e.g., race/ethnicity, grade point average, receipt of special education services) to match the DOE data.

### Measures

Summary statistics for all measures used in the study are provided in Table 1.

**Table 1.**  
**Descriptive Statistics**

|                                     | N    | Proportion/<br>Mean | (SD) | Percent Missing |
|-------------------------------------|------|---------------------|------|-----------------|
| <b>Dependent Variables</b>          |      |                     |      |                 |
| FAFSA Complete                      | 8655 | 0.45                | 0.50 | 0               |
| College Enrollment                  | 8655 | 0.63                | 0.48 | 0               |
| <b>Independent Variables</b>        |      |                     |      |                 |
| Intervention                        | 8655 | 0.50                | 0.50 | 0               |
| White                               | 8655 | 0.33                | 0.47 | 0               |
| African American                    | 8655 | 0.04                | 0.20 | 0               |
| Hispanic                            | 8655 | 0.56                | 0.50 | 0               |
| Asian                               | 8655 | 0.03                | 0.17 | 0               |
| Native American                     | 8655 | 0.05                | 0.21 | 0               |
| GPA                                 | 7113 | 2.87                | 0.59 | 17.8            |
| Receives Special Education Services | 8655 | 0.13                | 0.33 | 0               |

### *Dependent variables*

Two dependent variables are examined in this study: FAFSA completion and college enrollment.

FAFSA completion was coded 0 for incomplete if students did not file a FAFSA, or initiated a FAFSA but never completed it. FAFSA completion was coded 1 if students filed a complete FAFSA.

College enrollment was coded 0 for students with no record in the National Student Clearinghouse of attending college after graduating from high school. Students with a record of post-high school college attendance

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are coded 1. It should be noted that 4% of colleges do not participate in the NSC, and our records cannot capture students who enroll at these colleges (National Student Clearinghouse, 2015).

### *Independent variables*

The primary independent variable in this analysis is whether students were in the intervention year, meaning they had access to the counselor services described above. Thus, students who graduated high school in 2010 were coded 0 for no access to intervention. Students who graduated in 2011, the year the intervention was initiated, were coded 1.

Other covariates include race/ethnicity, grade point average, and whether a student received special education services. Race/ethnicity is a categorical measure taking five possible values: white, African American, Hispanic, Asian, or Native American. Grade point average (GPA) is a continuous measure taking values from 0 to 4 of students' cumulative high school GPA. Whether a student received special education services is a categorical variable taking a value of 0 for students who never received special education services and 1 for students who received these services.

### **Missing data**

Data on high school grade point average (GPA) was missing for approximately 18% of students in the data files provided to us by the school district. These missing values were not able to be recovered by the school district. Fortunately, the missing GPA values appear

to be missing at random. For example, among those who completed a FAFSA, 17% had data on GPAs missing, whereas 18% of those who completed a FAFSA had GPAs missing. This difference is not statistically significant according to a two-sample t-test ( $p=0.42$ ). Among those who attended college, 16% are missing the GPA measure, compared to 20% of those who did not attend college. This difference is statistically significant on a two-sample t-test ( $p=0.00$ ). However, this difference is driven by high-school level differences, not GPA itself. In a bivariate linear regression model that accounts for clustering by high school, in which the dependent variable is whether GPA is missing and the independent variable is whether a student attended college, the coefficient for college attendance is statistically non-significant ( $p=0.34$ ). For these reasons, we feel comfortable that our data meet the assumptions required for multiple imputation procedures. The ICE package in STATA was used to impute missing GPA using a multiple imputations by chained equations procedure (Royston, 2005). Ten imputations were generated. Models using the GPA measured are estimated once for each imputation (i.e., both Model 3s in Table 3), and the coefficients and standard errors are combined using Rubin's rules (Rubin, 2004). All other data are complete and required no imputation procedures.

Our research design is a comparison of non-equivalent groups (Shadish, Cook, & Campbell, 2002). Our "control" group comprises students who graduated in 2010,

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before the intervention was implemented. Our intervention, or “treatment” group, comprises students who graduated in 2011, all of whom had access to school counseling financial aid support.

The baseline differences in rates of FAFSA completion and college attendance between groups were calculated by subtracting the proportion of students in the control group who completed a FAFSA or attended college from the respective proportion of students in the intervention group. Two sample t-tests were used to determine if these differences are statistically significant.

Multivariate regression models were used to calculate differences in rates of FAFSA completion and college attendance conditional upon potentially confounding measures, such as race/ethnicity, GPA, and whether a student received special education services. All models were estimated in Stata 14 (StataCorp, 2015).

### Modeling strategy

We report the results from a linear probability model with standard errors adjusted to allow for correlation among students who attended the same high school. In this model, the coefficient of the treatment intervention tells us the marginal effect of being in the intervention group, conditional upon modeled covariates. This allows for easy comparison of rates of FAFSA completion and college attendance.

We estimate three models for each outcome. Model 1 is a bivariate regression, comparing outcome rates across intervention groups. This model, equivalent to a two-sample t-test, tells us the difference in probability of completing a FAFSA and attending college for students with access (i.e., 2011 graduates) or without access (i.e., 2010 graduates) to school counseling financial aid support. In Model 2, indicator variables for race/ethnicity are added. This model tells us the conditional difference in probability of FAFSA completion and college attendance for students who received the outcomes versus students who did not receive the outcome, controlling for race/ethnicity. In Model 3, measures of students’ academic history are added to the model. This model tells us the difference in probability of FAFSA completion and college attendance for students who received the outcomes versus students who did not receive the outcome, controlling for race/ethnicity and academic history.

We reported linear probability models (LPMs) because the results obtained from these models are substantively similar to more complicated models and easier to interpret. For example, we ran logistic regression models using the same independent variables and then calculated marginal effects telling us the change in probability associated with a change in the interventions. After rounding, the probability changes for the FAFSA model were identical to the probability change indicated by an LPM. The probability change associated with college attendance and intervention participation was 0.02 smaller in

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the LPM than the logistic regression model, meaning that LPM gives us more conservative results. The standard errors in the LPM and the marginal effects of the logistic regression model were identical after rounding. We estimated several other models. To model differences across high schools, we estimated three multilevel regression models: a linear probability model where intercepts are allowed to vary by high school, a logistic regression model where intercepts were allowed to vary by high school, and a population-average logistic regression model (Raudenbush & Bryk, 2002). Compared to the linear probability model reported here, the more complex models all result in the same substantive conclusions. For this reason, we opted to report only the linear probability model results. An expanded discussion of this choice is provided in Appendix A (see p. 21).

**Threats to validity and sensitivity analysis**  
Our research design relies upon comparing students without access to the intervention (2010 graduates) to those students with access to the intervention (2011 graduates). If there are systematic differences between these groups, our findings may be biased. Given that we are comparing students from a later cohort to an earlier cohort, we are primarily concerned that the graduating classes of 2010 and 2011 vary systematically for reasons other than that they had access to the counseling intervention. This is not unreasonable. Every year, schools and school systems are generally trying to improve their academic outcomes compared to the prior year. If these efforts were successful, they may explain all or some

of the observed differences between years. We assess the plausibility of systematic difference between groups explaining differences in outcomes in two ways. First, we compare measures from one year to the next to see if there are systematic differences. Second, we use a tool, Konfound-It! to perform sensitivity analyses (Frank, Maroulis, Duong, & Kelcey, 2013; Frank, 2014). These analyses allow us to quantify how much bias there would need to be to change the inferences made. The results of these efforts are discussed later.

## Results

We find strong evidence that the introduction of the school counseling financial aid intervention resulted in substantial increase in rates of FAFSA completion and college attendance. FAFSA completion rates post-intervention were 10 percentage points higher than pre-intervention. College attendance rates post-intervention were 11 percentage points higher than pre-intervention. Both of these effects are statistically significant and are robust to unobserved confounding measures. Table 2 provides results from linear probability models of FAFSA completion and college attendance.

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**Table 2.**  
**Linear Probability Models of FAFSA Completion and College Attendance**

|                                     | FAFSA Completion   |                    |                     | College Attendance   |                    |                     |                      |
|-------------------------------------|--------------------|--------------------|---------------------|----------------------|--------------------|---------------------|----------------------|
|                                     | Model 1            |                    | Model 2             | Model 3 <sup>^</sup> | Model 1            |                     | Model 3 <sup>^</sup> |
|                                     | Coef./(SE)         | Coef./(SE)         | Coef./(SE)          | Coef./(SE)           | Coef./(SE)         | Coef./(SE)          | Coef./(SE)           |
| Intervention                        | 0.103***<br>(0.02) | 0.104***<br>(0.02) | 0.107***<br>(0.02)  |                      | 0.117***<br>(0.02) | 0.120***<br>(0.02)  | 0.122***<br>(0.02)   |
| Black                               |                    | -0.037<br>(0.02)   | 0.012<br>(0.02)     |                      |                    | -0.120***<br>(0.03) | -0.038<br>(0.02)     |
| Hispanic                            |                    |                    | -0.059***<br>(0.01) | -0.008<br>(0.02)     |                    | -0.124***<br>(0.03) | -0.040<br>(0.02)     |
| Asian                               |                    |                    |                     | 0.037<br>(0.04)      | 0.016<br>(0.04)    | 0.021<br>(0.03)     | -0.015<br>(0.02)     |
| Native American                     |                    |                    |                     | -0.003<br>(0.03)     | 0.060<br>(0.03)    | -0.167***<br>(0.03) | -0.066*<br>(0.02)    |
| Receives Special Education Services |                    |                    |                     |                      | -0.042<br>(0.03)   |                     | -0.140***<br>(0.04)  |
| Grade Point Average                 |                    |                    |                     |                      | 0.161***<br>(0.01) |                     | 0.263***<br>(0.01)   |
| Intercept                           | 0.402***<br>(0.02) | 0.435***<br>(0.01) | -0.055<br>(0.03)    | 0.576***<br>(0.03)   | 0.657***<br>(0.03) | -0.135*<br>(0.05)   |                      |
| R <sup>2</sup>                      | 0.01               | 0.02               | 0.05                | 0.015                | 0.033              | 0.137               |                      |
| N                                   | 8655               | 8655               | 8655                | 8655                 | 8655               | 8655                |                      |

\* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

<sup>^</sup> Due to missing data on Grade Point Average, reported values for Model 3 are combined results from 10 imputations. Coefficients and standard errors were calculated using Rubin's rules for combining results from multiple imputed data sets (Rubin, 2004).

### Model 1

Model 1, equivalent to a two-sample t-test, tells us about the baseline differences between students who receive the intervention versus those who did not. We see that the probability of FAFSA completion is 0.103 higher for post-intervention students than for pre-intervention students. The probability of college attendance is 0.117 higher for post-intervention students than for pre-intervention students. Both differences are statistically significant ( $p<0.00$ ).

### Model 2

In Model 2, we add statistical controls for race/ethnicity. Adjusting for race/ethnicity does not substantially change our estimates of the marginal effect of the intervention. The coefficient for the intervention in models of both FAFSA completion and college attendance are virtually indistinguishable

from those in Model 1. The FAFSA completion intervention coefficient increased from 0.103 to 0.104, a difference in only a thousandth of a point. The college completion intervention coefficient increased 0.117 to 0.120, a difference of only three-thousandths of a point. Both coefficients remain statistically significant ( $p<0.00$ ).

### Model 3

In Model 3, we add statistical controls for measures of academic history. Again, the coefficients on the intervention barely change. The FAFSA completion intervention coefficient increased from 0.104 to 0.107, a difference in only three-thousandths of a point. The college completion intervention coefficient increased 0.120 to 0.122, a difference of only two-thousandths of a point. Again, both coefficients remain statistically significant ( $p<0.00$ ).

Adding statistical controls does not substantially change our estimates of the counseling program's effect on FAFSA completion and college attendance. This is desirable because the "treatment effect" estimates should remain stable when the "treatment" and "control" groups are balanced, as they would be in a randomized controlled trial. In all, we see sizable, stable, and statistically significant differences in FAFSA completion and college attendance when comparing pre-intervention students and post-intervention students, even after controlling for background characteristics and academic performance.

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It is clear that there are sizable, statistically significant differences in FAFSA completion and college attendance for pre-intervention students and post-intervention students.

### Threats to Validity from Unobserved Confounders

The above results provide strong evidence of the efficacy of the intervention *only* if we can assume that, besides the intervention, there are no systematic differences between the 2010 and 2011 graduating classes.

In Table 3, we provide summary statistics of all variables used in this analysis, cross-classified by students who had access to the intervention and those who did not.

**Table 3.**  
**Balance Table Comparing Means of Variables By Intervention Year**

|                                 | 2010<br>No Intervention |      | 2011<br>Intervention |      | T-test<br>2010 vs. 2011 |           |
|---------------------------------|-------------------------|------|----------------------|------|-------------------------|-----------|
|                                 | Mean                    | (SD) | Mean                 | (SD) | t                       | p         |
| <b>Dependent Variables</b>      |                         |      |                      |      |                         |           |
| FAFSA Complete                  | 0.40                    | 0.49 | 0.50                 | 0.50 | -9.70                   | <0.001*** |
| Attended College                | 0.58                    | 0.49 | 0.69                 | 0.46 | -11.39                  | <0.001*** |
| <b>Independent Variables</b>    |                         |      |                      |      |                         |           |
| White                           | 0.34                    | 0.48 | 0.32                 | 0.47 | 2.14                    | 0.03*     |
| African American                | 0.04                    | 0.20 | 0.04                 | 0.20 | -0.33                   | 0.74      |
| Hispanic                        | 0.55                    | 0.50 | 0.57                 | 0.50 | -1.35                   | 0.18      |
| Asian                           | 0.03                    | 0.17 | 0.03                 | 0.17 | 0.04                    | 0.96      |
| Native American                 | 0.04                    | 0.21 | 0.05                 | 0.21 | -0.84                   | 0.40      |
| Grade Point Average             | 2.89                    | 0.58 | 2.86                 | 0.59 | 2.36                    | 0.02*     |
| Receives Special Educ. Services | 0.13                    | 0.34 | 0.12                 | 0.33 | 0.37                    | 0.37      |
| N                               | 4,290                   |      | 4,365                |      | 8,655                   |           |

\* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

There are clear differences in FAFSA completion and college attendance by intervention status, but no strong differences in other measures. Statistically significant differences from 2010 to 2011 are only observed between the proportion of white students and GPA. In both cases, these differences are not substantively meaningful. There were only two percentage points fewer

white students in 2011 than in 2010, while GPAs were 0.03 points lower in 2011 than 2010. This provides some evidence that, demographically, there were no substantial differences between students in the “control” and “treatment” groups.

A more sophisticated approach to assessing potential threats to validity is to perform a sensitivity analysis where we quantify how much bias would need to exist to change the inferences made in this study. We used a method developed by Frank et al. (2013) to do this. This method, based on Rubin’s Causal Model framework, lets us calculate how many cases in a data set would have to be replaced with cases for which the independent variable had zero effect to change the inference made (Rubin 1974; Rosenbaum and Rubin 1983). We calculated these values using KonFound-it!, a program written by those who developed this sensitivity analysis technique (Frank, 2014). The results of the sensitivity analysis are provided in Table 4.

**Table 4.**  
**Sensitivity Analyses.**

| FAFSA Completion   | College Attendance   |
|--|--|
| Percentage of Cases with Zero Effect Required to be Replaced to Change Inference<br>68.3 | Percentage of Cases with Zero Effect Required to be Replaced to Change Inference<br>72.0 |

This table tells us that in order to reduce the coefficient of the effect of the intervention on FAFSA completion in Model 3 (presented in Table 3) to statistical non-significance, over 68% of students in the 2011 graduating class would have to be replaced with students for whom the intervention had no effect. To similarly reduce the coefficient of the

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intervention on college attendance, 72% of students in the 2011 graduating class would have to be replaced with students for whom the intervention had no effect. Put differently, in terms of students' FAFSA completion and college attendance, the students from the intervention year (2011) are so substantially different from those in the non-intervention year (2010) that for us to remove the differences observed, we would have to remove over two-thirds of students from 2011 from the sample and replace them with students who could not have received counseling services that are part of the intervention introduced that year.

This exercise provides us with a yardstick for understanding the likelihood that the observed causal effects is actually the result of bias. It may be useful to compare the results of our exercise to those from randomized trials, where the research design assures that the effects are not the result of confounding. As documented by Frank et al. (2013), the amount of bias required to change the inference made in this analysis is larger than the level needed to change the inferences made in Borman, Dowling, & Schneck's (2008) evaluation of the Open Court Reading intervention, Finn & Achilles' (1990) evaluation of the effect of class size on kindergarten students' standardized test scores, and Clements & Sarama's (2008) evaluation of a preschool mathematics curriculum on learning environment. We thus find it implausible that bias from unobserved measures would be strong enough to invalidate the inference made in this study

about the effect of the counseling services intervention on FAFSA completion and college attendance.

### Discussion

School counselors are an underutilized resource in preparing students to graduate college and career ready. In 2008, the Consortium on Chicago School Research at the University of Chicago released a report, *From High School to the Future: Potholes on the Road to College*, and concluded that students need more than high aspirations to go to college (Roderick, et al., 2008). The report revealed that first generation, low-income students require greater access to structured social support, mentoring, parental involvement and early college planning. They also found two critical steps are needed to improve college enrollment and success: first, creating a college-going culture in the school and, second, providing students with adequate support and guidance. They suggested that school counselors were in a unique position to do both (Roderick, et al., 2008). When students, parents, and counselors work together and communicate steps needed to navigate the college going process, student's chances of attending college significantly increase (McDonough, 2005). School counselors, as sources of extra social capital, must form collaborative strategic partnerships and develop systems that will support students and parents with the tasks needed for on time college matriculation (Bryan et al., 2009; Simmons, 2011).

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Recognizing the current disparities in school counseling programs and the lack of support that many students receive with the college going process, especially those in most need, recent national attention has focused on efforts to strengthen current school counseling and school-based college and career advising practices to increase student postsecondary outcomes (Hatch & Owen, 2015; Savitz-Romer & Liu, 2014). The school counseling field must move to empirically based practices that go beyond good intentions.

Financial aid research has frequently focused on the impact of interventions and programs led by organizations and groups that function more tangentially to school systems with studies designed to evaluate interventions where students have been randomly selected to participate or receive the intervention. Few studies have concentrated on school counseling programs or interventions working with all students (Holcomb-McCoy et al., 2011). This study becomes especially helpful for conceptualizing large-scale, school counselor led interventions designed to impact financial aid receipt and college attendance and measuring the effectiveness of interventions

that impact the entire graduating class.

The prospect of attending college is often ruled out due to fears concerning the ability to cover college costs and as a result, directly addressing affordability and funding options may make the difference between going to college or not (Cabrera & La Nasa, 2001; Heller, 2006; Poynton, Lapan, & Marcotte, 2015; St. John, Paulsen, & Carter, 2005; Tierney, et al., 2005; Tierney, 2006).

Providing assistance with the financial aid process not only increases financial aid receipt, but it also significantly increases the chances of on-time college matriculation (Bettinger et al., 2012; Castleman & Page, 2014a, 2014b, 2014c; Castleman, Page, & Schooley, 2014; Hoxby & Turner, 2013).

The results of this study show a ten percentage point increase in the total number of submitted

**"The results of this study show a ten percentage point increase in the total number of submitted FAFSA applications and a twelve percentage point increase in college attendance when comparing the class of 2010 to 2011, suggesting a positive connection between school counselor outreach/FAFSA completion and college attendance."**

FAFSA applications and a twelve percentage point increase in college attendance when comparing the class of 2010 to 2011, suggesting a positive connection between school counselor outreach/FAFSA completion and college attendance. These findings are encouraging and show that large-scale, school wide, school counselor led programs and interventions can have



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significant impacts on student's postsecondary decisions.

### Implications for School Counselors

As advocates for all children, school counselors must have the vision to creatively address equitable educational access for college readiness for all students, especially those students with the most need (Pham & Keenan, 2011; Weinstein & Savitz-Romer, 2009). Delivering a seamless stream of resources supporting students through the college going process will require leadership, advocacy, consultation skills, patience, and perseverance as best practices are discovered, leveraging every possible source of social capital. Opportunities to educate school counselors, parents, and the community on issues of college readiness will be essential to advance college readiness for all students.

Professional development for practicing school counselors who have little or outdated training in financial aid counseling must be provided. Institutions of higher education could establish strong district partnerships by providing FAFSA training and financial aid updates. University financial aid offices could partner with school districts to offer FAFSA completion events. Also, pre-service training institutions could include financial aid and college admissions training as a mandatory requirement in their school counselor preparation programs.

Finally, successful interventions in one community "may" not be the most effective in the next community. Cultural competence

and a willingness to understand diverse perspectives related to the college going process are needed. Patience and perseverance will be required as best practices leveraging collaborative partnerships are discovered and evaluated for impact. A one-size all approach will likely yield disappointing outcomes.

### Implications for Researchers

We have provided evidence of statistically significant differences in FAFSA completion and college enrollment between pre-intervention and post-intervention students. We have also provided evidence from sensitivity analyses suggesting that these differences are robust to unobserved confounders. Nevertheless, more research is needed to ascertain which supports and interventions have the greatest efficacy. Important questions to ask include: What differences, if any, exist by race, SES, and first generation status? Are there differences between two year and four year enrollment patterns for students who receive support with financial aid concerns? Do parent and student support needs differ? Will efforts such as FAFSA completion close the opportunity gap over time such that we might eventually eliminate it? What other barriers impact college going decisions? Who might school counselors form collaborative relationships with to increase FAFSA completion and college going?

Timing is also an important consideration and future research is needed to understand the K-12 practices necessary to increase college

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going. This study focused on interventions that occurred during the senior year, but college readiness and financial preparedness activities must begin in kindergarten and research is needed to evaluate and better understand the most promising practices (Hillman, Gast, & George-Jackson, 2015; MacCann, Lipnevich, & Roberts, 2012; McCollough, 2011).

This study was designed to assess the potential effect of increased school counselor support on how often students completed FAFSAs and enrolled in college. It does not, however, allow us to distinguish between the relative effectiveness of different outreach activities. Future research into which aspects of outreach have the highest impact on student's postsecondary decision-making process would be beneficial to both researchers and practitioners. It would also be helpful to understand how parents and students responded to the offer for school counselor support.

Similar to findings in the H&R Block Study, it remains to be seen if the enrollment effects translate into real, long-term benefits (Bettinger et al., 2009). One concern is that the support may have encouraged students to enroll in college, but questions remain regarding persistence through college graduation. Issues of college persistence were not addressed in this study.

Finally, navigating large urban school district policies around research and program implementation is a daunting task. Thus,

planning ahead and developing a system for addressing concerns is important. We suggest that memorandums of understanding between higher education institutions and school districts would simplify the research process and encourage stronger research practitioner collaboration.

We believe the above suggestions will help researchers in their efforts to understand and devise effective practices that enable students to complete college applications, obtain financial aid, and enroll in college.

## Appendix

### Results From Other Model Specifications

In this article, we report the results from a linear probability model, where the coefficient on the intervention tells us the marginal effect—measured in probability of “success”—on the outcome of the intervention, controlling for other variables. A potential problem with this model is that the linear combination from the model for certain combinations of values can be below zero or above one, which is impossible. Furthermore, it may also be informative to model variation in the outcomes between high schools using multilevel models. (In the reported linear probably model, we did adjust standard errors to allow for correlation among students who attended the same high school.)

To account for the binary measurement of the outcomes, we estimated a logistic regression model, which tells us the log odds of “success” vs. “failure” in each outcome as a function of the intervention and other

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covariates. This model constrains the probability of success or failure to fall between 0 and 1. Compared to the reported linear probability model, a logistic regression model of FAFSA completion yielded identical marginal effects after rounding. The linear probability model of college attendance has a probability 0.02 smaller than the marginal effects from the logistic regression. Thus, in comparison to a logistic regression model, the linear probability model leads us to the same substantive conclusions but provides us slightly more conservative estimates in the case of college attendance.

We also estimated multilevel models to allow the effect of the intervention to vary by high school. To do this we estimated both a linear probability model and logistic regression model where intercepts were allowed to vary by high school. We also estimated a population average logistic regression model using a generalized estimating equation. Little variation by high schools was observed. For example, the intraclass correlation of the linear probability model with random intercepts was 0.02, meaning unobserved properties of high schools explained only 2% of the overall observed variation. Likewise, compared to the linear probability model without random intercepts, there was little variation in size of the marginal effects of the intervention. For example, in the linear probability model with random intercepts, given a random effect of zero, the marginal effect of the intervention on FAFSA completion was 0.05 *lower* than in the linear probability model without random intercepts;

in the model on college attendance, this same marginal effect was 0.07 *lower*. In the population average model, however, the marginal effects were slightly *higher* than the linear probability, by 0.04 for the FAFSA completion model and 0.07 for the college attendance model. Compared to multilevel models, the linear probability model provides effect sizes about halfway between the relatively lower ones in a random intercepts model and the relatively higher ones in a population average model.

These more complex models tell the same story while providing less intuitive interpretations and requiring additional assumptions about the data-generating mechanism of the data. For these reasons, we opted to report the results of the linear probability model.

## References

- Bailey, M.J., & Dynarski, S.M. (2012). *Gains and gaps: Changing inequality in U.S. college entry and completion*. Cambridge, MA: National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w17633>
- Belasco, A. (2013). Creating College Opportunity: School Counselors and Their influence on postsecondary enrollment. *Research in Higher Education*, 54(7), 781-804. <http://dx.doi.org/10.1007/s11162-013-9297-4>
- Bettinger, E., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2012). The role of application assistance and information in college decisions: results from the H&R Block FAFSA experiment. *Quarterly Journal of Economics*, 127(3), 1205-1242. <http://dx.doi.org/10.1093/qje/qjs017>
- Borman, G. D., Dowling, N. M., & Schneck, C. (2008). A Multisite Cluster Randomized Field Trial of Open Court Reading. *Educational Evaluation and Policy Analysis*, 30(4), 389–407. <http://dx.doi.org/10.3102/0162373708326283>

## School Counselors and FAFSA Completion

- Bridgeland, J., & Bruce, M. (2011). *2011 national survey of school counselors: Counseling at a crossroads*. New York, NY: College Board Advocacy and Policy Center. Retrieved from [http://www.civicenterprises.net/MediaLibrary/Docs/counseling\\_at\\_a\\_crossroads.pdf](http://www.civicenterprises.net/MediaLibrary/Docs/counseling_at_a_crossroads.pdf)
- Bryan, J., Holcomb-McCoy, C., Moore-Thomas, C., & Day-Vines, N. (2009). Who sees the school counselor for college information? A national study. *Professional School Counseling*, 12(4), 280-291. <http://dx.doi.org/10.5330/PSC.n.2010-12.280>
- Bryan, J., Moore-Thomas, C., Day-Vines, N. L., & Holcomb-McCoy, C. (2011). School counselors as social capital: The effects of high school college counseling on college application rates. *Journal of Counseling and Development*, 89(2), 190-199. <http://dx.doi.org/10.1002/j.1556-6678.2011.tb00077.x>
- Cabrera, A. F., & La Nasa, S. M. (2001). On the path to college: Three critical tasks facing America's disadvantaged. *Research in Higher Education*, 42(2), 119-149. <http://dx.doi.org/10.1023/A:1026520002362>
- Castleman, B.L., Arnold, K., & Wartman, K. (2012). Stemming the Tide of Summer Melt: An Experimental Study of the Effects of Post-High School Summer Intervention on Low-Income Students' College Enrollment. *Journal of Research on Educational Effectiveness*, 5(1), 1-17. <http://dx.doi.org/10.1080/19345747.2011.618214>
- Castleman, B.L., Owen, L. & Page, L. (2015). Do college-ready students benefit when high schools and colleges collaborate? Experimental evidence from Albuquerque, New Mexico. *Economics of Education Review*, 47, 168-179. <http://dx.doi.org/10.1016/j.econedurev.2015.05.010>
- Castleman, B. L. & Page, L. C. (2014a). *Summer melt: Supporting low-income students through the transition to college*. Cambridge, MA: Harvard Education Press.
- Castleman, B. L. & Page, L. C. (2014b) Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? *Journal of Economic Behavior & Organization* <http://dx.doi.org/10.1016/j.jebo.2014.12.008>
- Castleman, B. L. & Page, L. C. (2014c). A trickle or a torrent? Understanding the extent of summer "melt" among college-intending high school graduates. *Social Science Quarterly*, 95(1), 202 – 220. <http://dx.doi.org/10.1111/ssqu.12032>
- Castleman, B. L., Page, L. C. & Schooley, K. (2014). The forgotten summer: Mitigating summer attrition among college-intending, low-income high school graduates. *Journal of Policy Analysis and Management*, 33(2), 320 – 344. <http://dx.doi.org/10.1002/pam.21743>
- Chen, R., & DesJardins, S. L. (2007). Exploring the effects of financial aid on the gap in student dropout risks by income level. *Research in Higher Education*, 49(1), 1-18. <http://dx.doi.org/10.1007/s11162-007-9060-9>
- Clements, D. H., & Sarama, J. (2008). Experimental Evaluation of the Effects of a Research-Based Preschool Mathematics Curriculum. *American Educational Research Journal*, 45(2), 443–494. <http://dx.doi.org/10.3102/0002831207312908>
- Clinedinst, M. E., Hurley, S. F., & Hawkins, D. A. (2011). 2011 state of college admission. Alexandria, VA: National Association for College Admission Counseling. Retrieved from <http://nacacnet.org>.
- Corwin, Z. B., Venegas, K. M., Oliverez, P. M., & Colyar, J. E. (2004). School counsel - How appropriate guidance affects educational equity. *Urban Education*, 39(4), 442-457. <http://dx.doi.org/10.1177/0042085904265107>
- Dounay, J. (2008). Counseling: Counseling high school students for postsecondary and workplace success. *The Progress of Education Reform*, 9(3), 2. Retrieved from <http://www.eric.ed.gov/PDFS/ED512130.pdf>
- Engberg, M., & Gilbert, A. (2013). The Counseling opportunity structure: Examining correlates of four-year college going rates. *Research Higher in Education*, 55(3), 219 – 244. <http://dx.doi.org/10.1007/s11162-013-9309-4>
- Finn, J. D., & Achilles, C. M. (1990). Answers and questions about class size: A statewide experiment. *American Educational Research Journal*, 27(3), 557–577. <http://dx.doi.org/10.3102/00028312027003557>
- Frank, K. A., Maroulis, S. J., Duong, M. Q., & Kelcey, B. M. (2013). What would it take to change an inference? Using Rubin's causal model to interpret the robustness of causal inferences. *Educational Evaluation and Policy Analysis*, 35 (4), 437. <http://dx.doi.org/10.3102/0162373713493129>
- Frank, K. A. (2014). *KonFound-it!*. Retrieved from <https://www.msu.edu/~kenfrank/research.htm>

## School Counselors and FAFSA Completion

- Gullatt, Y., & Jan, W. (2003). *How do pre-collegiate academic outreach programs impact college-going among underrepresented students*. Retrieved from <http://inpathways.net/precollegiate.pdf>.
- Hart Research Associates. (2012). *The College Board 2012 national survey of school counselors and administrators report on survey findings: Barriers and supports to school counselor success*. New York: The College Board. Retrieved from [http://media.collegeboard.com/digitalServices/pdf/nosca/Barriers-Supports\\_TechReport\\_Final.pdf](http://media.collegeboard.com/digitalServices/pdf/nosca/Barriers-Supports_TechReport_Final.pdf)
- Hatch, T., & Owen, L. (2015). *Strengthening School Counseling and College Advising: San Diego State University White House Post Convening Report*. San Diego, CA. Retrieved from <http://cescal.org/special-projects/white-house-convening/>
- Heller, D. E. (2006). Early commitment of financial aid eligibility. *American Behavioral Scientist*, 49(12), 1719-1738. <http://dx.doi.org/10.1177/0002764206289136>
- Hillman, N. , Gast, M. , & George-Jackson, C. (2015). When to begin? socioeconomic and racial/ethnic differences in financial planning, preparing, and saving for college. *Teachers College Record*, 117(8), 1-28.
- Holcomb-McCoy, C., Lee, V., Bryan, J., & Young, A. (2011). Ensuring college access for all: A call to the school counseling profession. *Counseling Online Today* 53(8) 42.
- Hurwitz, M. & Howell, J. (2014). Estimating Causal Impacts of School Counselors With Regression Discontinuity Designs. *Journal of Counseling and Development* 92(3), 316-327. <http://dx.doi.org/10.1002/j.1556-6676.2014.00159.x>
- Johnson, J., & Rockkind, J. (2010). *Can I get a little advice here? How an overstretched high school guidance system is undermining students*. Retrieved from <http://www.publicagenda.org/files/pdf/can-i-get-a-little-advice-here.pdf>
- Lederman, D. (2012) Higher Ed Shrinks. *Inside Higher Ed*. Retrieved from <http://www.insidehighered.com/news/2012/10/10/enrollments-fall-first-time-15-years>
- Long, B. T. (2009). Breaking the affordability barrier: How much of the college access problem is attributable to lack of information about financial aid? *National Cross Talk*, 17(2). Retrieved from <http://eric.ed.gov/ERICWebPortal/detail?accno=ED524316>
- Long, B. T., & Riley, E. (2007). Financial aid: A broken bridge to college access? *Harvard Educational Review*, 27(1), 39-63. <http://dx.doi.org/10.17763/haer.77.1.765h8777686r7357>
- MacCann, C., Lipnevich, A., & Roberts, R. (2012). New directions in assessing emotional competencies from kindergarten to college. *Journal of Psychoeducational Assessment*, 30(4), 315-319. <http://dx.doi.org/10.1177/0734282912449438>
- McCollough, C. A. (2011). Creating a college-going culture. *Science Teacher*, 78(3), 51-55.
- McDonough, P. M. (2005). *Counseling and college counseling in America's high schools. State of college admission*. Washington, DC: National Association for College Admission Counseling. Retrieved from [http://j.b5z.net/i/u/2135872/i/McDonough\\_Report.pdf](http://j.b5z.net/i/u/2135872/i/McDonough_Report.pdf)
- McDonough, P. M., & McClafferty, K. A. (2001). *Rural college opportunity: A Shasta and Siskiyou county perspective*. Reading, CA: University of California. Retrieved from [http://www.mcconnellfoundation.org/files/rural\\_college.pdf](http://www.mcconnellfoundation.org/files/rural_college.pdf)
- McKillip, M. E. M., Rawls, A., & Barry, C. (2012). Improving college access: A review of research on the role of high school counselors. *Professional School Counseling*, 16(1), 49. <http://dx.doi.org/10.5330/PSC.n.2012-16.49>
- National Student Clearinghouse. (2015). Counting It Right: National Student Clearinghouse® Research Center™ Releases Third Annual State-Level College Completions Numbers. Retrieved from <https://nscnews.org/counting-it-right-national-student-clearinghouse-research-center-releases-third-annual-state-level-college-completions-numbers/>
- Mullin, C.M., & Phillippe, K. (2011) *Fall 2011: Estimated Headcount Enrollment and Pell Grant Trends*. Washington, DC: American Association of Community Colleges. Retrieved from [http://www.aacc.nche.edu/Publications/Reports/Documents/Headcount\\_Enrollment.pdf](http://www.aacc.nche.edu/Publications/Reports/Documents/Headcount_Enrollment.pdf)
- Oliver, M., Ricard, R. J., Witt, K. J., Alvarado, M., & Hill, P. (2010). Creating college advising connections: Comparing motivational beliefs of early college high school students to traditional first-year university students. *NACADA Journal*, 30(1), 14-22. <http://dx.doi.org/10.12930/0271-9517-30.1.14>
- Owen, L. (2014) Prevent summer melt. *ASCA School Counselor* 52(2), 10-16. Retrieved from <https://www.schoolcounselor.org/magazine/blogs/november-december-2014/prevent-summer-melt>

## School Counselors and FAFSA Completion

- Perna, L. W. (2002). Precollege outreach programs: Characteristics of programs serving historically underrepresented groups of students. *Journal of College Student Development*, 43(1), 64-64. Retrieved from <http://search.proquest.com/docview/195176874?accountid=11752>
- Perna, L. W. (2004). *Impact of student aid program design, operations, and marketing on the formation of family college-going plans and resulting college-going behaviors of potential students*. New York, NY: The Education Resources Institute, Inc. Retrieved from [http://174.133.199.34/pdf/research\\_studies/ReseachReport\\_Perna.pdf](http://174.133.199.34/pdf/research_studies/ReseachReport_Perna.pdf)
- Perna, L. (2008). Understanding high school students' willingness to borrow to pay college prices. *Research in Higher Education*, 49(7), 589-606. <http://dx.doi.org/10.1007/s11162-008-9095-6>
- Perna, L. W., Li, C., Anderson, R., Thomas, S. L., Rowan-Kenyon, H. T., & Bell, A. (2008). The role of college counseling in shaping college opportunity: Variations across high schools. *The Review of Higher Education*, 31(2), 131-159. <http://dx.doi.org/10.1353/rhe.2007.0073>
- Pham, C., & Keenan, T. (2011). Counseling and college matriculation: Does the availability of counseling affect college-going decisions among highly qualified first-generation college-bound high school graduates? *Journal Of Applied Economics & Business Research*, 1(1), 12-24.
- Plank, S. B., & Jordan, W. J. (2001). Effects of information, guidance, and actions on postsecondary destinations: A study of talent loss. *American Educational Research Journal*, 38(4), 947. <http://dx.doi.org/10.3102/00028312038004947>
- Porter, J. R. (2006). Financial strains keep millions out of college, panel says. *Chronicle of Higher Education*, 53(5), 25.
- Poynton, T., Lapan, R., & Marcotte, A. (2015). Financial planning strategies of high school seniors: Removing barriers to career success. *The Career Development Quarterly*, 63(1), 57-73. <http://dx.doi.org/10.1002/j.2161-0045.2015.00095>
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods* (2<sup>nd</sup> ed., Vol. 1). Thousand Oaks, CA: Sage Publications, Incorporated.
- Roderick, M. R., Nagaoka, J., Coca, V., & Moeller, E. (2008). *From high school to the future: Potholes on the road to college*. Chicago, IL: Consortium on Chicago School Research at University of Chicago. <http://dx.doi.org/10.1177/003804071141128>
- Ross, T., Kena, G., Rathbun, A., KewalRamani, A., Zhang, J., Kristapovich, P., and Manning, E. (2012). *Higher Education: Gaps in Access and Persistence Study*. Washington, DC: U.S. Department of Education, National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2012/2012046.pdf>
- Royston, P. (2005). Multiple Imputation of Missing Values: Update of Iice. *Stata Journal*, 5(4), 527-536. Retrieved from [http://www.stata-journal.com/article.html?article=st0067\\_2](http://www.stata-journal.com/article.html?article=st0067_2)
- Rubin, D. B. (2004). *Multiple Imputation for Nonresponse in Surveys*. Hoboken, NJ: John Wiley & Sons.
- Rubin, Donald B. (2005). Causal Inference Using Potential Outcomes: Design, Modeling, Decisions. *Journal of the American Statistical Association* 100(469), 322–331. <http://dx.doi.org/10.1198/016214504000001880>
- Savitz-Romer, M. & Liu, P. (2014). Counseling and college completion: *The road ahead. A summary report from the strengthening school counseling and college advising convening*. Cambridge, MA. Retrieved from [https://www.gse.harvard.edu/sites/default/files//Counseling-and-College-Completion-The-Road-Ahead\\_0.pdf](https://www.gse.harvard.edu/sites/default/files//Counseling-and-College-Completion-The-Road-Ahead_0.pdf)
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and Quasi-experimental Designs for Generalized Causal Inference*. Belmont, CA: Wadsworth.
- Simmons, O. S. (2011). Lost in transition: The implications of social capital for higher education access. *Notre Dame Law Review*, 87(1), 206-252. Retrieved from [http://www.nd.edu/~ndlrev/archive\\_public/87ndlrv1/Simmons.pdf](http://www.nd.edu/~ndlrev/archive_public/87ndlrv1/Simmons.pdf)
- St. John, E. P., Paulsen, M. B., & Carter, D. F. (2005). Diversity, college costs, and postsecondary opportunity: An examination of the financial nexus between college choice and persistence for African Americans and Whites. *Journal of Higher Education*, 76(5), 545-569. <http://dx.doi.org/10.1353/jhe.2005.0035>
- StataCorp. (2015). STATA (Version 14). College Station, TX: StataCorp.

## School Counselors and FAFSA Completion

Swail, W. S., & Perna, L. W. (2002). Pre-college outreach programs. A national perspective. In W. G. Tierney, & LL. S. Hagedorn (Eds.), *Increasing access to college: Extending possibilities for all students* (pp. 15-34). Albany, NY: State University of New York Press.

Tierney, W. G. (2006). Financial aid and access to college: The public policy challenges. *American Behavioral Scientist*, 49(12), 1601-1603. <http://dx.doi.org/10.1177/0002764206289133>

Tierney, W. G., Corwin, Z. B., & Colyar, J. E. (2005). *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.

Tierney, M. L., Bailey, T., Constantine, J., Finkelstein, N., & Hurd, N. F. (2009). *Helping students navigate the path to college: What high schools can do*. Washington, DC: U.S. Department of Education, Institute of Education Sciences. Retrieved from <http://ies.ed.gov/ncee/wwc/publications/practiceguides>

Trusty, J., & Niles, S. G. (2003). High-school math courses and completion of the bachelor's degree. *Professional School Counseling*, 7(2), 99-107. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=12075259&site=ehost-live>

U.S. Department of Education (2013). *For each and every child—a strategy for education equity and excellence*. Washington, D.C.. Retrieved from <https://www2.ed.gov/about/bdscomm/list/eec/equity-excellence-commission-report.pdf>

U.S. Department of Education, Office of Elementary and Secondary Education (2011). *The FAFSA Completion Project: An Annotated Bibliography*. Washington, DC. Retrieved from <http://www.floridacollegeaccess.org/wp-content/uploads/2015/02/FAFSABibliography.pdf>

Venezia, A., Kirst, M. W., & Antonio, A. L. (2008). *Betraying the college dream: How disconnected K-12 and postsecondary education systems undermine student aspirations*. Stanford, CA: Stanford Institute for Higher Education Research.

Weinstein, L. A., & Savitz-Romer, M. (2009). Planning for opportunity: applying organizational and social capital theories to promote college-going cultures. *Educational Planning*, 18(2), 1-11.