1-2016

Complete Issue

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Journal *of* College Access

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About the Journal

The *Journal of College Access* (JCA) focuses on the current trends, research, practices, and development of all types of programs, policies, and activities related to the access of and success in postsecondary education. Issues of college aspiration, qualification, application, enrollment, and persistence are the primary emphases.

The Journal was co-founded by Dr. Patrick O'Connor and Dr. Christopher Tremblay. O'Connor is Associate Dean for College Counseling at Kingswood Cranbrook School in Bloomfield Hills, Michigan and is a board member for the Michigan College Access Network (MCAN). Tremblay is Associate Provost for Enrollment Management at Western Michigan University in Kalamazoo, Michigan and is an active member of the College and Career Action Network in Kalamazoo and MCAN.

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About Our Next Volume

The *Journal of College Access* (JCA) is excited to announce that our third volume will be dedicated to the issues and topics that will arise out of these events in late February/ early March: Evidence Based School Counseling Conference and the Innovations in School Counselor Preparation.

JCA is partnering with the newly-formed National Consortium for School Counseling and Postsecondary Success (NCSCPS).

About NCSCPS
The impetus for the NCSCPS emerged in response to First Lady Michelle Obama's Reach Higher initiative and the call for improvements to school counseling and school-based college and career counseling systems. Beginning with two national convenings in collaboration with the White House's College Opportunity Agenda, the NCSCPS has been established to carry the momentum of the 2014 introduction of Reach Higher initiative and the achievements that followed.

It aims to provide a leading voice for college and career services with specific attention to driving outcomes that increase equitable and accessible pathways to postsecondary success for all students, especially those who face formidable barriers to postsecondary opportunities. Our goal is to act as a catalyst to strengthen school counseling and college advising through targeted activities in five focus areas, all of which are predicated on school counselor leadership and strategic partnerships.

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From the Editors

Authored by
Dr. Patrick O'Connor
Dr. Christopher W. Tremblay

Welcome to our second volume!

Our first volume was a hit and has had nearly 1600 downloads in the first 11 months! We are excited to feature the work of 10 professionals, scholars, and researchers sharing knowledge with us. Enjoy this volume.

FEATURED ARTICLES

Increasing College Opportunity: School Counselors and FAFSA Completion
In this groundbreaking study, Laura Owen and Erik Westland confirm the power of well-trained school counselors, as their research describes the increases in student completion of the FAFSA and college enrollment as a result of FAFSA-specific training given to high school counselors.

Keeping the PROMISE: Factors Affecting Timing to Merit Scholarship Loss
Many states offer merit scholarship programs, but what key factors lead to success for the students who earn these scholarships, and affect retention rates? Jacob Gross, Angela Bell, and Matthew Berry offer fresh insights into these questions with their review of students receiving the West Virginia PROMISE scholarship.

This issue also includes our first two book reviews along with a preview of a research report from the National College Access Network (NCAN).

Special thanks to WMU graduate students Bonny Sucherman, Colleen Stano, & Grace Sims who proofread the final version before we published.

Increasing College Opportunity: School Counselors and FAFSA Completion

Authored by
Laura Owen (San Diego State University)
Erik Westlund (University of Iowa)

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

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,

School Counselors and FAFSA Completion

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

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

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

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

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

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

School Counselors and FAFSA Completion

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.

School Counselors and FAFSA Completion

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/ Mean	(SD)	Percent Missing
Dependent Variables				
FAFSA Complete	8655	0.45	0.50	0
College Enrollment	8655	0.63	0.48	0
Independent Variables				
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

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,

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

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.

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

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

$* p < 0.05$ $** p < 0.01$ $*** p < 0.001$

^ 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.

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 No Intervention		2011 Intervention		T-test 2010 vs. 2011	
	Mean	(SD)	Mean	(SD)	t	p
Dependent Variables						
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***
Independent Variables						
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		Percentage of Cases with Zero Effect Required to be Replaced to Change Inference	
68.3		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

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 the 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).

School Counselors and FAFSA Completion

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

"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. "

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 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

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

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

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.

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Closing the College Graduation Gap: National College Access and Success Benchmarking Report

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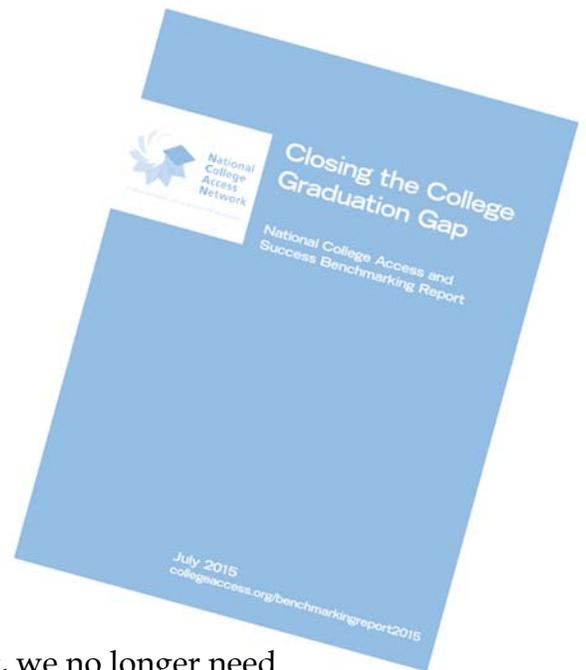
Introduction

National College Access Network (NCAN) member organizations provide college access and success services to students who have been traditionally underrepresented in post-secondary education. NCAN students are typically low-income, often of color, and frequently from families without a history of college-going. For the more than two million individuals that NCAN members assist annually, these services are often the key that unlocks the door to postsecondary education, changing lives and communities. Postsecondary opportunities are critical not just as a matter of equity (because a student's ZIP code or skin color should not predetermine their educational opportunities) but also of economics (because the United States faces a significant shortage of degrees of all kinds in upcoming decades). Given the importance of our work, the time is right for NCAN members and similar organizations to consider: How much of a difference are we making for those students?

We must answer that question with data, which have become a crucial part of the college access and success support equation. Thanks to decades of research, program experimentation, and technological advance-

ment, we no longer need to wonder whether these supports "work" for students. Virtually every organization—whether a community-based nonprofit, a public high school, a university-based outreach program, or a state higher education agency—can obtain the data about whether the students they assist enroll in, persist, and complete a postsecondary credential. The National Student Clearinghouse (NSC) provides these data affordably to public schools and other nonprofit entities that have obtained students' permission to access their records. The NSC's data reveal whether students reach the ultimate goal of postsecondary completion and provide almost real-time information to the organizations supporting students. This

allows them to adapt program strategies that are not sufficiently effective or to reach out to students who have left higher education without having earned a credential. Furthermore, the data allow us to change the national college access and success conversation from debating the perceived merits of various service delivery models to measuring actual student outcomes.

Summary of Findings

Last December, in order to further that measurement, NCAN presented the results of the inaugural National College Access and Success Benchmarking Study. Working with the National Student Clearinghouse Research Center (NSCRC), NCAN aggregated student data from 24 members, examined students' postsecondary access and success milestones, and compared NCAN-served students' progress to national results. The results were encouraging. Students served by NCAN-member programs outperform expectations for college enrollment and completion, demonstrating that current national lower levels of postsecondary attainment for poor and minority students are not destiny. Specifically, the study showed:

College enrollment rates for NCAN students were comparable to students who attended higher income high schools.
The first-year postsecondary enrollment rates for the 2007, 2008 and 2009 NCAN cohorts were 71%, 70%, and 70%, respectively. The rate for the 2013 cohort was 65%, but only six months of postsecondary enrollment data were available at the time of analysis. These

marks compare favorably to enrollment rate benchmarks released by the NSC for high-income high schools and exceeded greatly those enrollment benchmarks for low-income high schools.

NCAN students' six-year college completion rate for the high school class of 2007 (54.8%) was approaching the national rate for all high school graduates in that year (59.7%). The 59.7% represents the national completion rate for students who were age 20 or younger when they enrolled in the fall of 2007. These results support the conclusion that NCAN's members are making progress toward closing the college knowledge, opportunity, and completion gaps for the students they serve.

The enrollment and completion rates comprised an "NCAN Benchmark" against which programs can measure their own outcomes. These benchmarks are important because there is not currently a reliable annual source for data on the outcomes of low-income, first-generation students. Federal data collections and surveys are either too incomplete or too infrequent when it comes to providing a clear picture of the performance of underserved students.

Next Steps

The inaugural National College Access and Success Benchmarking Study is an important first step, but there is considerable room for expansion and improvement in this line of research. As of this writing there are 362 NCAN members, just 24 of which submitted data for

the first round of benchmarking. NCAN was clear that the sample for the study was not statistically representative of all NCAN members, let alone all underserved students nationally, but the more participating programs there are, the closer the study will come to a more representative sample of both populations.

An additional limitation of the first round of the study is the limited number of variables for which data were collected. For example, NCAN collected data on whether students received a Pell Grant or an organizational scholarship and whether their expected family contribution was above or below $5,000 (unfortunately, the sample sizes were not large enough for these variables to draw reliable conclusions about whether they were correlated with higher postsecondary enrollment and completion rates). These variables are not sufficient to disaggregate enrollment and completion outcomes by student-level characteristics and identify gaps between different groups of students. Consequently, the second round of benchmarking asks programs to report student gender, race/ethnicity, Hispanic ancestry, first-generation status, and more. Not only will these data allow for the disaggregation of results by student groups, asking programs to provide them will reinforce the importance of tracking these data in general.

Future rounds of the benchmarking study could also potentially provide some insights for the field. Although the data collected from programs reveal which students enroll and

complete, it falls short of explaining why they do so. By collecting data on, for example, the types of services received by students, and the intensity of those services, NCAN might be able to conduct statistical analyses that illuminate which services, or combination of services, is most strongly correlated with enrollment and completion. The possibilities in this line of research are nearly limitless.

Conclusion

With the results from the first National College Access and Success Benchmarking Study, we now have broader evidence than ever before that college access and success programs help the low-income, first-generation students that they serve to close the postsecondary enrollment and completion gaps. Worth noting is that even had NCAN-served students' enrollment and completion outcomes not been so encouraging, there is intrinsic value in conducting this research. Using data, rather than hunches, to better understand performance is important for both NCAN's member programs and NCAN itself.

As encouraging as this new evidence is, it is also incomplete and raises questions requiring further research. Recruiting more member programs to submit data and collecting more data points to analyze will enhance future releases of the report and make it more robust and useful to NCAN members and the college access and success field. The 2014 National Benchmarking Report opened a window through which to view the significant success member-served students are experiencing in college, and NCAN looks forward to working closely with our members to continue to improve this resource and research. JCA JCA

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Keeping the PROMISE: Factors Affecting Timing to Merit Scholarship Loss

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ABSTRACT

Despite increased attention paid to the advent and development of state merit scholarship policies (such as Georgia's Helping Outstanding Pupils Educationally) and some evidence that suggests differences in scholarship retention by socioeconomic status or other student characteristics, little empirical work has explored factors affecting scholarship retention. Moreover, no work has explored what affects the timing of scholarship loss. This study employs event history modeling to ascertain not only what factors impact students' retention of the West Virginia PROMISE Scholarship but also when these factors are most influential.

Key words: Merit aid, event history analysis, educational attainment, financial aid

INTRODUCTION

Since the early 1990s, numerous states have implemented broad merit-based state higher education scholarships. According to the National Association of State Student Grant and Aid Programs' (NASSGAP, 2013) 30 states have state merit-based programs. These scholarships vary in qualification and retention criteria, award amounts, and funding sources among other things, but share the core purposes of staunching brain drain from the state, increasing access to college, and increasing academic achievement of students (Domina, 2014). There is a growing body of evidence that merit aid programs promote college success and completion (Zhang & Ness, 2010).   However, critics of these programs have pointed to the large numbers of students who lose these scholarships before completing their degrees. Furthermore, systematic inequities in who maintains the scholarship and reaps its benefits could exacerbate the fact that these scholarships have already been shown to flow disproportionately to more advantaged students (Heller & Marin, 2002, 2004). The large state investments in these programs (more than $1.9 billion for the 2011–2012 academic year according to the National Association of State Student Grant Aid Programs' annual report on state-sponsored student financial aid (2013)) coupled with the push by the federal administration and others to focus on college completion, make it important to understand factors that contribute to scholarship loss and thereby mediate the efficacy of state merit aid in promoting college access and success.

Using event history analysis, this study examines the predictors of students losing West Virginia's Providing Real Opportunities to Maximize In-State Student Excellence (PROMISE) Scholarship. The PROMISE Scholarship began as a full-tuition-and-fees

scholarship for recent West Virginia high school graduates who earned a 3.0 core and overall high school GPA as well as achieved a minimum composite ACT score of 21.[1]

The scholarship can be renewed for eight total semesters of payment so long as students earn 30 credits per year and earn a 2.75 GPA in college their first year and maintain a 3.0 cumulative GPA thereafter (CFWV.com, 2015). West Virginia's program is an appropriate state to study since it has been around long enough to evaluate retention for a full four years, it is annually awarded to about 20% of the states' high school graduates, and as a full-tuition- and-fees scholarship can provide information about predictors of loss where the motivation would be the highest to retain the scholarship.

Literature Review
State merit aid programs have been the focus of much research into their intended as well as unintended effects (Baum & Schwartz, 1988; Doyle, 2006; Dynarski, 2004). Given that many of these programs are ostensibly designed to increase college going rates, much of the research on merit aid has focused on whether the scholarships increase access to

college. Georgia's HOPE was found to have increased enrollment in the state's colleges by 5.9%, with most of this effect at four-year schools (Cornwell, Mustard, & Sridhar, 2006). However, this increase was mostly the result of students being diverted from out-of-state to in-state institutions, not new entrants (Cornwell, Mustard, & Sridhar, 2006). Another study, however, found that HOPE increased the college-going rate of all eighteen - to nineteen-year-olds by about 7% (Dynarski, 2000). Although New Mexico's Legislative Lottery Scholarship was found to have increased four-year college enrollments, Binder and Ganderton (2002) found that this increase represented a shift in enrollment patterns from community colleges to four-year institutions, not an increase in overall access.

Some research on merit aid access outcomes has focused less on overall access and more on the differential effect on particular groups of students. Heller and Marin (2002) point to the "negative social consequences" of merit aid since these programs provide funding to many students who already could afford college and planned to attend. Conversely, research indicates that low-income and minority students are less likely to be eligible for this assistance in Georgia (Cornwell & Mustard, 2004), Massachusetts (Heller, 2004), New Mexico (Binder & Ganderton, 2004), Tennessee (Anderson & Wright, 2007), and across multiple states (Farrell, 2004). The high

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[1] Since implementation of the program, the ACT scores required to earn the scholarship have been raised three times to contain costs and now stand at requiring a composite score of 22 with a minimum score on each subject test of 20. Beginning with the high school class of 2010, the award is no longer full tuition and fees but the lesser of full tuition and fees or $4,750 per year.

school one attends has also been shown to affect receipt of Georgia's HOPE. As Cornwell and Mustard (2004) note, students who attend a large high school, or one with more African American, Hispanic, or low-income students, are less likely to receive the scholarship.

Research on the effect of different qualifying criteria has shown that increasing the academic cutoffs or tightening calculation methods excludes more minority, low-income, limited English-proficiency, and disabled students from scholarship eligibility (Cornwell & Mustard, 2004; Ledbetter & Seligman, 2003; Heller, 2004). The constriction of opportunity for low-income students is exacerbated by the fact that states choosing to venture down the merit-aid path tend to do so overwhelmingly to the detriment of need-based grants (Heller, 2002).

Research on actual enrollment of minorities and low-income students due to merit aid has been mixed. One study on Georgia's HOPE found that the scholarship had a larger positive effect on African American enrollment than for whites (Cornwell, Mustard, & Sridhar, 2006). Yet, another study using different data found that the HOPE increased inequality in college attendance between African American and white students (Dynarski, 2000). Singell, Waddell, and Curs (2006) found that the number of needy (Pell-eligible) students enrolled in

college in Georgia increased after HOPE relative to other southern states at both two-year and four-year institutions, but increases were larger at less-selective institutions.

While increasing access to college is an aim of these programs, their ultimate goal is not merely access to, but success in, college. A number of different college success metrics have been used. A few studies have had negative or non-significant findings. Cornwell, Lee, and Mustard (2005) found that prior to policy changes to deter just such behavior, HOPE decreased full-load course-taking and increased course withdrawals at the University of Georgia, particularly among students on the margin of scholarship retention. A study of engineering students in Florida found that although merit aid students had higher GPAs, they also tended to take fewer credit hours and were more likely to leave engineering (Ahang, Min, Frillman, Anderson, & Ohland, 2006). Binder and Ganderton (2004) found that the inception of the merit aid program in New Mexico did not induce appreciable changes in either retention or hours earned by students. More studies, however, have found positive effects. Henry, Rubenstein, and Bugler (2004) found using a sample of students from all public Georgia institutions that HOPE students earned more credits hours, achieved slightly higher GPAs, and were more likely to graduate in four years. In addition, students at four-year institutions were more likely to

persist. Hernandez-Julian (2010) found that South Carolina's LIFE scholarship contributed to higher GPAs for men but not women. Penn and Kyle (2007) found that the Tennessee Education Lottery Scholarship had a small positive effect on retention of continuing students. With regard to actual completion, Dynarski (2008) found that the implementation of merit aid programs in Georgia and Arkansas resulted in a three percentage point increase in college completion of an associate's degree or higher with stronger effects for women. Similarly, Scott-Clayton (2010) found that West Virginia PROMISE recipients were more likely to complete a bachelor's degree in four-years than similar students just before the implementation of the program. She attributed this gain to the incentive the scholarship provides for students to take a full load of courses and maintain a minimum GPA.

Most of this research on merit aid and college outcomes models only initial eligibility for the scholarships and does not take into account the fact that many students lose eligibility as soon as the second year. For example, of the 3,555 PROMISE Scholars who began college in the fall of 2002, 75% retained the scholarship to the second year, 60% to the third year, and 52% to the fourth year. Similarly in Tennessee, for the fall 2004 cohort, half kept the award for the second year, 36% for the third, and 32% for the fourth

(Tennessee Higher Education Commission, 2008). To the extent that merit aid effects on educational outcomes are due to the actual benefits of the financial award (allowing a student to register for more hours, work fewer hours, afford an institution which is a better fit, etc.), and not due only to the honor of being named a scholar, then loss of the scholarship would affect estimates of program effects that extend beyond the first year of college attendance. For example, Henry et al. (2004) found that at four-year institutions, advantages for Georgia HOPE scholars in retention and graduation were only significant for those students who maintained their eligibility and the positive differences in GPA and credit earning were lower for those who lost the scholarship. In fact, students who kept HOPE earned 50 more credit hours, on average, than those who lost it.

To maximize positive program effects and protect both state scholarship and student investment, it is important to understand who is most likely to lose the scholarship and why. A few studies have contributed to this understanding. Wright and Anderson (2007) showed that even controlling for high school GPA and ACT score, which predictably increase the chances of scholarship retention, Black students and students from lower income families were more likely to lose the Tennessee scholarship in the second year. Furthermore, more students who qualified for the scholarship only through high school

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"Academic momentum variables such as declaring a major, semester GPA and transferring to another institution have been shown to shape college attainment and therefore likely affect scholarship loss."

GPA, rather than through their ACT score or both lost the scholarship. Interestingly, of those students who lost the scholarship, Black students as well as higher income students, were more likely to re-enroll. Dee and Jackson (1999) found no significant differences by race but did find that students majoring in science, engineering, and computing were more likely to lose Georgia's HOPE Scholarship than students in other majors. They pointed to the inequity here for students majoring in subjects where higher grades are more difficult to earn and the incentive this inequity may provide for students to not major in these fields. Another study of Georgia students found that students who lost the HOPE were less likely to have used recommended financial management practices and had higher credit card and student debt than those who retained the scholarship (Dynarski, 2000). This study does not imply causality in either direction but suggests that those students who lose the scholarship may be more financially vulnerable.

These studies of factors related to state merit scholarship loss leave out variables shown in other studies to be related to college persistence and completion. First, in addition to high school GPA and ACT score, academic preparation level is also indicated by whether students require remediation in college and whether students have earned college credits while in high school. Given that campuses

vary widely in size, mission, resources, and peer composition, it is important to assess the extent to which these variables may be related to scholarship loss. Academic momentum variables such as declaring a major, semester GPA and transferring to another institution have been shown to shape college attainment and therefore likely affect scholarship loss. Finally, student costs at different institutions, as well as their levels of financial aid, may be related as none of the state merit aid scholarships cover expenses beyond tuition, fees, and in a few cases, books. Finally, given that students can lose the scholarship at different points in time and that many of these predictors can change values over the course of a student's college career, it is necessary to use modeling techniques that can accommodate the longitudinal nature of the data as well as differing effects of the predictors over time.

The research question addressed by this study is:

For first-time, first-year students receiving a full tuition and fees state merit scholarship in a state system of public, four-year institutions, what are the demographic, academic preparation, institution, college enrollment, and cost and financial aid predictors of losing eligibility for that scholarship at any time prior to exhausting full benefits?

Conceptual Model

Our conceptual model rests on approaches developed in the study of student departure from higher education. Specifically, we utilize a student adjustment framework (Nora & Cabrera, 1994) to guide empirical analysis of timing to scholarship loss. The student adjustment model hypothesizes that students' experiences at postsecondary institutions occur in social and academic domains. The social domain is comprised of interactions with students, staff, and faculty that are informal in nature. Academic interactions are similar to those in the social domain, but are characterized by a greater degree of formality, such as structured co-curricular activities lead by student affairs staff or academic courses taught by faculty. Experiences in both domains are thought to propel the affective and intellectual development of the student that in turn affects institutional and goal (i.e., earning a degree) commitment. Moreover, experiences in the social and academic

domains are seen as interdependent and intertwined. Pre-college ability, external factors (such as ability-to-pay or parental encouragement), academic and intellectual development, and academic and social integration are all components of the student adjustment model (Nora & Cabrera, 1994). Similarly, we hypothesize that students' retention of the scholarship is affected by students' experiences in academic and social domains that in turn affect goal commitment. Scholarship loss may result from failing to enroll in school without an approved leave, in which case, the student adjustment theoretical approach to departure directly applies. Scholarship loss may also result from failure to complete the requisite number of credits or grade point average each year. These intermediate academic outcomes are assumed to be shaped not only by academic interactions and development but also by social interactions and development, prior ability, and external factors. We discuss the operationalization of our conceptual model in greater detail below.

A challenge in conducting this analysis is the relative paucity of empirical and conceptual work on loss of merit scholarships. Prior research demonstrates factors such as academic preparation play a role in students' initially receiving scholarships. However, with the exception of a study (Dee & Jackson, 1999) of factors affecting loss of the Georgia HOPE scholarship, our review of the

literature yielded no other studies similar to this one. Additional conceptual and empirical work is necessary to assess the extent to which the student adjustment model is a valid framework to guide empirical analysis.

Empirical Model

The outcome of interest is whether a student lost the PROMISE Scholarship. Loss of PROMISE can occur through not enrolling in school without obtaining a leave, not maintaining adequate academic progress defined as achieving a 2.75 GPA the first year and a 3.0 cumulative GPA thereafter, or not earning 30 credit hours each year. Once a student loses the Scholarship, it cannot be regained except if lost under extraordinary circumstances, and then, only through an appeals process. Therefore, a student has permanently exited the sample once the event of interest has occurred. Of the 2,530 PROMISE recipients, about 48% (n=1,216) lost their Scholarship prior to graduation. Variables included in the models were based on the conceptual model as well as prior research. They included measures of (a) student characteristics, (b) academic preparation, (c) enrollment characteristics, (d) institutional context (including both social and academic domains), and (e) cost and financial aid. Table 1 (see page 38) lists each construct as well as how it was operationalized in our empirical models.

Student Characteristics

Student background variables shown in previous research to shape college outcomes and included here are gender, race/ethnicity, and economic disadvantage. Economic disadvantage is a composite variable defined by the West Virginia Higher Education Policy Commission (WVHEPC) and applies to any student whose (a) parent(s), or guardian is a recipient of public assistance; (b) is institutionalized or under State guardianship; or (c) qualifies by virtue of a needs test for federal or state needs-based assistance.

Academic Preparation

Academic preparation has also been shown to be strongly related to postsecondary educational attainment. Thus we have included students' composite ACT scores (or an SAT equivalent), high school grade point average (GPA), and the number of college credits that students earned while in high school, and whether the student was noted as academically disadvantaged. This category refers, in this population, to students who were required to take developmental education.

Enrollment Characteristics

Once a student is enrolled in college, their decisions and actions are hypothesized to shape retention of the scholarship. These variables are students' decisions to enroll in a public two-year college rather than a four-year institution, transferring to another

Table 1

Operationalization of Timing-to-Scholarship Loss Model

Variable		Definition
Dependent Variables		
Loss of PROMISE Scholarship		The first fall during which the student was not reported as receiving PROMISE Scholarship funds (1=yes, 0=no)
Student characteristics		
Female		Gender reported by institution (1=female, 0=male)
White		Any person having origins in any of the original peoples of Europe, the Middle East, or North Africa as white (1=yes, 0=no). All students from a racial/ethnic minority serve as the reference category.
Economically disadvantaged		Refers to any of the following: (a) the student, parent(s), or guardian of the student is a recipient of public assistance; (b) the student is institutionalized or under State guardianship; (c) the student qualifies by virtue of a needs test for federal or state need-based aid. (1=yes, 0=no)
Academic preparation		
ACT Score		Composite ACT score reported by institution. If student only took SAT, combined score has been converted to ACT score via SAT/ACT concordance available at: http://www.act.org/solutions/college-career-readiness/compare-act-sat/#.UHLpmq52NEM
High school GPA		Student's high school Grade Point Average on a 4.0 scale.
College credits earned in high school		Total college hours a student earned while in high school.
Academically disadvantaged		Refers to a student requiring developmental education as determined by college admissions tests or institution specific test. (1=yes, 0=no)
Enrollment Characteristics		
Enrolled in community and technical college		Student enrolled at one of the state's community and technical colleges as opposed to a public, four-year institution. (1=yes, 0=no)
Transferred		Student transferred from another institution
Declared major		Student had a designated major (1=yes, 0=no)
STEM major		Student was enrolled as a STEM major during any term examined. (1=yes, 0=no)
Institutional Context		
Institutional selectivity		Average percent of applicants admitted during years analyzed. Community and technical colleges assumed 100%.
% Institution Pell recipients		Percent of institution's undergraduate headcount enrollment that are Pell recipients that academic year.
% Institution Racial/Ethnic Minority		Percent of institution's undergraduate headcount enrollment that are Black, Hispanic, Asian or Pacific Islander or American Indian/Alaskan Native that academic year.
Instructional expenditures		IPEDS data on expenses of the colleges, schools, departments, and other instructional divisions of the institution and expenses for departmental research and public service that are not separately budgeted.
Academic support expenditures		IPEDS data on expenses of activities and services that support the institution's primary missions of instruction, research, and public service.
Student services expenditures		IPEDS data on expenses for admissions, registrar activities, and activities whose primary purpose is to contribute to students emotional and physical well - being and to their intellectual, cultural, and social development outside the context of the formal instructional program.
Cost and Financial Aid		
Subsidized loans		Dollar amount of federal subsidized loans.
Unsubsidized loans		Dollar amount of all unsubsidized loans (federal, state, institutional and other).
Semester Tuition and Fees		Tuition and mandatory fees
Unmet need		Tuition and mandatory fees plus a local cost of living estimate minus all forms of grant aid.

institution, declaring one's major, and being a science, technology, engineering, or mathematics (STEM) major. Because students often begin rigorous related course sequences prior to formally declaring a STEM major, we have operationalized this variable as whether a student was ever a STEM major to capture the effect of being in a STEM trajectory even prior to declaration.

Institutional Context

It is also hypothesized that various institutional characteristics shape the likelihood of a student losing his or her PROMISE Scholarship. The first of these is the size of the institution's enrollment (small, medium, or large). Next are a group of variables that shape the peer effects present on a campus: institution selectivity (percent admitted), and the percent of enrollment that are Pell recipients or that are from a racial/ethnic minority group. Finally, we model institutions' expenditures in three areas to determine their relationship to scholarship loss: instruction, academic support, and student services. Expenditures in these areas may promote student success and thereby student retention of their award.

Cost and Financial Aid

The final grouping of variables follows from extensive research showing relationships between student costs and financial aid on the one hand and college retention and completion on the other. We extend these

findings to explore the relationship of cost and academic scholarship retention. We explore the effect of the amount of tuition and mandatory fees, or, given that the award is equal to full tuition and fees, the award value. We include net cost of attendance which is tuition and fees plus a local cost of living estimate minus total grant aid received. And finally, we test the effect of both federal subsidized loans and all unsubsidized loans on award loss.

Methodology

While educational attainment has long been acknowledged to be a temporal process (Tinto, 1982; St. John, Cabrera, Nora, & Asker, 2000), until recently most research has employed static cross-sectional analyses (DesJardins et al., 2002a). Scholars have begun adapting event history techniques used in other fields to the study of higher education (e.g., Chen and DesJardins, 2008; DesJardins, 2003; DesJardins et al., 2002a, 2002b; DesJardins, Ahlburg, and McCall, 2006; Ishitani, 2006). Event history analysis (EHA) is a group of techniques that use longitudinal data to estimate the influence of relevant variables on the likelihood of events of interest (Allison, 1984). EHA explicitly incorporates the temporal dimension in estimating coefficients and the overall fit of the model, while allowing for variation from time period to time period in explanatory variables. For a more detailed discussion of the use of event history techniques in

studying educational attainment, see DesJardins (2003).

Data

Data for this study come from the West Virginia Higher Education Policy Commission (WVHEPC) which maintains a statewide longitudinal data system (SLDS) consisting of student information systems (SIS) data from each institution. SIS data are collected at the student level for enrollment-related transactions—for example, courses taken, grades received, race, ethnicity, and all other information necessary for institutional business. These data include information on standardized testing; academic preparation; and any financial aid from institutional, state, and federal sources. SIS data represent the universe of students enrolled in public postsecondary institutions for students attending any public postsecondary institution in the state. Financial aid information includes award amounts by type of aid as well as source of aid (institution, state, federal government) for each academic year. Institutional data regarding enrollment, racial composition, and selectivity were collected from the Integrated Postsecondary Data System (IPEDS). The institutional proportion of students receiving a Pell grant was calculated from WVHEPC data. Institutional expenditures were obtained from annual institution financial statements available on the WVHEPC website.

Sample

The sample consisted of first-time, in-state, degree-seeking freshmen who enrolled in public baccalaureate degree-granting institutions in West Virginia in the fall term of 2002 and who received the PROMISE Scholarship (N=2,593). Given the absence of information on students' educational aspirations and consistent with prior research (Adelman, 2006) students were included only if they were seeking a bachelor's degree and earned six or more credits during the first fall/spring academic year. Students were tracked for four years, each fall and spring term for a total of eight possible observations per student.

Method

A series of discrete-time models were estimated in Stata/MP version 12.1 with time (t) measured in academic semesters. Discrete-time models are appropriate in instances where time is measured in discrete units and when many events of interest occur at the same time (i.e., are tied) (Allison, 1984; DesJardins, 2003; Singer & Willett, 2003). Equation 1 denotes the general form of the model where $h_i(t)$ represents the hazard for observation i at time t. The five blocks of variables from the conceptual model (academic preparation, student background, academic domain, social domain, and financial aid) are represented by x_1 through x_5. To account for clustering of students by campus and multiple observations per

student (as is common in person-period data files), standard errors were estimated using the *vce(cluster)* option in Stata.

Equation 1.
General Form of Discrete-Time Survival Model

$$\text{logit} h(t_j) = \begin{aligned}&[\alpha_1 D_1 + \alpha_2 D_2 + ... + \alpha_7 D_7] + \\ &[\beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5]\end{aligned}$$

All time-varying variables were measured each semester except for financial aid amounts. Annualized financial aid data were split evenly across the terms in which a student enrolled for each academic year. Several assumptions underlie the event history model employed here. First, the discrete-time proportional model assumes that the ratio of the hazard for any two individuals is constant and is not dependent on time. However, discrete-time event history models are model robust to violations of the proportional hazards assumption (Allison, 1984). Analysis of the Schoenfeld residuals indicated that our models violate this assumption (χ^2=82.93, df=19, p-value<0.001).

A second assumption is that the covariates are measured without error and that no covariates that affect the hazard have been omitted from the model. In the limitations section, we discuss concerns regarding unobserved differences with respect to self-selection. As Cellini (2008) notes, endogeneity—caused by reverse causality or

self-selection bias within models—limits our ability to make causal inference. Absent controlled experimentation, it is difficult to discern to what extent unobserved student characteristics, such as motivation, affect the outcomes of interest. Selection bias can be particularly thorny in the study of merit aid because students may self-select at key points along their educational trajectory. For example, prior to entering college, institutional offers of aid may affect which institution a student attends, initial commitment to that institution, and subsequent decisions to re-enroll (Singell, 2004). Moreover, some scholarships are awarded only to students whose propensity to apply for aid may be indicative of underlying (and unmeasured) characteristics. Applying for aid is hypothesized to be related to factors such as motivation, parental encouragement, and access to information about college (DesJardins, 2001)—all of which can affect propensity to persist. For more detailed discussion on selection bias and financial aid research see Alon (2005) Deming & Dynarski (2009), Dowd (2006), or Titus (2007).

Two steps were taken to address unobserved differences that may affect the outcomes of interest. Key variables were lagged to reduce the effects of reverse causality. For example, loan amounts from the first year were used to predict likelihood of exit during the second year. This helps eliminate the question of

whether enrollment lead to taking out loans or taking out loans lead to enrollment. Conceptually using lagged variables also makes sense. What a student does and experiences one year affects what happens the following year. Moreover, this helps eliminate issues of state dependence in our explanatory variables.

Second, we estimated a series of frailty models. Frailty models are the event history equivalent of a random effects model, which assumes unmeasured covariates introduce heterogeneity (Wienke, 2003). As a check of robustness, we estimated parametric (normal as well as gamma mixture distribution), as has been done in prior research (e.g., Chen & DesJardins, 2010). Finally, it is worth noting that because our analysis focuses on timing to scholarship loss, we eliminate an element of self-selection.

Our third and final assumption is that censoring is unrelated to the event of interest. Censoring occurs in EHA when complete information about survival time is unavailable (Leung, Elashoff, & Afifi, 1997). If the censoring mechanism is unobserved and related to the outcome of interest, our results are likely to be biased. We address left censoring (i.e., students who began college before our observation period) by including only first-time, first-year entrants in the sample. Right censoring occurs when student do not experience the event of interest by the

end of the observation period (i.e., losing the PROMISE Scholarship). For the purpose of this study, we assume independent censoring with respect to right censoring. That is, survival time to scholarship loss is independent of observations being censored. Students are considered censored at the time of scholarship loss.

Analysis

In total, three models were run with different assumptions regarding hazard and with respect to the students included. Following estimation of the main proportional hazards model, an analysis of the Schoenfeld residuals indicated that the hazard was non-proportional (i.e., varied over time with respect to the baseline hazard) for high school GPA, college semester GPA, institutional selectivity, Higher Education Grant Program (HEGP) receipt, and unmet need. Although Allison (1984) notes that discrete-time models are robust to violation of the proportionality assumption, we ran a non-proportional model in which these variables were interacted with a linear function of time. In addition, as a robustness check, we ran a third model that excluded students who lost PROMISE during the middle of an academic year (n=62). These students lost the Scholarship due to dropping out of school in between terms, not due to failure to meet renewal requirements at the end-of-year progress checks. We hypothesize that this may be due to a variety of reasons (e.g., obtaining a job, pregnancy) dissimilar

from those shaping PROMISE loss due to not maintaining eligibility requirements. Finally, we estimate a frailty model which assumes unmeasured covariates introduce heterogeneity (Wienke, 2003). As a check of robustness, we estimated parametric (gamma mixture distribution) frailty model, as has been done in prior research (e.g., Chen & DesJardins, 2010). The frailty model was not statistically different from the main model. Overall, results from these three models did not differ substantively from those of the main model, therefore we focus our discussion on the main model (additional details regarding the other models are available on request).

Limitations

Before considering the findings, it is important to acknowledge some limitations of this work. This study is limited by its examination of only one cohort of students. Later cohorts should be examined as data permits because the scholarship criteria have risen and this may affect the relationship between predictors and scholarship loss. The study is also limited in its study of one state. West Virginia is a unique state and the PROMISE is a unique program and thus the findings here may not be generalizable to other settings and other scholarships and grants. The study would also benefit from the addition of data regarding the rigor of high school preparation as well as income of all participants. High school GPA, ACT

scores, and an economic disadvantage variable are employed here because they are available for all students. Despite these limitations, the study provides important insights into the demographic, academic, financial, and institutional factors shaping merit scholarship loss over time.

Empirical Results

Descriptives
Table 2 (see page 44) provides descriptive information on the sample of 2,530 PROMISE recipients in their first term of enrollment. Over half of the sample is female (57.2%) and 97.1% is white. By comparison, whites made up 95% of the full cohort of in-state first-time, first-year students at these institutions as well as the overall population of West Virginia (U.S. Census Bureau, 2009). Twenty-four percent of PROMISE recipients are characterized as economically disadvantaged meaning that they have qualified for need-based assistance such as a Pell grant or that the student or his/her parents or guardians have qualified for public assistance. This compares with 31% for the full student cohort. The proportion of students classified as academically disadvantaged due to being enrolled in remedial courses is 6.1% (for this cohort of students, there were not minimum subject test requirements so students could qualify for the scholarship with their composite ACT but still need remediation in a subject). The average high school GPA was a

Table 2

Sample characteristics by scholarship loss, first year enrolled

Variable	Full Sample	Percentage/Mean (S.D.) Students Retained PROMISE	Students Lost PROM- ISE
N	2,591	1,313 (50.7%)	1,278 (49.3%)
Demographic Characteristics			
Female	57.2%	61.5%	52.7%
White	97.1%	97.9%	96.2%
Economically Disadvantaged	24.0%	19.8%	28.2%
Academic Preparation			
Academically Disadvantaged	6.1%	4.5%	7.7%
High School GPA	3.68 (0.271)	3.75 (0.250)	3.61 (0.271)
Composite ACT	24.4 (2.872)	24.9 (2.978)	23.8 (2.660)
College credits in H.S.	5.16 (6.597)	6.11 (7.083)	4.2 (5.903)
Institution Variables			
Percent Admitted	87.1 (7.72)	87.8 (6.93)	86.4 (8.39)
Percent Non-white	6.8 (1.90)	6.6 (1.63)	7.0 (2.12)
Percent Pell	28.2 (6.72)	27.9 (6.59)	28.5 (6.83)
Instruction Expenditures	5,271 (1178)	5358(1156)	5,181 (1194)
Academic Support Expenditures	1,058 (290)	1,077 (281)	1037(297)
Student Services Expenditures	838 (145)	836 (137)	841 (154)
Declared Major	83.1%	83.6%	82.6%
STEM Major	26.5%	25.1%	28.0%
Semester GPA	2.99 (0.922)	3.30 (0.831)	2.66 (0.897)
Full-Time Student	100.0%	100.0%	100.0%
Cost and Financial Aid			
Semester Tuition and Fees	1,535 (89.4)	1,541 (89.9)	1,530 (88.4)
Receiving Higher Education Grant	22.4%	18.8%	26.1%
Subsidized Loan Amount ($)	120 (335)	95 (309)	145 (358)
Unsubsidized Loan Amount ($)	336 (782)	271 (695)	40 2(857)
Unmet need ($)	3,189 (1325)	3,098 (1288)	3,283 (1356)

3.68; the average ACT score was 24.4; and the average number of college credits earned in high school was 5.16. In the first term, 73.2% of students were in large institutions (defined as undergraduate student body of more than 8,000) and 8.8% were in small institutions (up to 3,000 undergraduates) with the remaining 18.1% in medium-sized institutions (3,000-8,000 undergraduate students). No students were at community colleges in the first term by definition of the sample. The average percent of applicants admitted at their institution was 87.1; percent of non-white students at the institution was 6.8; and percent of students that received Pell at the institution was 28.2. Regarding academic progress variables, 83% of these students had declared a major and a quarter (26.6%) were designated as STEM majors. By definition of the sample as first-time freshmen scholarship recipients, no students were transfers in this first-term but we model transfer status in later time periods.

In terms of costs and financial aid, average semester tuition and fees was about $1,535. The average subsidized loan amount for the semester (with those students not taking out loans included in the calculation) was $120 while the average unsubsidized loan amount was $340. The average amount of unmet need was $3,190.

The second and third columns of Table 3 show the same descriptive data for the populations of PROMISE recipients who retained the scholarship for the full eight terms (or graduated earlier) and those who ever lost it. About half of student (49.3%) lost the scholarship prior to graduating during the time period studied. Compared with students who kept the PROMISE, students who lost the scholarship consisted of fewer female and white students and more economically and academically disadvantaged students. Predictably, students who lost the scholarship had lower high school GPAs, composite, ACTs, and college credits earned in high school. Fewer of them were at large institutions and more were at small and medium size institutions. There was very little difference in the institutions attended in terms of selectivity or demographic composition. However, students who lost the scholarship were at institutions with lower instructional and academic support expenditures, based on data reported to the Integrated Postsecondary Education Data System. A slightly lower proportion of students who lost the scholarship had declared a major in their first term but a slightly higher proportion ever became STEM majors. These students had a semester GPA their first term 0.64 lower than those students who retained the scholarship. While there was little difference in tuition and fees, a larger proportion of students who lost the scholarship were receiving the Higher Education Grant and these students had higher subsidized and unsubsidized loans as

well as unmet need. Overall the students who lost the scholarship were more likely to be disadvantaged economically with lower academic preparation levels attending schools that spent less on instruction and academic support. Though these students had lower tuition, they had higher loans and net cost. None of these descriptives are very surprising. What remains to be seen is which of these predictors contribute to scholarship loss controlling for the other independent variables and how that relationship might vary over time.

Descriptive Findings for Event Patterns

Descriptive analysis shows that losing PROMISE was most common at the end of the first (n=679) and second years (n=389) of enrollment (See Table 2). Students losing the award in the third, fifth, and seventh terms coincides with the academic progress checks conducted after each year of enrollment to determine renewal eligibility. By the end of the study period, about 49% of students had lost their Scholarship. The incidence rate (i.e., average proportion of students losing the Scholarship across all periods) was about nine percent.

Table 3
Kaplan-Meier Survival Estimates, Timing to PROMISE Loss.

Term	Beginning Total	Lost Scholarship	Net Lost	Survivor Function	Standard Error
2	2593	27	0	0.9896	0.0020
3	2566	679	0	0.7277	0.0087
4	1887	18	0	0.7208	0.0088
5	1869	389	0	0.5708	0.0097
6	1480	9	0	0.5673	0.0097
7	1471	148	0	0.5102	0.0098
8	1323	8	1315	0.5071	0.0098

Differences emerged with respect to likelihood of Scholarship loss by gender, economic advantage, and academic advantage. A Log-Rank test for equality of Scholarship loss survivor functions confirms the conclusion that there is a significant difference with respect to likelihood of PROMISE loss and gender, race/ethnicity, socioeconomic status, and academic preparation.

Table 4
Equality of Survivor Functions

Variable	Test			
	Log-Rank	Wilcoxon	Tarone-Ware	Peto-Peto
Economic Disadvantage	27.89	28.1	28.17	28.58
Academic Disadvantage	11.34	9.41	10.36	10.2
Female	20.79	19.6	20.34	20.15
White	7.89	7.27	7.62	7.54

Note. χ2 values shown. Values significant at the 0.01 level.

Of course, bivariate analysis does not control for the complex set of factors that affect students' propensity to lose the Scholarship. We consider next findings from the inferential models.

Inferential findings

Overall, we find that students were most likely to lose the scholarship at the end of their second year of enrollment compared to losing it after their freshman year, controlling for all else. There was no significant difference in the likelihood of losing the scholarship at the end of the first or third year. We discuss findings for each conceptual block of variables next.

Student background

Once we control for academic preparation, college contexts, college enrollment characteristics, and financial aid, we find that women are still less likely than men to lose the scholarship (see Table 5 on page 48). There was no significant difference in losing the scholarship for white students compared to students of color, although some caution is warranted in these results given the small numbers of racial/ethnic minority students who received the scholarship. Socioeconomic status was not significantly related to likelihood of PROMISE loss. Academic disadvantage (i.e., taking developmental education) was related to increased likelihood of losing the scholarship.

Academic preparation

As might be expected, given the academic criteria necessary to obtain and retain the Scholarship, the academic preparation variables were significantly related to losing the PROMISE. Specifically, an increase in ACT composite score as well as high school GPA was associated with decreased likelihood of losing PROMISE. Furthermore, having earned college credits in high school was related to lower likelihood of losing the award.

College enrollment characteristics

Few of the behaviors of students once enrolled in college were related to PROMISE loss in the final model, controlling for student background, academic preparation, institutional context and financial aid. Being a STEM major was weakly (at the 0.10 level of significance) associated with increased likelihood of losing the scholarship. Most pronounced was the relationship between transferring and scholarship loss. The odds of scholarship loss increased almost five fold for students who transferred at any point in time, controlling for all else. Having a declared major and also enrolling in a community college were unrelated to losing the award.

Campus contexts

Several variables related to the type of institution in which a student was enrolled proved to matter in PROMISE loss. Enrolling in a more selective institution was related to a

Table 5
Survival Model Results, Timing to PROMISE Loss

Variable	Coefficient (Standard Error)
Compared to end of 1st year	
End of 2nd year	1.12 (0.07)****
End of 3rd year	0.08 (0.10)
Academic preparation	
High school credit	-0.01 (0.00)***
High school GPA	-0.86 (0.11)****
ACT score	-0.06 (0.01)****
Student characteristics	
Economic disadvantage	-0.13 (0.08)
Academic disadvantage	0.24 (0.11)**
Women compared to men	-0.20 (0.06)***
White students	0.10 (0.17)
Enrollment characteristics	
Enrolled in STEM major	0.11 (0.07)*
Transferred	1.57 (0.17)****
Declared major	0.09 (0.10)
Semester GPA	-0.54 (0.11)****
Enrolled in community college	0.01 (0.47)
Institutional context	
% Institution Pell recipients	0.02 (0.01)**
Institutional selectivity	-0.01 (0.00)***
%Nonwhite at institution	0.04 (0.02)**
Instructional expenditures	-0.06 (0.05)
Academic support expenditures	0.91 (0.25)****
Student services expenditures	-0.01 (0.32)
Financial aid	
Subsidized loan	-0.06 (0.05)
Unsubsidized loan	0.14 (0.03)****
Unmet need	0.00 (0.00)****
Log Likelihood	-4384.78

n= 20,213

****$p<0.001$. ***$p<0.01$. **$p<0.05$. *$p<0.10$

moderate decrease in likelihood of loss. Having a higher proportion of students that are receiving Pell grant at one's institution was also related to increased odds of losing the award as was the percent of the institution's enrollment that were racial/ethnic minority students. Of the three institutional expenditures variables included in the model, only academic support expenditures were significantly related to losing the scholarship. An increase in institutional spending on academic support services was associated with about a 2.5 times increase in the odds of losing the scholarship, holding all else constant.

Cost and financial aid
The final block of variables are those related to cost and financial aid. Students with higher amounts of unsubsidized loans were more likely to lose their award. The reasons for this are difficult to discern. It is possible that these students are those whose families have levels of financial need that are not met by need-based aid. Unsubsidized loans are available to students up to federal limits that are inclusive of subsidized as well as unsubsidized loans (e.g., up to $5,500 for first year students). Data from the National Postsecondary Student Aid Study (NPSAS: 12) suggest a modest correlation between the number of hours worked per week and the amount of unsubsidized loans a student borrows. Perhaps, students who work more hours have less time to devote to their

courses, and are more likely to lose the scholarship. Additionally, the negative relationship between loans and educational attainment has been observed in other (e.g., Dowd, 2006) studies. Unmet need was negatively related to keeping PROMISE and statistically significant, but it was substantively unimportant given the small effect size (-0.002).

DISCUSSION
The descriptive findings that men and students who are either economically disadvantaged or required to enroll in remedial courses are more likely to lose their PROMISE Scholarship is consistent with prior research on educational attainment (Cabrera, Nora, & Castañeda, 1992; St John, Paulsen, & Carter, 2005). At least descriptively, their likelihood of keeping a merit-based scholarship is consistent with their lower rates of postsecondary completion and the incentive provided in the scholarship does not change this disadvantage.

Differences by gender and academic disadvantage persist even after controlling for variables related to academic preparation, institutional context, academic progress, and finance. This is intriguing given that about 80% of those students classified as academically disadvantaged were women. Nonetheless, women were better prepared academically in terms of the number of college credits they had earned in high school

and their high school GPA (see Table 6). Men had somewhat higher ACT scores than women.

Table 6
Academic preparation by gender

	Women	Men
	Mean	
HS Credits	5.34	4.92
HS GPA	3.72	3.64
ACT	24.07	24.74

Note: All differences statistically significant at 0.001

This warrants additional investigation, but it may be suggested that use of ACT scores to place students in remedial education (thus defining them as academically disadvantaged) disproportionately classifies women as unprepared for college. A 2001 report by the West Virginia Association for Developmental Education (Parks, 2001) expressed concern about the use by the state college system of ACT and SAT scores for placement into remedial education despite these tests not being created for that purpose. Moreover, these findings point to the need for additional work on how college experiences affect the likelihood of losing PROMISE and how this differs by gender. Although women were overrepresented among those placed in remedial education, some combination of their academic preparation and college experiences may have contributed them to

still being more likely than men to keep the PROMISE Scholarship.

In the area of academic preparation, it is not surprising that students with higher high school GPAs and standardized test scores are less likely to lose PROMISE. It is surprising, however, that the variable for academic disadvantage was not significant. While it seems contradictory that students receiving a merit scholarship should need remediation, with this cohort of students, there was not a minimum subscore requirement on the ACT and so students could achieve the overall minimum composite ACT score but still place into remediation in a particular subject. Remediation today of incoming PROMISE Scholars would be even lower since the composite score requirement is higher and the minimum subscores in reading, math, science, and English are higher than the Higher Education Policy Commission cutoffs for placement into remedial services. While it is encouraging that this population, despite academic deficits, is maintaining the scholarship at equal rates, more research is needed to understand if they are on track to graduate or if the time spent in remedial courses has slowed their progress. These findings suggest that institutional context in terms of student body composition plays a role in scholarship maintenance. When only examining students who lost the scholarship at progress checks (end of years), students at less selective institutions were less

likely to lose the award. Perhaps in the context of low selectivity, the grades to maintain the scholarship are easier to earn. Or perhaps in less selective institutions, there are better services available to support students academically and otherwise. The finding that the students who leave mid-year are pulling the results in the opposite direction is interesting and bears further research to determine how selectivity might be related to the reasons that students lose the scholarship by not enrolling rather than having it revoked. The finding that PROMISE recipients at schools with higher proportions of non-White students and Pell recipients are more likely to lose the award seems consistent with other research that finds that minority and low-income students themselves are less likely to complete degrees. Yet this does not tell us why, controlling for student race and economic disadvantage, students at these schools are more likely to lose the award. It may be that these variables are proxies for other variables such as the proportion of first-generation college students, the level of curricular preparation for college, family/cultural orientation toward college, the amount students have to work to pay for college, and general levels of social and cultural capital available at the school. While good data exists on how outcomes at schools vary by their sector, control, and selectivity, there is little research available on how outcomes vary by school racial/ethnic and socioeconomic composition.

Among the college enrollment characteristics, higher semester GPA was associated with lower odds of losing the scholarship. Given that maintaining a certain GPA is required to renew the scholarship, this makes sense. Having declared a STEM major was associated with decreased odds of keeping the scholarship, although the coefficient was marginally significant statistically. It is possible that STEM majors are more challenged to maintain the GPA requirement necessary to keep the scholarship. Transfer increases likelihood of losing the scholarship. Given that this dataset only includes students beginning at four-year institutions, transfer would either have to be lateral, to another four-year institution, or reverse, to one of the state's community and technical colleges. The approximately one-third of transfers to Marshall University and West Virginia University may have been planned but the 43% of lateral transfers to the regional campuses probably were due to a poor fit, academic or other difficulties, or to move closer to home. The approximately one-quarter of the transfers that took place to a community college likely were also unplanned and due to difficulties. Transfer itself would entail fitting in at a new institution and has been shown in the literature (Bahr, 2012; Wang, 2009) to be associated with lower grades. Further research is needed to understand the timing of transfer and scholarship loss and also to assess the prevalence of transfer after scholarship loss.

Intriguing findings emerged among the finance variables. An increase in unmet need (tuition and fees and a cost of living estimate minus all forms of grant aid) was shown to decrease chances of losing the scholarship beginning with the third term, but the effect size is so small as to render the practical implications of this finding meaningless. More interesting is the relationship between unsubsidized loans and scholarship loss. An increase in subsidized loans was associated with increased odds of losing the scholarship. The same was not true of subsidized loans. Unmet need captures what students actually have to pay after receiving their PROMISE and other awards. Those students with higher unmet need may either be well-off students who do not need PROMISE and therefore are not incentivized to strive to keep it or poor students who are burdened by unmet need and are working to meet costs. The analysis would benefit from both income and hours worked data. The positive relationship between unsubsidized loans and PROMISE loss also illustrates the adverse effect that financial burden can have on academic outcomes. These findings are consistent with the Georgia study (Dynarski, 2002) that found high student loan debt associated with HOPE loss.

In this study, we continue an important line of research into the influence of state finance policy on college persistence and graduation rates. While there has been a great deal of research on the effects of merit aid on initial enrollment, this study adds to the smaller body of work on the relationship of merit aid to continuation and graduation. DesJardins (2002) and others have pioneered the use of event history methods to explore the relationship between forms of financial aid and its timing on student enrollment behaviors. This study benefits from that work and adapts it to the state policy arena by including a whole state of public institutions and parsing out the individual contribution of state aid. The results of this study give insight into the relative effectiveness of different forms of state aid expenditure in encouraging completion. JCA

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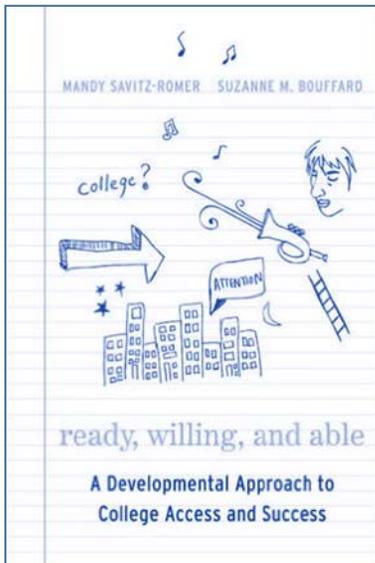
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JCA

Book Review:
Ready, Willing, and Able: A Developmental Approach to College Access and Success

Reviewed by Christie Fox (*Utah System of Higher Education*)

I first heard of Mandy Savitz-Romer and Suzanne M. Bouffard's *Ready, Willing, and Able: A Developmental Approach to College Access and Success* during one of the Department of Education's College Access Affinity calls. Greg Darnieder, Special Assistant to the Secretary for College Access said, "I read this book, and then I read it again." It was enough to make me take notice.

It is easy to see why Darnieder was so taken with the book as it outlines in clear, accessible language what college access providers can do to improve their practices and programs. The book could be useful for practitioners at every level; indeed, my office used it as professional development training to get everyone thinking about the practical aspect of our work, which so often remains in the abstract.

This book seeks to answer the question posed by many involved in college access programs: "I have a great program, so why am I not reaching the right students?" The answer, according to Savitz-Romer and Bouffard, concerns taking into account the social, cognitive, and emotional development of the targeted students. The authors call for a "paradigm shift" in how we approach college access (p. 38). They want to change the way we work, emphasizing the right message to students at the right time, based on their physical and emotional development.

The authors take the readers through what it means to become "developmentally aware" and how to apply that to a program (p. 41). Once practitioners understand what is happening emotionally and cognitively, they can start to understand the choices that students are making. A book that stresses students' cognitive development may be at risk for being too technical for the average practitioner. Savitz-Romer and Bouffard avoid this by including stories from their own work and that of their colleagues. The reader learns about students who chose to participate in college-ready activities as well as from those who didn't—and why.

Book Review: *Ready, Willing and Able...*

People who run college access programs notice immediately that the students most likely to sign up for the programs are the ones who are already planning on going to college. That is, they have made up their minds that college is for them and now they want to do whatever they need to do to get there. Savitz-Romer and Bouffard argue that is because most of our college outreach programs come too late in the students' developmental stage or because practitioners unwittingly say and do things to undermine students' decision-making. They argue that students should be "active agents" in the process and adults actually harm the process by doing too much. They note "unfortunately, it has been common to view college preparation as something that is done to and for young people rather than with them as active contributors" (p. 48). Similarly, some practitioners are so organized and accomplished at creating the organizational structure for the college application process that students go through the process without any real engagement, and never find the need to develop organizational skills themselves. Savitz-Romer and Bouffard compare these well-meaning professionals to "helicopter parents" who do too much for their children (p. 162). They then offer ideas on how to help students develop those skills on their own.

In addition to such practical advice, I found that the book offered two meaningful structures to better understand and improve college access programming. The first has to

do with helping students develop a "college-going identity," so popular in outreach, especially to the middle grades. The authors translate James Marcia's four identity statuses to the idea of creating a college-going culture. Students may be:

- Identity diffused, and not yet resolved whether or not they are college-going;
- Foreclosured, by "prematurely" deciding college is not for them;
- In a moratorium, "trying on the possibility of going to college"; or
- Identity achieved, having explored the options, talked to peers and others, and on the path to college (p. 70-71).

Savitz-Romer and Bouffard then go on to explain how the students that we interact with might be in each stage and what the appropriate approach to each of them might be. Does this make more work for college access professionals? Yes. But it also stands to make our work more meaningful and effective.

Another useful explanation and template for practical use is the authors' section on scaffolding. I am used to thinking about scaffolding in regards to undergraduate curricula and skill building. Savitz-Romer and Bouffard apply this idea to how practitioners can help their students achieve college readiness in order to make their interventions more effective and to help students achieve what we know are the important non-

cognitive skills and habits of mind necessary for college persistence and success.

Because they are targeting their message to the largest group of people and trying to reach both practitioners and research, some of what Savitz-Romer and Bouffard suggest is well-trod ground. They remind readers that under-represented students are more likely to go to college if they see role models who look like them. The research first noted this many years ago, and hopefully practitioners and researchers have taken this to heart. There are a number of instances like this, especially in the second half of the book.

My other complaint with the book is that many of their recommended practices rely on expensive one-on-one mentoring. The recommendations in the "envisioning" chapter in particular require that the mentor have the time and ability to know each individual student well and have earned their trust, a practice that is sure to lead to greater results but which is not always possible when we're relying on a shifting undergraduate population to serve as "near-peer" mentors or on grant funding that limits our time and staffing models.

Nonetheless, this book has something to offer nearly everyone who is working on or interested in college access. It is the kind of book that practitioners can read once (in defiance of Greg Darnieder's advice) and then reach for again and again as they devise and
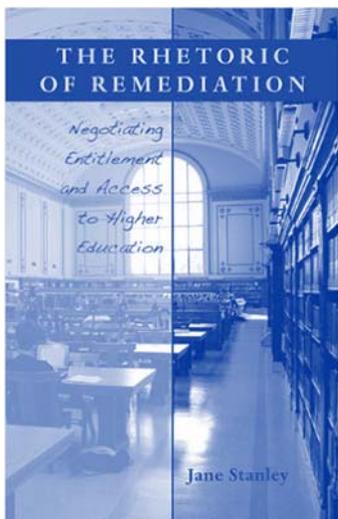
revise their interventions and think about how best to reach their students at this particular time in their lives. JCA

Book Review:
The Rhetoric of Remediation: Negotiation Entitlement and Access to Higher Education

Reviewed by Chad Patton (Grand Valley State University)

I t is an important question in higher education: whose job is it to teach basic skills? Clearly it is primary and secondary school teachers' responsibilities; they are the ones who should be preparing their students for college. Unless, of course, it is the university's responsibility; shouldn't universities be preparing the students whom they have accepted into their institution?

In *The Rhetoric of Remediation*, Stanley (2010) did not claim to have a clear answer to that question. Rather, she made it abundantly clear that despite being the center of numerous political debates for the last 140 years, remedial students will continue to need the assistance of the education system. As the associate director of college writing programs at University of California-Berkeley, Stanley examined remediation throughout UC-Berkeley's expansive history. Through reviewing Berkeley's archived texts, Stanley found that there was never a point in UC - Berkeley's history when at least a few students' academic ability "did not cause disappointment" (p. 140).

While students in need of remediation have been a constant for the last 14 decades, their role in the political landscape of higher education has been uniformly integral. The rhetoric of remediation is a rhetoric that Berkeley has used "to establish (and later demonstrate) its status among other institutions of higher education" (Stanley, 2010, p. 6). In other words, the rhetoric of remediation can best be described as "demands for access crash[ing] against insistence on elitism" (p. 140). While remedial students were used as pawns in order to prove pedagogical status, they were also used as a means to prove the university's utility as a community institution. Using a wide brush, Stanley painted the changing political landscape of higher education in California, and how Berkeley positioned remedial students between itself and California lawmakers.

Stanley's (2010) strength was apparent in her ability to research, and in her access to the history of an institution that has shaped the

policy of many institutions of higher education across the United States. Although her research was historical in nature, her narrative was a platform upon which college access professionals can understand the role that remedial students play in college admission policy and practice. Given the current state of college access testing in the United States, college access professionals will appreciate Stanley's use of the Subject A exam as the crux of UC Berkeley's admission. More specifically, college access professionals will value Stanley's research on the evolution of the Subject A exam. Whereas Subject A began as a means to pinpoint students' deficiencies, its existence would pave the way for K-16 coalitions, remedial testing, policy on curriculum, university transparency, and an open debate on the efficacy on standardized testing.

It was Stanley's (2010) strong historical research that brought *The Rhetoric of Remediation* to full fruition. At times, however, Stanley's history lessons became heavy-handed such that the argument lost focus. In particular, I think of chapter seven. Stanley documented a lengthy description of Reagan's politics within the contentious battleground that was 1960s higher education in California. While many individuals have considered Reagan to be an important political figure vis-à-vis the changing landscape of higher education (Berrett, 2015), the central argument on remedial students seemed to lose focus throughout Stanley's lengthy history on the matter.

Nonetheless, Stanley's (2010) weakness was, more often than not, her strength. Her wide breadth of research and in-depth historical analysis created a three-dimensional landscape of the political tensions surrounding remedial education. This does not only apply to the focus of Stanley's work (UC Berkeley), but can also be a lesson to many universities across the United States. Indeed, one of Stanley's final questions in her text was whether or not the history of remediation at one university "has legs" (p. 141). In other words, could the rhetoric of remediation at one university be applied to others? With President Obama's desire to provide free two-year education (Mangan, 2015), the growing concern placed on the value of a liberal arts degree, and a consistent push for a more utilitarian education (Berrett, 2015; Brint, 2011), it seems that Stanley's text does have legs. The importance of access shares a positive correlation with the rising trend of globalization in the United States and within its system of higher education. Stanley's (2010) research was an important reminder that remedial education is not a transitive trend. When universities opened their doors to "middle drawer" (p. 21)—or middle achieving—students, higher education professionals believed remediation would end. However, it did not. When the G.I. Bill passed, higher education professionals believed that remediation would end after veterans received their degrees. Once again, it did not. During the immigration boom in 1979 when "some 55.8 percent had to enroll in Subject A" (p. 123), it became apparent that

the remedial student would not be leaving higher education.

Although I mentioned that Stanley did not claim an answer to which institution (either K-12 or higher education) should be taking responsibility for the remedial student, her implications were apparent. With the help of her current department, UC Berkeley has been able to integrate remedial students into their introductory classes. While this is not a complete answer to an evolving question, it is a manner of filling a need using the resources that universities currently have.

Overall, Stanley's (2010) work surmounted to the successful inclusion of the remedial student into the university system. Instead of blaming K-12 education, Stanley asserted that UC Berkeley paved a 140-year history that ultimately lead to the institution taking ownership of the students they accepted. *The Rhetoric of Remediation* demonstrated a lesson in college access politics. It took 140 years of a dependence on remedial students before UC Berkeley could become independent from the remedial student. However, the independence that UC Berkeley created was one that made both political and social sense. In quoting Mankell, Stanley (2010) explained that "to walk backwards is to find out how to walk forwards" (p. 142). Stanley's work represented an integral part in the process of walking backwards. And while she does not contend to have the answer to helping the remedial student, her strategy is surely one more step toward discovering how best to continue walking forward. 🄹🄲🄰

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