IMPROVING POSTSECONDARY OUTCOMES FOR DISTRICT OF COLUMBIA STUDENTS: AN ASSESSMENT OF THE “DOUBLE THE NUMBERS” INITIATIVE

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ABSTRACT

District of Columbia high school graduation rates and college attendance rates currently fall well below the national average. Recent research suggests that only 9% of all students who enter high school in the District of Columbia eventually earn a postsecondary degree. In order to address this issue, the Double the Numbers Coalition (DTN) was formed in 2007 with the goal of “doubling the number” of high school and college graduates by 2012. The D.C. Achievers program, a key component of this initiative, creates greater access to postsecondary opportunities by providing scholarships for low-income students at six traditionally underserved schools. This study examines college entrance trends at two participating Achievers schools from 2006 to 2009 and determines that students who participate in the Achievers program are more likely to attend college than their peers. These students are also more likely to enroll in college directly after high school.
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Introduction

In order to be competitive in today’s workforce, high school graduates must complete some postsecondary education, whether it be a credential, certificate, associate, bachelor’s, or graduate degree. The fastest growing jobs in today’s economy require some postsecondary education (Carnevale & Desrochers, 2003; DOES, 2009). In the District of Columbia, at least 40 percent of jobs require a minimum 2 years of postsecondary school (DOES, 2009), 58 percent of new jobs created by 2016 will require more than a high school diploma, and 48 percent will require a minimum of a bachelor’s degree (DOES, 2009). In order to meet this economic demand, the local workforce must have the educational preparation to not only graduate from high school, but to also obtain some postsecondary credential or degree.

Access to economic opportunity in the District is highly predicated on access to postsecondary education; however, recent research shows that a majority of students in the District are not pursuing postsecondary degrees. Research conducted by the Bridgespan Group, a nonprofit strategic consultant, in 2006 concluded that of every 100 students who enter 9th grade in DC Public Schools and DC Public Charter Schools:

- 43 graduate from high school in the District within five years,
- 29 enroll in postsecondary educational programs within 18 months of graduating high school, and
- 9 attain a postsecondary degree within five years of enrolling in college (Kernan-Schloss & Potapchuk, 2006).
To address this challenge, the DC College Success Foundation (CSF) was formed in 2007 with the support of the Bill & Melinda Gates Foundation to help spearhead a city-wide initiative to promote improvement of postsecondary outcomes for students in the District of Columbia. The Double the Numbers Coalition (DTN) was formed, convening stakeholders across the city to “double the numbers” of both high school and college graduates by the year 2012. This initiative focuses on improving college preparation, college access, and college persistence for students in the District of Columbia using a multi-pronged approach to improve secondary school policy to better support college and career preparation, build stronger connections among the network of college access organizations in the District, and enhance support services and scholarships in some of the most needy schools in the city. This study focuses on the DC Achievers Scholarship Program as a crucial element of the Double the Numbers strategy.

THE DOUBLE THE NUMBERS INITIATIVE

The DTN Coalition represents numerous education stakeholders within the District of Columbia who have united around a five-part action agenda to: 1) create a districtwide college-going culture, 2) increase the number of college-ready high school graduates, 3) improve postsecondary transitions through college application, financial aid, and scholarship assistance, 4) increase college persistence, and 5) create an environment for reform (Double the Numbers, 2009). To implement the agenda, the Coalition is working closely with the mayor, the City Council, District of Columbia Public Schools (DCPS), District of Columbia Public Charter Schools (DCPCS), the Office of the State Superintendent of Education (OSSE), nonprofit college access providers, educators,
parents, business and community leaders, and students to develop an action plan to implement these goals (Double the Numbers, 2009).¹

THE DC ACHIEVERS SCHOLARSHIP PROGRAM

To address issues of college pursuit and persistence, the DC College Success Foundation (CSF) launched the DC Achievers Scholarship Program (referred to hereafter as the Achievers program) in 2007. The Achievers program is funded by the Bill and Melinda Gates Foundation and modeled after the Washington State Achievers (WSA) program. The goals of the Achievers program are to: 1) reduce financial barriers for talented, low-income students who are motivated to attend college; 2) select scholarship recipients based on non-academic indicators of future college success (such as demonstration of leadership); 3) increase college enrollment among all students at Achievers schools; and 4) develop a diverse cadre of college-educated citizens and leaders (DC College Success Foundation, 2007).

The Achievers program awards last-dollar scholarships of up to $50,000 over five years to 250 students each year from six selected high schools. Last-dollar scholarships are applied to a student’s financial aid package after all other federal, state, institutional, or private grants for which the student may qualify have been awarded, and are intended to help meet remaining unmet needs and reduce or eliminate the need for students to assume loan debt. Scholarships are awarded to students based on financial need, demonstration of leadership, and attendance at one of six selected public schools perceived to enroll high

¹ The researcher has participated as a volunteer member of the DTN coalition since 2007 and is active in the DTN management team, working groups, and school-based college access collaboratives.
populations of students at-risk of not graduating from high school. Three of the schools are comprehensive public high schools and three are public charter schools.

All students at participating schools are eligible to apply to the Achievers program in their 11th grade year. Students must meet income requirements for the program, submit essays and participate in interviews before being selected as “Achievers”. Once selected, all Achievers students are provided supplemental services to help them prepare for college and are expected to enroll in a baccalaureate program within 18 months of graduation. Achievers are paired with mentors in high school and college and participate in the Summer Academic Enrichment Program on a college campus during the summer before their senior year of high school. College Preparatory Advisers (CPAs) are placed in each high school to assist students with academic advising, college planning, grade monitoring, and test preparation to ensure that students stay on track throughout their college application process.

After high school graduation, Achievers are required to enroll in a postsecondary institution within 18 months in order to maintain their scholarship eligibility. The DC CSF enters agreements with all institutions attended to provide Achievers students with college mentors. The Achievers Scholarship covers all tuition and fees at any institution attended after all other financial aid is applied. The first cohort of Achievers graduated from high school in 2008. At the time of this study, there are two cohorts of Achievers students enrolled in college.

This combination of school-based supports, mentoring, peer cohorts going to college, postsecondary institutional support, and scholarship aid seeks to eliminate the informational, motivational, and financial barriers that many low income students face in
pursuing postsecondary education, and is a critical component of the DTN work to increase postsecondary graduation rates in the District of Columbia.

**Population**

This study targets high school graduates from 2006-2009 at two public charter high schools in the District of Columbia that participate in the DC Achievers Program. Both schools have similar demographic characteristics (e.g., racial composition, proportion of students receiving free or reduced price lunch). Based on 2008 enrollment data from the Common Core of Data\(^2\), black students comprise 99.9% of students enrolled at these schools. Over 50% of students enrolled at these schools are eligible for free or reduced price lunch, although this percentage likely understates the actual number, as many students do not self-identify as low-income.

**Assessing Progress: Guiding Questions**

The primary goal of the Double the Numbers coalition is to improve postsecondary outcomes for students in the District of Columbia. The DC Achievers Program aims to contribute to this goal by providing low-income students with the financial resources and support to attend postsecondary institutions. In order to assess whether the Achievers Program is increasing college access for students in selected schools, this study aims to answer several questions:

- Have college attendance rates improved at Achievers schools since 2007? Are more students attending postsecondary institutions following high school?

\(^2\) The Common Core of Data is maintained by the U.S. Department of Education National Center for Education Statistics and is available at http://nces.ed.gov/ccd/.
Are Achievers students entering college sooner than their peers?

Are Achievers students attending different types of postsecondary institutions (based on admissions selectivity, retention and graduation rates) than students who did not participate in the program?
Background and Related Literature

Current research on college pursuit and persistence indicate that there are a number of factors that contribute to the successful transition from high school to higher education and eventual obtainment of a postsecondary degree (Bangser, 2008b; Cabrera, 1993; Ishitani, 2006; Thomas, 1981). These factors have generally been separated into two categories: 1) student characteristics, including gender, race, socioeconomic status, high school academic achievement, parental education, and student educational expectations, and 2) postsecondary institutional characteristics, including institutional type and size, selectivity, and graduation and retention rates (Bradford & Farris, 1991; Mallette & Cabrera, 1991). Other research has focused on the effectiveness of programs and policies, such as financial aid, intended to increase college pursuit and persistence among students, particularly among specific populations such as low-income, minority, and first-generation students (those whose parents have not completed postsecondary education) (King, 1996; DesJardins, Ahlburg, & McCall, 2002). This study focuses on the interaction of these individual, institutional, and external characteristics to determine whether the DC Achievers Program is improving college enrollment in select schools.

Prefix: Pre-college Factors Impacting Postsecondary Enrollment

Race, Income, and Academic Preparation

A growing body of research has established evidence of several strong precollege predictors of postsecondary success, the most influential of which is academic preparation (Adelman, 2006). Academic predictors include enrollment in challenging courses such as
Advanced Placement and advanced mathematics (Adelman, 2006). Another definition characterizes students with adequate preparation as “college qualified,” which refers to having an academic record and aptitude test scores that at least minimally qualify a student for admission to a four-year institution. According to an analysis of the college-going patterns for 1992 graduates from the National Education Longitudinal Study of 1988 (NELS:88), “college qualified” minority and low-income students attend college at the same rates as higher income and white students provided that they have taken college entrance examinations and completed application for admission (Berkner & Chavez, 1997). However, low-income and minority students are typically underrepresented in college preparation programs and are less likely to be academically prepared to attend four-year institutions (Berkner & Chavez, 1997; Gamoran, 1987). Another examination of the NELS:88 data revealed that only 29% of the lowest-income students in the sample had met at least minimal college qualifications by their senior year of high school (Cabrera & La Nasa, 2000). This research indicates that academically prepared low-income and minority students are just as likely to enter college as their peers; however, many of these students lack adequate academic supports to prepare them to be “college qualified.”

Social and Family Supports

While academic preparation is important, this research also suggests that help navigating the college admissions process is essential to ensure that low-income and first generation students have equal opportunities to attend postsecondary institutions (Berkner & Chavez, 1997; Choy, 2001; King, 1996; McDonough, 1997). The college-going process involves deciding to pursue postsecondary education, preparing academically for college-level work, taking entrance examinations (SAT/ACT), choosing schools and applying, and
gaining acceptance and making the arrangements to enroll. For students who successfully complete this process, college attendance outcomes do not differ based on income or parental education (Berkner & Chavez, 1997; Choy, 2001). College access programs and services are vital to help students and their parents navigate this difficult process, particularly when the parents do not have personal experience with going to college.

Lack of parental involvement and early planning for college can adversely affect a student’s likelihood of becoming college qualified (Cabrera & La Nasa, 2000). A majority of minority, low-income, and first generation students do not have access to the social or cultural capital within their immediate social and family environments to know how to adequately plan and prepare for college (Perna & Titus, 2005; Wimberly & Noeth, 2004). One study analyzing data from 9,471 public high school students in the nationally representative High School and Beyond survey concluded from an OLS regression that students from families of lower socioeconomic or minority status were less likely to have access to guidance counseling that can help them make informed academic choices in high school to prepare them for college. This limited access has serious consequences as many of these students come from home environments where knowledge about college readiness is limited (Lee & Eckstrom, 1987).

Families are essential in helping students develop and support aspirations to attend college. Several studies have focused on families and communities as forms of social and cultural capital important to students’ college outcomes. A study using data of 9,810 high school graduates attending 1,006 schools from the nationally representative NELS:88 dataset indicated that more parent involvement increases by more than 1 times students’ likelihood to enroll in a 2-year or 4-year college (Perna & Titus, 2005). A qualitative
A study involving 20 black students completing the fourth year of a baccalaureate program at two large public institutions cited family and “fictive kin” as influences critical to developing the motivation necessary for students to successfully enroll and persist in college. Specifically, the study cited the role of “fictive kin” such as college counselors and college access programs to provide the information and support to students who did not have results of college success in their immediate families (Herndon & Hirt, 2004). These networks translate into broader cultural capital, as students who attended schools with higher levels of schoolwide parent involvement were also more likely to enroll in college than students from schools with lower levels of parent involvement (Perna & Titus, 2005).

**FINANCIAL AID AND POSTSECONDARY ENROLLMENT**

Financial support is also a significant factor in college attendance rates of low-income and first-generation students. Several studies have focused on the importance of scholarship aid for this population, as opposed to loans or work-study wages, in determining college-going and college completion (DesJardins, Ahlburg, & McCall, 2002; King, 1996). A 1995 survey of 900 seniors who took the SAT showed that low-income students who anticipated receiving scholarship aid were more likely than average to plan to attend a four-year university (King, 1996). Another study estimated that an increase in scholarship aid as a component of a student’s financial aid package was positively associated with reduced likelihood of dropping out of college (DesJardins, Ahlburg, & McCall, 2002). Although financial aid, and particularly scholarship aid, has been shown to
promote college enrollment and retention, applying for financial aid can often serve as the gatekeeper to access postsecondary education (Kane & Avery, 2004).

All students who want to access federal student aid must complete the Federal Application for Student Aid (FAFSA) each year that they wish to receive aid. The FAFSA determines eligibility for federal grants and loans and is required by most institutions to determine institutional and scholarship aid. Scholarship programs will sometimes use the FAFSA to determine financial need qualifications for scholarships as well. A randomized controlled trial tested if and how helping families complete the FAFSA affects receipt of aid and college enrollment. The study found that high school seniors and recent high school graduates who received help with the FAFSA and information about aid were not only more likely to submit the aid application, but also were 25 to 30 percent more likely to enroll in college (Bettinger, et. al., 2009). This study highlights the importance of programs that offer assistance completing financial aid forms and applications, as lack of knowledge and difficulty with these processes can often impede low-income and first-generation students from attending college.

TIME TO ENROLLMENT AND POSTSECONDARY COMPLETION

Research on adolescent to adult life transitions indicate several reasons why delayed postsecondary enrollment may have a negative impact on college enrollment (Dougherty, 1994; Jacobs and King, 2002; Bozick & DeLuca, 2005; Rowan-Kenyon, 2007). Students who delay enrollment are more likely to enroll in non-selective two year institutions, and are more likely to drop out and less likely to complete a baccalaureate degree (Dougherty, 1994). Another study using data from the nationally representative
NELS:88 survey calculated that on average, black students in the sample delayed college enrollment by 11 months after high school graduation, and that, all socioeconomic, academic, and demographic factors being equal, students who postpone postsecondary enrollment by a year after high school are 64 percent less likely to complete a bachelor’s degree than those who enroll immediately after high school (Bozick & DeLuca, 2005).

Institutional Characteristics Impacting Postsecondary Completion

Several studies have indicated that postsecondary institutional characteristics are also important in determining a student’s likelihood to graduate. In particular, this study is interested in the relationship of institutional quality, measured by selectivity, retention and graduation rates to postsecondary degree completion. Research on institutional selectivity has produced mixed results. One theory posits that students will fare better at institutions where their demonstrated academic ability “matches” institutional selectivity (Light & Strayer, 2000). This theory suggests that students with lower high school GPA and test scores will be adversely affected by attending more selective institutions. However, more recent research using data from three nationally representative surveys to compare the relationship of institutional selectivity to graduation found that students of all races are more likely to graduate from selective institutions than are their racial counterparts with equivalent social and academic characteristics who attended less selective institutions (Alon & Tienda, 2005). Another study found that students attending nonselective institutions are significantly more likely to drop out before completing a postsecondary degree (Ishitani, 2006). This could suggest that more selective institutions may provide
better academic and social supports to provide the necessary assistance to help students persist to graduation.

Two other indicators of institutional quality are the first-year retention rate and the 6-year graduation rate. Institutional retention rates are not presumed to be predictive of college success, but are strongly linked to student characteristics that predict likelihood of degree completion (Astin, 1997). Retention and graduation rates are often linked to institutional selectivity, as institutions with lower selectivity in admissions typically enroll more minority students, more economically disadvantaged students, and less academically qualified students (Rowan-Kenyon, 2007). Another theory of student retention pioneered by Tinto suggests that a combination of student and institutional, non-academic characteristics such as a student’s satisfaction with his institutional choice, the institution’s selectivity, the social support provided, and the degree of social involvement provide the best predictors of college retention (Tinto, 1993; Thomas, 2000; Ishitani, 2006). Institutions that provide a more supportive academic and social environment are more likely to have higher retention and graduation rates (Tinto, 1993).

This research clearly demonstrates that college entrance is not sufficient for college completion. Both individual and institutional factors can impact a student’s likelihood to earn a postsecondary degree. Students are more likely to persist to a degree if they enroll in college sooner and attend more selective institutions that successfully retain and graduate students.
HYPOTHESES

This study measures the initial progress made by the Double the Numbers Initiative to increase college enrollment rates at two District of Columbia high schools that participate in the DC Achievers Program. Given evidence suggesting that access to college information, guidance and assistance with the college planning and preparation process, social supports, and financial aid are all key factors in predicting college enrollment, I anticipate the Achievers program to increase likelihood of attending college for students at selected schools. While college completion rates cannot yet be determined, time to enrollment and postsecondary institutional factors can indicate whether students are putting themselves on the right path to college completion. I anticipate that more Achievers students will enroll in college in the first year after high school due to the financial incentive to attend and the counseling and mentoring support they receive. I do not anticipate there to be a significant difference in the types of institutions attended.
Empirical Framework

SAMPLE AND DATA

The sample consists of 1,028 students who graduated from one of two public charter high schools in the District of Columbia from 2005-2009. The sample comprises institutional data from each high school, information from the DC OneApp financial aid application, and college enrollment data from the National Student Clearinghouse.

Institutional data are collected from internal school databases. Data from School 1 are provided for graduates from 2007-2009. Data from School 2 are provided for graduates from 2005-2009. Data are provided by both charter schools and the D.C. Office of the State Superintendent of Education (OSSE). The data track students postsecondary enrollment through the Spring 2010 semester for all students in the sample. Table 1 provides a description of the sample.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Descriptive Statistics of the Full Sample</th>
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<td>Variable</td>
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<td>Female</td>
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<tr>
<td>Black</td>
<td>980</td>
</tr>
<tr>
<td>Low-income</td>
<td>980</td>
</tr>
<tr>
<td>GPA</td>
<td>980</td>
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<td>Scholarship Program</td>
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<td>Enrolled in College ever</td>
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<tr>
<td>Enrolled w/in 6 months of HS grad</td>
<td>1028</td>
</tr>
<tr>
<td>Enrolled w/in 9 months of HS grad</td>
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</tr>
<tr>
<td>Enrolled w/in 18 months of HS grad</td>
<td>1028</td>
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<tr>
<td>Total Semesters Enrolled</td>
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<td>Selective College</td>
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<td>Transferred Schools</td>
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<td>6-year Graduate Rate</td>
<td>533</td>
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<tr>
<td>1st year retention rate</td>
<td>534</td>
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<td>Valid N (listwise)</td>
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</tr>
</tbody>
</table>
VARIABLES

Dependent Variables

Within the dataset, I have constructed several dependent variables: college enrollment, enrollment within 6 months of high school graduation, enrollment within 9 months of high school graduation, enrollment within 18 months of high school graduation, college selectivity, college graduation rate, college retention rate, and college transfer. Because the final cohort of students has only been out of high school one year, the sample only includes their college enrollment for the 2009-2010 school year, and so conclusions about their enrollment and transfer status will be incomplete.

College enrollment is measured by overall enrollment as well as by time to enroll. College enrollment is determined by evidence of enrollment at a postsecondary institution following graduation from high school based on enrollment data from the National Student Clearinghouse, a nonprofit organization that verifies student enrollment. Enrollment data is limited to students who applied for the OSSE OneApp and does not include students who attended postsecondary institutions that do not participate in the National Student Clearinghouse or DC financial aid programs (DC TAG and DC LEAP). Enrollment is measured as a binary variable, coded “1” if a student enrolled in college during the time specified, and “0” if not. CollegeEnroll signifies whether a student is enrolled in college at any time from Fall 2006 through Spring 2010. Given that some students do not enroll in college directly after high school, lagged college enrollment variables are created to estimate differences in time between high school graduation and college enrollment. Enroll6month captures students who enrolled in college within 6 months of graduating high school, typically the Fall semester following high school graduation. Enroll9month
Table 2 presents a description of the sample differentiated by college enrollment. Of the 1028 students included in the sample, 52% were enrolled in college at least one semester from Fall 2006 through Spring 2010. Not all students enrolled in college directly following high school graduation: 36% were enrolled in the Fall semester following high school graduation (within 6 months), 50% were enrolled in the first year following high school graduation, and 51% were enrolled by the Fall semester 18 months after their high school graduation. Given that students who graduated in 2006 or 2007 have had three to four years to enroll in college whereas students who graduated more recently have only had one or two years to do so, one might assume that this estimate is

<table>
<thead>
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<th>Variable</th>
<th>Enrolled in College</th>
<th>Not Enrolled</th>
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</tr>
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<td></td>
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<tr>
<td>Scholarship Program</td>
<td>535</td>
<td>.23</td>
<td>493</td>
</tr>
</tbody>
</table>

captures students who enrolled within 9 months of graduating high school, whether they enrolled in the fall semester or spring semester. This variable does not take into account whether or not the students were still enrolled after 9 months, but merely that they were enrolled in college at one point during the year following high school. Finally, Enroll18month represents students who enrolled in college at any point within 18 months following high school graduation. Because students who graduated in 2009 will not have been out of school 18 months, analysis of this variable should be interpreted with caution.
upwardly biased. However, when the sample is limited to only students who enrolled in college, almost all students (98%) enrolled within the first 18 months following high school graduation.

The next set of dependent variables, college selectivity, graduation rates, and retention rates, measure postsecondary institutional characteristics related to successful college completion. College selectivity is measured as a binary variable *Selective*, with “1” signifying institutions that admit fewer than 50% of applicants, and “0” representing schools that admit 50% or more of applicants. Of the 535 students in the sample who enrolled in college, 72(13%) students attended selective institutions. *Grad Rate* measures the institutional 6-year graduation rate and is recorded as the percentage of students who began their studies as full-time, first-time degree- or certificate-seeking students who completed a degree within 6 years of first enrolling at the institution. This graduation rate is cumulative and includes students who graduated in less than 6 years. Graduation rates of institutions in the sample range from 3% to 90%, with a mean 6-year graduation rate of 35.8%. *Retention Rate* measures the percentage of first-time enrolled, full-degree seeking undergraduates from Fall 2006 who are again enrolled at that institution in Fall 2007. Retention rates range from 8% to 96%, with a mean retention rate of 65%.

Finally, a *transfer* variable is created to account for whether students switched institutions at any point after high school graduation. The *transfer* variable is coded as “1” if a student who enrolled in college left the first institution where he enrolled and subsequently enrolled in another postsecondary institution. Of the 535 students who

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3 Data for institutional characteristics taken from the College Results Online search tool ([www.collegeresults.org](http://www.collegeresults.org)) and represent 2007 IPEDS data gathered from the U.S. Department of Education National Center for Education Statistics. In instances where data for institutions was not available at College Results Online, data was obtained using the IES College Navigator tool, and the most recently available data was reported. College Results Online is supported by the Education Trust.
enrolled in college, 53 (10%) transferred institutions at some point after high school graduation. Achievers students comprised 15% of transfers (8 students). Students generally transferred to non-selective institutions; just 1 of the 53 transfers attended a second institution that was considered selective (accepts fewer than 50% of applicants). This means that students in the sample generally transferred from one non-selective institution to another, or transferred from a more selective institution to a less selective institution. A cross tabulation (not shown) of the selectivity of first and second postsecondary institutions attended reveals that, of the 53 students who transferred institutions, all 4 students who originally attended selective institutions transferred to less selective institutions, and one transferred from a non-selective institution to a selective institution. Given that transferring institutions, and particularly to institutions that have less success graduating students, may be negatively related to college completion (Goldrick-Rab, 2006), it would be interesting to examine transfer patterns of students. Due to the small number of transfers included in the sample, further examination of transfer patterns is beyond the scope of this study.

Explanatory Variable

The dependent variables are analyzed in relation to the Scholarship variable, which indicates whether a student was enrolled in the Achievers scholarship program. Scholarship is coded as a binary variable, assigned a value of “1” if the student participated in scholarship program, and assigned a “0” if not. The first cohort of Achievers was selected in Spring 2007 as 11th graders, therefore only students who graduated in 2008 and 2009 were eligible to enroll in the program. In order to remain eligible for the scholarship, participants must enroll in college within 18 months after graduating high school. Of the
166 students who were originally selected to participate in the Achievers scholarship program, 124 (75%) have enrolled in college by the Spring 2010 semester. Of the Achievers who have not yet enrolled in college, 22 are 2008 high school graduates (Cohort 1), and 20 are 2009 high school graduates (Cohort 2).

Secondary Variables

In order to isolate the relationship of the scholarship intervention on college enrollment patterns, institutional choices, and transfer patterns, the models included in this analysis adjust for differences among the sample across the following background characteristics:

Gender. Gender is coded as a binary variable female, with “1” signifying female, and “0” signifying male. The sample includes 62 percent females. In terms of postsecondary enrollment, females represent 66 percent of students who enrolled in college at some point following high school graduation.

Race. The racial makeup of the sample is captured by the variable black, with “1” signifying that a student is black, and “0” signifying non-black. Over 99 percent of students in the sample are black, with the remainder being Hispanic, thus suggesting that the race variable be excluded from the models due to lack of variation in the sample.

Low-income. A student’s low-income status is measured by whether or not he/she was eligible for free or reduced-price lunch in high school. Low-income is recorded as a binary variable, with “1” signifying that a student is enrolled in a free or reduced-price lunch program. Lunch status was provided by high schools and is not available for all students. Of the 980 students for which data is reported, 51 percent of students are identified as low-income. This measure is likely an underestimate, as students are asked to
self-report this eligibility to their schools in order to enroll in free or reduced lunch programs and many adolescents are likely to be reluctant to self-identify as low-income.

_GPA_. Grade point average is provided by each high school and is measured as the student’s final cumulative GPA at high school graduation. GPA is recorded on a traditional 4 point scale with additional weight added for students who were enrolled in Advanced Placement or honors courses (0.0-4.0+). The average GPA for students in the sample is 2.32. The minimum GPA in the sample is 0.88 and the maximum is 4.15. The average GPA for students who enrolled in college at 2.39 is only slightly higher than the sample mean.

**RESEARCH METHOD**

This study uses an independently pooled cross section analysis to compare changes in postsecondary enrollment patterns (postsecondary enrollment trends, institutional choices, and transfer patterns) for students in two high schools that participated in the D.C. Achievers scholarship program. The cross section includes years prior to introduction of the program (2006-2007) as well as the first two years of the program (2008-2009). One question raised is whether the scholarship program is actually helping more students from these schools go to college, or merely providing financial assistance to those students who would have matriculated anyway based on their academic and personal characteristics. In order to isolate the relationship of the scholarship program, I consider the period before the scholarship program was implemented as the baseline ($t_1=2006-2007$), and the period after the program’s implementation to be the treatment ($t_2=2008-2009$). If the scholarship program is positively related to college enrollment, I would expect the number of students
who enroll in college as a proportion of all high school graduates to increase during the treatment period.

Given that school data are only provided for schools with the scholarship program, this study is not able to account for other exogenous factors that might have shifted postsecondary enrollment trends. However, because the study evaluates a relative comparison (change in outcomes for students in the same schools in different graduating years) this should eliminate some of the school characteristics that could impact college enrollment.

Although Double the Numbers is ultimately interested in raising the college graduation rate, this particular study will not address college completion given that none of the students in the sample have completed college at the time of analysis. However, any increase in college attendance rates will hopefully indicate a future increase in college completion rates.

Statistical Model

Two different methods of regression analysis are used to evaluate the relationship between the Achievers scholarship program and college enrollment trends. First, a logistic regression is used to analyze each of the four college enrollment variables, college selectivity, and whether students transferred colleges (“college transfer”). Logistic regression is used when the dependent variable is binary (has only two possible values, usually 0-1) to establish a relationship between the binary dependent variable and a group of predictor variables. The logistic regression produces an estimated probability coefficient, which is the log odds of an outcome (“0” or “1”) occurring given a one unit change in the value of the independent variables. Odds can be interpreted as the
probability ($\pi$) of an outcome occurring ($y=1$) divided by the probability ($1-\pi$) of the outcome not occurring ($y=0$). Therefore the log odds coefficients can be interpreted as $\beta = \log\left(\frac{\pi}{1-\pi}\right)$. Statistical significance of coefficients is determined using the Wald statistic. The odds ratio of the outcome occurring is found by taking the exponent of the log odds coefficient ($\exp(\beta)$) and comparing it to the baseline category (for which the outcome of interest is equal to 0).

A simple logistic regression with one independent variable can be expressed by the following equation:

$$\log\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta X$$

In addition to the independent variable scholarship, the logistic regressions performed in this analysis include several explanatory variables (gender, lowincome, GPA) and can be represented by the equation:

$$P(Y = 1 \mid Gender, Income, GPA, Scholarship) =$$

$$\log\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta_{female} + \beta_{lowincome} + \beta_{GPA} + \beta_{scholarship}$$

where $Y$ is equal to the dependent variable in each model ($Y$=CollegeEnroll, Enroll6months, Enroll9months, Enroll18months, Selectivity, Transfer). The fit of the model is tested using a -2 Log Likelihood estimation, which measures the likelihood of reproducing the data provided by the parameter estimates of the regression. In other words, the Likelihood estimate produces the likelihood that the model would correctly predict the same distribution of data as in the sample, given the log odds estimated in the logistic regression.
Because two of the postsecondary institutional characteristics (graduation rate, retention rate) are measured as percentages, an ordinary least squares (OLS) regression is used to analyze the relationship between the scholarship program and these postsecondary institutional variables.
Findings

College Enrollment

This paper investigates if and how the Achievers scholarship program is related to college enrollment, and thus the analyses include student participation in the scholarship program as the key independent variable to estimate the probability of college enrollment. Models includes additional explanatory variables related to college attendance, specifically gender, low-income status, and high school GPA to isolate any change in odds of college enrollment related to the Achievers program. The first model measures whether students enrolled in college at all during the Fall 2006 through Spring 2010 semesters. The next three models measure time to enrollment, or the amount of time between high school graduation and first-time college enrollment. The second model estimates whether students enrolled in college during the fall semester after high school graduation (6 months). The third model measures whether a student enrolled in college by the spring semester following high school graduation (9 months), and the fourth model measures whether a student enrolled by the fall semester a year after high school graduation (18 months). In order to account for the fact that students who graduated in 2009 have not yet been out of school for 18 months, a “missing” variable is created, coded “1” if college enrollment information is missing for that student. Enrollment within 18 months is then recoded “0” for all 2009 graduates for whom these data are missing, and the missing variable is included in the model to account for variation.

Logistic regression analysis reveals that the Achievers scholarship program has a significant positive relationship with all four college enrollment outcomes. The Achievers program seems to work, regardless of the time lag between high school graduation and
actual college matriculation. Results from these regressions are presented in Table 3. Coefficients have been converted into odds ratios to facilitate interpretation. The baseline category for each model refers to males who are not low-income and did not participate in the scholarship program. The first model estimates that, after controlling for differences in GPA, gender, and low-income status, the odds of enrolling in college for Achievers (\textit{scholarship}=1) is 3.46 times higher than for non-Achievers. In terms of percent change, the odds of enrolling in college for Achievers are 246\% higher than the odds for non-Achievers. Students in the Achievers program are 3.66 times (or 266\%) more likely to enroll within 6 months of graduation than non-Achievers, 3.44 times (or 244\%) more likely to enroll within 9 months of graduating high school, and 4.67 times (367\%) more likely to enroll in college within 18 months of graduating high school. Wald statistics show these results are all statistically significant at the \(p<.001\) level. Because all program participants are required to enroll in college within 18 months of high school graduation, this result is expected. What is surprising is that the students in the Achievers program are significantly more likely than non-participants to enroll in college directly following high school graduation.

Even more surprising is that these findings for the Achievers program are robust while holding variation in GPA among the sample constant. After adjusting for differences in GPA, a factor significantly and positively related to college enrollment \((\exp(\beta_{\text{GPA}})=1.29, \, p<.01)\), the scholarship program is still significantly and positively related to college enrollment. This finding suggests that participation in the Achievers program can increase a student’s chances of attending college over another student with the same GPA who does not participate in the program.
TABLE 3
Odds Ratio Estimates of Four College Enrollment Models

<table>
<thead>
<tr>
<th>Variables</th>
<th>College Enroll</th>
<th>Enroll 6 months</th>
<th>Enroll 9 months</th>
<th>Enroll 18 months¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1.156</td>
<td>1.090</td>
<td>1.087</td>
<td>.975</td>
</tr>
<tr>
<td>Low-income</td>
<td>1.129</td>
<td>0.980</td>
<td>1.089</td>
<td>1.666***</td>
</tr>
<tr>
<td>GPA</td>
<td>1.294**</td>
<td>1.288**</td>
<td>1.240**</td>
<td>1.277*</td>
</tr>
<tr>
<td>Scholarship Program</td>
<td>3.464***</td>
<td>3.664***</td>
<td>3.444***</td>
<td>4.677***</td>
</tr>
<tr>
<td>Constant</td>
<td>.385***</td>
<td>.257***</td>
<td>.416***</td>
<td>.495**</td>
</tr>
<tr>
<td>Likelihood (L)</td>
<td>1297.26</td>
<td>1236.28</td>
<td>1299.48</td>
<td>1297.17</td>
</tr>
</tbody>
</table>

N = 1028
* p<.05  ** p<.01  *** p<.001
¹ Controlled for students who graduated in 2009 whose enrollment status w/in 18 months cannot be determined because they have not been out of high school for 18 months

Other findings from these models tend to confirm what other research has indicated. All four models of college enrollment yield similar odds ratios for GPA, indicating that as GPA increases, the odds of college enrollment significantly increase. Accounting for differences in gender, low-income status, and participation in the scholarship program, a one grade-point increase in GPA is estimated to increase by 1.29 times the likelihood of a student enrolling in college.

However, contrary to most past research, gender and low-income status do not predict college enrollment in this analysis, with the exception of low-income status in the fourth college enrollment model. Surprisingly, this model predicts that, after accounting for variation in gender, GPA, and participation in the scholarship program, low-income students are 1.67 times more likely to enroll in college within 18 months of high school graduation than students who are not identified as low-income. This result could be driven
by several factors. First, low-income students in this sample may qualify for more financial aid that is “need-based” (based on family income) and therefore be more likely to enroll than their classmates who do not meet the low-income definition but also have limited family resources to support postsecondary education. Additionally, students enrolled in the scholarship program must demonstrate financial need. Because scholarship recipients are also required to enroll in college within 18 months of graduating high school, this requirement may be driving the results.

As noted earlier, low-income is estimated to be negatively skewed due to the fact that students are required to self-report their eligibility for free and reduced-price lunch to their school. This suggests that there are more low-income students in the sample than are captured by the low-income variable. This analysis does not account for factors that may be correlated with a student’s likelihood to report income status that could impact college enrollment. For example, students who plan to attend college may be more likely to report their income status in order to meet eligibility requirements for need-based aid.

COLLEGE SELECTIVITY AND STUDENT TRANSFER RATES

The second set of logistic models estimates relationships between the Achievers scholarship program and college selectivity and student transfer rates, respectively. College selectivity is measured as a binary variable, with “1” indicating that a college is selective (admits fewer than 50% of applicants). The logistic regression for selectivity reveals no relationship between the scholarship program and college selectivity. There is a statistically significant relationship between selectivity and GPA. A one grade point increase in GPA increases the odds of attending a selective college by 1.6 times ($p<.05$), controlling for variation in gender, low-income status, and participation in the scholarship
program. This relationship is to be expected, as more selective institutions typically consider a student’s academic performance when making admissions decisions and admit students with higher GPAs than non-selective institutions.

A second logistic regression is conducted on the transfer variable to estimate relationships among predictor variables and a student’s likelihood to transfer institutions. None of the student background variables were related to the transfer variable. This is likely due to the small number of transfers in the sample (n=53). Regression results for both the selectivity and transfer models are presented in Table 4.

### College Graduation and Retention Rates

Finally, I estimate two models of postsecondary institutional characteristics that reflect student success in college: 1) institutional graduation rate, and 2) first year retention rate. These measures capture how successful an institution is at keeping students enrolled and eventually graduating them with a postsecondary degree. If students in the Achievers
program are more likely to attend schools with higher retention and graduation rates, they should have a greater chance of graduating, due to institutional resources and perhaps peer pressure to persist to degree completion at these institutions. Each dependent variable is recorded as a percentage, and therefore OLS regression is used to estimate the relationship to the scholarship program. Regression results of both models are presented in Table 5.

Participation in the scholarship program is positively related to institutional graduation rate ($b_{\text{schol}}=.057$, $p<.01$), implying that students who participate in the scholarship program attend postsecondary institutions with graduation rates that are 5.7 percentage points higher than those attended by non-participants. These results have notable implications, suggesting that scholarship recipients are attending institutions that are have higher graduation rates, an important factor to predict their eventual college completion (Ishitani, 2006; Rowan-Kenyon, 2007).

Similar results are found for the retention model. Participation in the scholarship program is significantly and positively related to the institution’s first-year retention rate ($b_{\text{schol}}=.030$, $p<.05$). This result is encouraging as well, as institutions with higher first-

<table>
<thead>
<tr>
<th>Variables</th>
<th>Grad Rate</th>
<th>Retention Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>(s.e.)</td>
</tr>
<tr>
<td>Female</td>
<td>-.033</td>
<td>(.018)</td>
</tr>
<tr>
<td>Low-income</td>
<td>-.022</td>
<td>(.017)</td>
</tr>
<tr>
<td>GPA</td>
<td>.051***</td>
<td>(.013)</td>
</tr>
<tr>
<td>Scholarship Program</td>
<td>.057**</td>
<td>(.019)</td>
</tr>
<tr>
<td>Constant</td>
<td>.253***</td>
<td>(.033)</td>
</tr>
</tbody>
</table>

$N = 1028$

* $p<.05$  ** $p<.01$  *** $p<.001$

1 Coefficients presented are unstandardized beta coefficients from the OLS regression
year retention rates also suggest a higher likelihood of college persistence. Complete regression results for all models presented are included as appendices.
Discussion and Conclusions

Discussion

According to the results of this analysis, participation in the Achievers scholarship program significantly increases the odds that a student graduating from one of the high schools included will enroll in college. Students who participate in the program are, on average, 3.5 times more likely to enroll in college than students from the same high schools who do not participate. This result persists even after including students who graduated before the program was implemented, as well as accounting for variation in other factors that could influence college entrance (gender, low-income, and GPA). While it is not surprising that the scholarship program increases chances of college enrollment (enrollment within 18 months of high school graduation is a requirement of the program in order to remain eligible for scholarship funding), it is significant that the program increases students’ chances of attending to such a great extent. Additionally, students in the scholarship program are entering college sooner, which increases their chances of college completion (Bozick & DeLuca, 2005; Rowan-Kenyon, 2007); participants are 3.5 times more likely to enroll in college directly out of high school than non-participants, even though the scholarship program does not require students to enroll immediately.

These results imply several conclusions. First, students may be applying to schools earlier and making matriculation decisions earlier due to the college counseling and support provided by the Achievers program. Second, the financial advantage afforded by the scholarship may allow students to feel more comfortable attending college directly after high school rather than entering the workforce for a year to save money for college.
Additionally, there may be unobserved peer effects influencing college enrollment patterns; as more of their peers are accepted and plan to enroll in postsecondary institutions, students who may have traditionally delayed enrollment might be more inclined to enroll directly following graduation. Finally, more students may be applying to four-year institutions, which typically encourage fall enrollment for full-time students.

Propelling students into college is a crucial step toward college completion, but matriculation certainly does not guarantee student success in college. Because the ultimate goal of the program is for students to obtain a postsecondary degree, it is important for the Achievers program to consider factors that help influence postsecondary persistence and success. Postsecondary institutional factors can be important to student success; students are more likely to persist at institutions with higher selectivity (Alon & Tienda, 2005; Ishitani, 2006). However, participation in the Achievers program was not significantly related to postsecondary institutional selectivity, indicating that scholarship recipients do not enroll at institutions that differ from the institutions in which their peers enroll based on admissions criteria. If institutional selectivity is a predictor of college success, this suggests that scholarship recipients may need additional support at non-selective institutions to maintain successful progress toward degree completion (Tinto, 1993). As future cohorts of Achievers scholarship recipients consider college options, the program should encourage students to select institutions where they are more likely to be successful.
FURTHER RESEARCH

The DC Achievers Scholarship Program has demonstrated that it is successful in helping students enroll in college. However, the real indicator of the program’s success will be how well the Achievers program can support its students to persist at their postsecondary institutions and obtain a degree. Because only two cohorts of students have entered college at the time of this study, there are not sufficient data to examine college persistence or graduation patterns of scholarship recipients in relation to their peers. Further studies of the program should focus on college persistence as an outcome of interest to examine whether participants are successfully progressing towards a postsecondary degree.

This study is limited in its scope in several ways. The Achievers scholarship program is only one piece of the larger city-wide reform effort to improve high school graduation and college completion rates. In order to understand the impact of the Achievers program on college enrollment and persistence, its efficacy must be examined in conjunction with other recent reforms and factors that contribute to high school graduation and college preparation. This sample is also limited to high school graduates. However, we know that approximately 35% of students enrolled in public schools in the District of Columbia do not even graduate high school (Stillwell, 2009). Further research should track student data starting in the 9th grade and include high school graduation as an outcome to reach a better determination of whether high schools are preparing more students for college, graduating more students, and helping them to enroll.

There are additional limitations imposed by the sample data available for this study. The sample is limited to two charter schools that participate in the scholarship program,
and therefore there is no real comparison group. Some of the implied school effects (characteristics of students who attend the school, strength of academic program, college access supports within the school, college-going school culture, etc.) are mediated by including students who graduated before the program was implemented. However, it is difficult to determine whether the results are related to participation in the scholarship program, other school factors, or other time-related factors (such as new school policies or reform strategies) that were implemented congruent to the scholarship program. It is possible that the introduction of the scholarship program led to school-based reforms, and that the benefit of program staff in schools extended beyond the students who were selected as participants. It is also possible that these schools promote a culture of college-going for their students, and will be more likely to benefit from a scholarship program that provides financial assistance to students who would plan to attend college anyway.

In order to account for some of these concerns, it would be beneficial to include in the sample other schools that receive the scholarship program, including traditional public schools, as well as other public schools and public charter schools that do not participate in the scholarship program. Inclusion of more schools in the sample would not only increase the statistical power of the model by allowing for greater variation, but it would allow the researcher to more conclusively test for certain school and student factors that might impact college enrollment.

**Conclusion**

The analysis presented in this paper suggests that the students who participate in the Achievers program are more likely to attend college than non-participants. Scholarship
participants are also more likely to enroll in college sooner and are enrolling at institutions with slightly higher retention and graduation rates, suggesting that they might be more poised for successful college completion. These results also suggest that participation in the program counteracts other factors that might hinder a student’s ability to go to college, including lower GPA and coming from a low-income family.

The work of the Achievers program does not stop with college enrollment. In order to truly “double the numbers” of students in the District of Columbia obtaining postsecondary degrees, it is not enough simply to increase the number of students who matriculate in college. Programs such as Achievers must also demonstrate the ability to assist students with persisting to college completion. Further studies should examine the relationship of participation in the Achievers program to college persistence to ascertain whether the financial aid and counseling support provided by the program significantly impact college success.
Appendix A: Additional Regression Results

Full regression results are presented below for all models to provide greater detail.

### TABLE 6
Logistic Regression Results of College Enrollment

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>.145</td>
<td>.137</td>
<td>1.119</td>
<td>1</td>
<td>.290</td>
<td>1.156</td>
</tr>
<tr>
<td>Title_I_Status</td>
<td>.121</td>
<td>.133</td>
<td>.826</td>
<td>1</td>
<td>.363</td>
<td>1.129</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>.257</td>
<td>.103</td>
<td>6.295</td>
<td>1</td>
<td>.012</td>
<td>1.294*</td>
</tr>
<tr>
<td>Achiever</td>
<td>1.242</td>
<td>.195</td>
<td>40.732</td>
<td>1</td>
<td>.000</td>
<td>3.464**</td>
</tr>
<tr>
<td>Constant</td>
<td>-.954</td>
<td>.257</td>
<td>13.810</td>
<td>1</td>
<td>.000</td>
<td>.385**</td>
</tr>
</tbody>
</table>

N = 1028   -2 Log Likelihood = 1297.26  
* p<.05   ** p<.01

### TABLE 7
Logistic Regression Results of College Enrollment w/in 6 months

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>.086</td>
<td>.143</td>
<td>.362</td>
<td>1</td>
<td>.547</td>
<td>1.090</td>
</tr>
<tr>
<td>Title_I_Status</td>
<td>-.020</td>
<td>.138</td>
<td>.021</td>
<td>1</td>
<td>.884</td>
<td>.980</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>.253</td>
<td>.105</td>
<td>5.798</td>
<td>1</td>
<td>.016</td>
<td>1.288*</td>
</tr>
<tr>
<td>Achiever</td>
<td>1.299</td>
<td>.182</td>
<td>50.950</td>
<td>1</td>
<td>.000</td>
<td>3.664***</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.358</td>
<td>.266</td>
<td>26.041</td>
<td>1</td>
<td>.000</td>
<td>.257***</td>
</tr>
</tbody>
</table>

N = 1028   -2 Log Likelihood = 1236.28  
* p<.05   *** p<.001

### TABLE 8
Logistic Regression Results of College Enrollment w/in 9 months

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>.083</td>
<td>.137</td>
<td>.368</td>
<td>1</td>
<td>.544</td>
<td>1.087</td>
</tr>
<tr>
<td>Title_I_Status</td>
<td>.085</td>
<td>.133</td>
<td>.407</td>
<td>1</td>
<td>.524</td>
<td>1.089</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>.215</td>
<td>.102</td>
<td>4.419</td>
<td>1</td>
<td>.036</td>
<td>1.240*</td>
</tr>
<tr>
<td>Achiever</td>
<td>1.237</td>
<td>.191</td>
<td>41.911</td>
<td>1</td>
<td>.000</td>
<td>3.444***</td>
</tr>
<tr>
<td>Constant</td>
<td>-.877</td>
<td>.256</td>
<td>11.750</td>
<td>1</td>
<td>.001</td>
<td>.416***</td>
</tr>
</tbody>
</table>

N = 1028   -2 Log Likelihood = 1297.48  
* p<.05   *** p<.001

37
### TABLE 9
Logistic Regression Results of College Enrollment w/in 18 months

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
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<td>.153</td>
<td>.028</td>
<td>1</td>
<td>.868</td>
<td>.975</td>
</tr>
<tr>
<td>Title_I_Status</td>
<td>.510</td>
<td>.148</td>
<td>11.905</td>
<td>1</td>
<td>.001</td>
<td>1.666***</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>.245</td>
<td>.113</td>
<td>4.645</td>
<td>1</td>
<td>.031</td>
<td>1.277*</td>
</tr>
<tr>
<td>Achiever</td>
<td>1.543</td>
<td>.246</td>
<td>39.191</td>
<td>1</td>
<td>.000</td>
<td>4.677***</td>
</tr>
<tr>
<td>Missing18mo¹</td>
<td>-21.81</td>
<td>3288.81</td>
<td>.000</td>
<td>1</td>
<td>.995</td>
<td>.000</td>
</tr>
<tr>
<td>Constant</td>
<td>-.703</td>
<td>.281</td>
<td>6.254</td>
<td>1</td>
<td>.012</td>
<td>.495**</td>
</tr>
</tbody>
</table>

N = 1028  
-2 Log Likelihood = 1069.11

¹The missing variable was created to account for the impact of 2009 graduates who have not been out of school for 18 months

* p<.05  ** p<.01  *** p<.001

### TABLE 10
Logistic Regression Results of College Sectivity¹

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>-.189</td>
<td>.274</td>
<td>.475</td>
<td>1</td>
<td>.491</td>
<td>.828</td>
</tr>
<tr>
<td>Title_I_Status</td>
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<td>.265</td>
<td>.036</td>
<td>1</td>
<td>.849</td>
<td>1.052</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>.474</td>
<td>.197</td>
<td>5.788</td>
<td>1</td>
<td>.016</td>
<td>1.606*</td>
</tr>
<tr>
<td>Achiever</td>
<td>-.133</td>
<td>.308</td>
<td>.185</td>
<td>1</td>
<td>.667</td>
<td>.876</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.839</td>
<td>.532</td>
<td>28.452</td>
<td>1</td>
<td>.000</td>
<td>.058***</td>
</tr>
</tbody>
</table>

N = 487  
Likelihood(L) = 391.472

¹College is considered selective (value of “1”) if it admits less than 50% of applicants

* p<.05  *** p<.001

### TABLE 11
Logistic Regression Results of Transfer Status¹

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>.278</td>
<td>.357</td>
<td>.608</td>
<td>1</td>
<td>.436</td>
<td>1.321</td>
</tr>
<tr>
<td>Title_I_Status</td>
<td>-.613</td>
<td>.337</td>
<td>3.298</td>
<td>1</td>
<td>.069</td>
<td>.542</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>-.090</td>
<td>.253</td>
<td>.126</td>
<td>1</td>
<td>.722</td>
<td>.914</td>
</tr>
<tr>
<td>Achiever</td>
<td>-.281</td>
<td>.415</td>
<td>.458</td>
<td>1</td>
<td>.499</td>
<td>.755</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.007</td>
<td>.640</td>
<td>9.832</td>
<td>1</td>
<td>.002</td>
<td>.134**</td>
</tr>
</tbody>
</table>

N = 487, Likelihood (L)= 276.598

¹Transfer status reflects if a student has enrolled at more than one institution since first enrolling in college

** p<.01
### TABLE 12
OLS Regression Results of Achievers on 6-Year Graduation Rate

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-.033</td>
<td>.018</td>
<td>-.085</td>
<td>-1.904</td>
</tr>
<tr>
<td>Title_I_Status</td>
<td>-.022</td>
<td>.017</td>
<td>-.059</td>
<td>-1.321</td>
</tr>
<tr>
<td>CUM_GPA</td>
<td>.051***</td>
<td>.013</td>
<td>.180</td>
<td>3.994</td>
</tr>
<tr>
<td>Achiever</td>
<td>.057**</td>
<td>.019</td>
<td>.132</td>
<td>2.941</td>
</tr>
<tr>
<td>Constant</td>
<td>.253***</td>
<td>.033</td>
<td></td>
<td>7.718</td>
</tr>
</tbody>
</table>

F=7.44*** (n=486, df=4), R²=.058

** p<.01 *** p<.001

### TABLE 13
OLS Regression Results of Achievers on First-Year Retention Rate

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-.022</td>
<td>.012</td>
<td>-.081</td>
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</tr>
<tr>
<td>Title_I_Status</td>
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<td>.011</td>
<td>-.042</td>
<td>-.943</td>
</tr>
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<td>.009</td>
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<tr>
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<td>.013</td>
<td>.104</td>
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<tr>
<td>Constant</td>
<td>.566***</td>
<td>.022</td>
<td></td>
<td>25.365</td>
</tr>
</tbody>
</table>

F=7.51*** (n=486, df=4), R²=.059

* p<.05 *** p<.001


