Central Texas Student Futures Project
Conceptual Model

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Introduction

The Central Texas Student Futures Project is a research partnership of the Ray Marshall Center and ten Central Texas independent school districts (ISDs).[1] The project follows the progress of Central Texas high school seniors as they make the critical transition from high school to postsecondary education and the labor market.

The project relies on a combination of student surveys and linked administrative records to provide feedback in order to improve policy and program alignment for Central Texas ISDs that prepare students for the demands of adulthood and for success in the workplace. The purpose is two-fold:

- To provide Central Texas school districts, postsecondary institutions and employers with comprehensive, longitudinal research on what local high school students are doing after high school and how a variety of educational, personal and financial factors are related to their success in higher education and the workforce; and
- To foster best practices through workshops, seminars and applied research, assisting the region's ISDs, Education Service Center and postsecondary institutions to increase the number of regional youth who obtain postsecondary education and workforce credentials.

To determine both what students plan to do after high school and key influences on these outcomes, the Student Futures Project surveys students in the spring prior to graduation and links survey data to information from prior high school records and up to four years of postsecondary enrollment and employment records. Statistical analysis of the resulting data identifies background factors and educational practices associated with education and labor force outcomes. Findings are shared annually with local educators and business leaders committed to improving education and supporting local initiatives.

The following research questions guide the analysis of the Student Futures Project:

1. Which students are participating in postsecondary education?
2. Which students are going to work?

[1] The Central Texas Student Futures Project was previously named the Central Texas High School Graduate Data Center.

3. Which students are both working and participating in postsecondary education?

4. Which factors are associated with successful transition?

By design, the research questions addressed for each graduating class become more sophisticated as additional years of postsecondary education and employment data become available and possible combinations of post-high school activities grow more complex. This document presents the conceptual model that underpins the selection of variables to answer the Student Futures Project's research questions. It is based on a review of the large and expanding literature on the postsecondary transition and persistence processes. The review specifically focuses on the critical period between the high school senior year and early postsecondary experiences, and the variables found to have a statistically significant effect on key outcomes. It primarily utilizes well-established education research foundations and organizations (e.g., MDRC, Consortium on Chicago School Research, Community College Research Center, American Youth Policy Forum, and others), as well as articles in education journals and databases.

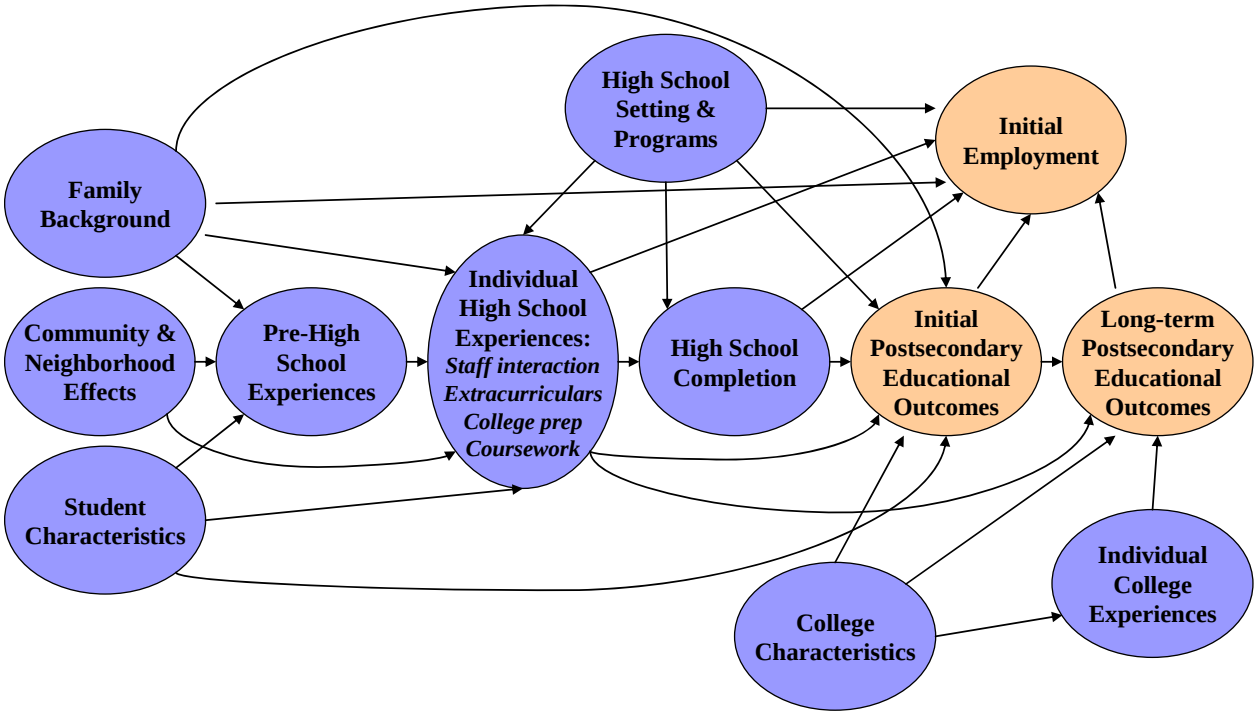
The Model

The variables identified in the literature and examined by the Student Futures Project fall into several broad categories: community and neighborhood effects, family background and influences, student characteristics, pre-high school experiences, high school setting and programs, individual high school experiences, college characteristics and individual college experiences. The specific variables in each category are presented in Appendix A, along with the researchers' expectations for their likely effects on initial postsecondary enrollment and employment. Expectations are based on findings in the research literature. Findings from the literature are based largely on associations, and causal conclusions are rarely warranted.

The conceptual model, shown in Figure 1, progresses in a largely chronological fashion, with family background, community and neighborhood effects and student characteristics being some of the earliest influences. Project outcomes focus on initial and long-term postsecondary results. In the initial discussion of the relevant literature, enrollment in college is not differentiated by college type (2-year versus 4-year) because a

significant portion of the literature does not make this distinction. However, other factors that promote or discourage any postsecondary enrollment are discussed, and research specific to 2-year colleges is presented. In terms of overall expectations, variables expected to have a positive effect on postsecondary education enrollment are generally expected to have a negative effect on initial employment after high school, and vice versa. Finally, it is worth noting that many variables are discussed as improving academic achievement, but are not explicitly listed as predictors of increased postsecondary enrollment; such variables are assumed to exert a positive influence on matriculation at college through higher student achievement.

Figure 1. Student Futures Project Hypothesized Conceptual Model



Review of the Literature

Students face many choices as they approach high school graduation and decide on their initial postsecondary pathways. Factors that affect their choice vary by the pathway – 4-year college, 2-year college, or employment – that each student pursues. Each particular pathway contains its own set of benefits and potential pitfalls.

Prior to high school graduation, many students have already taken steps toward pursuing a 4-year baccalaureate degree. With encouragement from their parents, many of

whom have completed some postsecondary education themselves, such students take college admissions tests, submit college applications, visit a number of campuses and fill out the Free Application for Federal Student Aid (FAFSA) and various scholarship applications (King et al. 2007). This pathway typically comes to mind when stakeholders consider initiatives to improve enrollment for traditionally underserved populations (e.g., Texas Higher Education Coordinating Board 2004).

Other students focus on a pathway to attend 2-year colleges, either as an initial step toward completing a 4-year degree or to gain a workforce credential or associate's degree. This pathway is also emphasized in *Closing the Gaps*, a study conducted by the Texas Higher Education Coordinating Board. Workforce projections suggest that many of the jobs generated over the next decade will require more than a high school diploma but less than a baccalaureate degree (Holzer and Lerman, 2007). Completing at least one year of postsecondary education and obtaining an occupational certificate results in substantial payoffs: greater wages, reduced need for government services and less involvement in criminal activity (Kane and Rouse 1995; Marcotte et al. 2005; Gill and Leigh 2003; Lochner 2004; and Prince and Jenkins 2005). Jenkins identifies a critical "tipping point" of earning at least ten credits – roughly a year's worth – plus an occupational certificate to reap the considerable earnings advantage (2008). Typically, fewer than half of academically prepared 2-year college students enroll in 4-year colleges or universities (Roksa and Calcagno 2008), and there are a number of different pathways that these transfer students take in transitioning to a 4-year institution (Achieving the Dream 2009).

A third group of students focuses only on work after high school. Unless these students are employed in growing sectors that offer opportunities for advancement and good wages, they are less likely to succeed in the labor market than either of the other two groups (Brown et al. 2006 and Andersson et al. 2005). In the present labor market, which is expected to add roughly 15.6 million new jobs between 2006 and 2016, integration of academic, technical, employability and career decision-making skills will be critical for employment in good jobs (Association for Career and Technical Education 2008). Moreover, access to and funding for training opportunities while working are much better for individuals who already have some postsecondary education (Lerman et al. 2004).

It is worth noting that these pathways are initial routes students may pursue. They are not necessarily the ones that are ultimately followed, nor are they likely to be linear. Students often shift between pathways (Gluszynski 2008).

Factors that Generally Promote or Discourage College Enrollment

This section discusses factors that generally promote or discourage matriculation at college, without distinguishing between 2-year and 4-year institutions.

Community and Neighborhood Effects

Growing up in wealthier communities and neighborhoods is expected to improve academic achievement, as well as decrease the likelihood of dropping out of high school for black students, and increase the likelihood of graduating from college for white students (Raudenbush and Garner 1991; Vartanian and Gleason 1999) (see Table 1). Having a community-run academic achievement program also has positive effects on students' grades, progression and attitudes toward school (Redd et al. 2002).

Table 1.

	Enrollment in Any College
Community & Neighborhood	
Wealthy community	+
Community academic program	+

Family and Background Variables

Many family background and influence variables also demonstrate positive effects for students (see Table 2). Parental involvement in education is widely regarded as a strong determinant of academic achievement and also promotes postsecondary enrollment (Barnard 2004; Choy et al. 2000; Fan and Chen 2001; Gonzalez-DeHass et al. 2005; Hoover-Dempsey et al. 2005; Jeynes 2003; McBride et al. 2005; Overstreet et al. 2005; Spera 2005). Parents that encourage their children to attend college increase the likelihood that their children will be qualified for college and ultimately enroll in college (Cabrera et al. 2000; Coneway 2007; King et al. 2007; Schexnayder et al. 2009). Students with "good" relationships with their parents also demonstrate higher academic achievement (Nebel-Schwalm 2006). Parental postsecondary experience, especially having a mother with a college degree, appears to decrease school mobility for students while growing up and promotes enrollment and

persistence in college (Coneway 2007; Horn and Carroll 1998; King et al. 2007; Schexnayder et al. 2009; Temple and Reynolds 1999). Finally, students are more likely to graduate from high school if their mother works (Haveman et al. 1991) and to enroll in college if an older sibling has already matriculated (Coneway 2007).

Table 2.

	Enrollment in Any College
Family Background	
Parental involvement	+
Parental encouragement for college	+
Good parental relationship	+
Parental postsecondary experience	+
Mother has a job	+
Sibling attended college	+
Single-parent household	-
Older sibling dropped out of high school	-
Number of siblings	-
Home language not English	-
Recent immigrant	-

An array of family background characteristics and influences also yield negative effects for students. Living in a single-parent household or having an older sibling who left high school without a degree is associated with decreased achievement (Krein and Beller 1988; Widmer and Weiss 2000), and having more siblings appears to decrease the likelihood that a student will complete high school (Haveman et al. 1991). In addition, speaking a language other than English at home or being a recent Latino immigrant are both associated with reduced academic achievement (Darling-Hammond 1999; Han 2006).

Individual Student Variables

A number of student characteristics yield negative effects on student success (see Table 3). Being non-white is associated with decreases in a student's cultural capital, academic achievement, likelihood of graduation for black and Hispanic students and college enrollment rates (Darling-Hammond 1999; Gong and Presley 2006; Perna 2000; Rumberger and Arellano 2007; King et al. 2007; Schexnayder et al. 2009). Conversely, Asian students indicate that they plan to spend more time in college than do students of other races (Ingels et al. 2008). Being male is associated with failing more high school freshman year courses, a

lower GPA, decreased odds of graduation, greater school mobility, being less likely to take three or more years of a foreign language and planning to spend fewer years in college (Allensworth et al. 2007; Roderick et al. 2006; Rumberger and Arellano 2007; Ingels et al. 2008). Being from a low-income family is also associated with decreased achievement, likelihood of graduating from high school, social and emotional development, number of science classes taken in high school, odds of attending only one high school, enrollment in college and enrollment in a competitive college (Darling-Hammond 1999; Gong and Presley 2006; Rumberger and Arellano 2007; MDRC 2008; King et al. 2007; Temple and Reynolds 1999; Ingels et al. 2008). Students classified as being limited proficient in English are less likely to achieve in school (Darling-Hammond 1999), and students classified as smokers, attention-deficit hyperactivity disorder (ADHD), depressed or obese have lower GPAs (Ding et al. 2006).

Table 3.

	Enrollment in Any College
Student Characteristics	
Being Asian	+
Being a non-Asian minority	-
Male	-
Low-income	-
Limited English Proficient	-
Smoker, ADHD, depressed, obese	-

Pre-High School Experiences

Pre-high school experiences also affect student achievement and enrollment in college (see Table 4). Participating in a high-quality pre-school program increases students' test scores and likelihoods of graduation (Schweinhart 2004). For minority students, completing high school coursework prior to their freshman year of high school is associated with an increased rate of matriculation at college (King et al. 2007; Schexnayder et al. 2009). Changing schools two or more times from the first through eighth grades is related to decreased reading and math achievement for the mover in seventh grade, and also linked to decreased achievement of other students within the mover's new school and the odds of the mover enrolling in a high-quality school in a new district. The association with negative achievement for other students in the mover's district is not present for military children.

The negative effects on students within the mover's new school are strongest for schools with low socioeconomic statuses or high concentrations of minorities (Temple and Reynolds 1999; Mehana and Reynolds 2004; Hanushek et al. 2004). Being retained in the first through eighth grades due to academic reasons is associated with decreased student achievement, reading and math test scores, likelihood of graduation and odds of being a normal age for his or her grade – which are also associated with negative effects on academic achievement and matriculation at college (Jimerson 1999; Reynolds 1992; Roderick 1994).

Table 4.

	Enrollment in Any College
Pre-High School Experiences	
High-quality pre-K	+
High school coursework	+
Changing schools	-
Retention	-

High School Setting and Program Variables

High school setting and program variables include staff, programs, course availability and characteristics, building quality and other school variables (see Table 5). Staff variables – specifically teacher qualifications and credentials, quality ratings, and years of experience – have been extensively researched. Some research finds that teachers with higher qualifications, better ratings or more years of experience are linked to higher student achievement and test scores (Clotfelter et al. 2007; Darling-Hammond 1999; Darling-Hammond and Youngs 2002; Presley et al. 2005; Wayne and Youngs 2003), whereas other research finds that there is no systematic relationship between teacher variables and experience (Goldhaber and Brewer 2000). Hanushek et al. suggest that the teacher variables only have positive effects for students of the same race as the teacher (2005). Strong teacher-student relationships promote academic achievement and lead to students that are more qualified for college (Hoy et al. 2006; Roderick et al. 2008). The presence teachers unions are associated with higher college entrance exam scores, and effective principal leadership and organizational health are related to better teacher performance and student achievement (Deal and Peterson 1990; DeMoss 2002; Schneider 2002; Waters et al. 2004; Brown et al. 2004).

Table 5.

	Enrollment in Any College
High School Setting and Programs	
High quality teachers	+
Teacher years of experience	+
Strong teacher-student relationship	+
Presence of teachers unions	+
Effective principal	+
Strong organizational health	+
Long-term mentorship program	+
AVID	+
GEAR-UP	+
Career Academy	+
Tech Prep	+
Preparation for college selection/application	+
Small class sizes	+
Number of advanced courses	+
School AP/IB test averages	+
Career development strategies/program	+
Quality classroom instruction	+
Good classroom environment	+
Higher school funding	+
School ACT/SAT test scores	+
School graduation rate	+
Small school size	+
Small learning community	+
Low dropout rate	+
Technology in schools	+
High institutional expectations	+
Many low-income/minority students	-

High school programs are also associated with student success. Participation in long-term mentorship programs (e.g., Big Brothers/Big Sisters and Campus Partners in Learning), AVID, and GEAR UP are all related to increased student achievement, greater enrollment in advanced courses, better attitudes toward school and increased matriculation at college (Jekielek et al. 2002; Austin ISD 2006; Swanson 2000; Watt et al. 2006; AISD 2006; Coneway et al. 2007). Enrollment in a career academy is associated with higher student engagement, graduation rates and future earnings, especially for young men (Kemple 2001; Kemple 2008). Participation in a Tech Prep program is related to higher rates of enrollment in college and of working after graduation, but schools with a high percentage of Tech Prep participants tend to have lower graduation rates (Bragg 2001; Rumberger and Arellano

2007). Finally, strong high school preparation in the college selection and application process is associated with increased college readiness and improved likelihood of college enrollment for individuals at risk of dropping out of high school (Roderick et al. 2008; Choy et al. 2000).

A number of high school class and curriculum variables can affect student achievement and matriculation at college. Small class sizes in the core subjects are associated with improved student performance, sometimes only for high achievers, and better teacher performance (Darling-Hammond 1999; Matthews 2008; Schneider 2002). A large offering of advanced courses is associated with increased achievement by students in college (Klopfenstein and Thomas 2005), and a high rate of students taking and scoring well on AP/IB exams is related to increased college enrollment rates (Dougherty et al. 2005). The presence of career development strategies in a high school's curriculum promotes a belief in the future value of education, greater intention to enroll in college and higher GPAs for girls (Lapan et al. 2003). Finally, quality classroom instruction and preparation is associated with increased student achievement and matriculation at college (Harnisch 1987; Rumberger and Arellano 2007).

High school environments are related to student success. Good lighting, acoustics and thermal environment, as well as a new facility in good overall condition, increase student achievement or enrollment in college (Earthman and Lemasters 1996; Heschong Malone Group 1999; Feth and Whitelaw 1999; Schneider 2002; Earthman and Lemasters 1998). Increased school funding is associated with greater reading (but not math) achievement and higher college enrollment rates (Darling-Hammond 1999; Deke 2003). Higher ACT scores, graduation rates and enrollment rates can be expected of charter school students (Booker et al. 2008). Smaller schools yield an array of benefits: improved attendance, graduation rates, extracurricular participation, parental involvement, teacher satisfaction, student attitudes and student matriculation at college (Cotton 2001; Cotton 1996). Smaller learning communities are also related to students' increased extracurricular participation and plans to attend college (Bernstein et al. 2008). A large number of high performing students are related to greater teacher quality and achievement at the school level (DeAngelis et al. 2005; Hanushek et al. 2002). Although a high student attendance rate is not a predictor of achievement for the school as a whole, a low dropout rate does predict student success (Caviglia-Harris 2004). This implies that the high school drop out rate is related to negative changes in the school

environment. There is weak evidence that technology in schools promotes student achievement (Middleton and Murray 1999), and high institutional expectations are related to improved achievement, matriculation at college and employment at a good job (Achieve, Inc. 2008; Hoy et al. 2006; Roderick et al. 2008). Finally, schools with a large share of low-income or minority students are associated with lower teacher quality (DeAngelis et al. 2005; Presley et al. 2005; Temple and Reynolds 1999), and concentrations of low-income students also yield lower college enrollment rates for minorities (Kain and O'Brien 2000).

Individual High School Experiences

Students' individual high school experiences include coursework, extracurricular activities, staff and counselor interactions and individual college preparation activities (see Table 6). A good high school GPA is associated with a greater likelihood of graduation and college enrollment (Allensworth et al. 2007; Roderick et al. 2006; Rumberger and Arellano 2007). Better performance on high school exit exams is associated with higher college enrollment rates for minorities and slightly improved high school achievement for all students (Carnoy et al. 2001; Kain and O'Brien 2000). On the other hand, failing a freshman year course appears to decrease the likelihood a student will graduate (Allensworth et al. 2007; Rumberger and Arellano 2007). Recent reports highlight the importance of the ninth to tenth grade transition, but they also suggest that many students who enter tenth grade 'on track' will be behind within two years (Quint et al. 2008). Lastly, changing schools from ninth through twelfth grades is associated with a decreased likelihood of graduation and college enrollment (Coneway 2007; Rumberger and Larson 1998).

Table 6.

	Enrollment in Any College
Individual High School Experiences (Coursework)	
GPA	+
Exit exam performance	+
Failing freshman year courses	-
Changing schools	-

Extracurricular Variables

An array of extracurricular factors also affects student achievement and matriculation at college (see Table 7). Participating in extracurricular activities, especially sports or music, improves chances for graduation and college enrollment (Rumerger and Arellano 2007; King et al. 2007; Schexnayder et al. 2009), and attending religious services is expected to increase achievement for black and Hispanic students (Jeynes 1999). Being employed while in high school is associated with greater 4-year college enrollment for white students (King et al. 2007), and greater amounts of studying appears to improve math, science and reading achievement (Green et al. 1995). Students with high personal plans and expectations tend to enroll in college at greater rates (King et al. 2007). Having friends in college is associated with an increased likelihood of enrollment, especially for at-risk students (Fletcher 2006; Choy et al. 2000). Motivated students, as well as those with positive opinions of high school, have greater odds of graduating, whereas students struggling with personal events have lower odds of graduating (Bridgeland et al. 2006).

Table 7.

	Enrollment in Any College
Individual High School Experiences (Extracurriculars)	
Participating in extracurriculars	+
Attending religious services	+
Being employed	+
High personal plans/expectations	+
Having friends already in college	+
Motivation	+
Positive opinion of high school	+
Struggling with personal events	-

Individual College Preparation Activities

A number of individual college preparation activities can also improve student achievement and college matriculation rates (see Table 8). Taking a college entrance exam, as well as higher exam scores, are both related to greater college enrollment (Schexnayder et al 2009; King et al. 2007; Roderick et al. 2006). For Texas students, completing the Distinguished or Recommended graduation plans are associated with higher enrollment rates, and maintaining college readiness through academic progress is correlated with higher GPAs

and more college – especially 4-year college (King et al. 2007; Gong and Presley 2006; Horn et al. 2001).

Table 8.

	Enrollment in Any College
Individual High School Experiences (College Preparation Activities)	
Took college entrance exam	+
College entrance exam score	+
Distinguished or Recommended Plan	+
College-ready academic progress	+
Dual-credit	+
Number of AP courses	+
Easy financial aid process	+
Completed FAFSA	+
Parental financial support	+
Visited a college	+
Attended high school outreach program	+
Number of schools applied to	+
College as a part of student's life plan	+

Exposing students to college-like courses can be an important part of the postsecondary transition process (Quint et al. 2008). Enrolling in dual credit courses improves graduation rates, test scores, return on investment in high school and matriculation at college (Bailey et al. 2003; Karp et al. 2008; Karp et al. 2007; Lerner and Brand 2006; Palaich et al. 2006). Taking a large number of AP courses raises test scores and college enrollment (Roderick et al. 2006; Adelman 1999; Klopfenstein and Thomas 2005).

An easy financial aid process – according to student evaluation – is associated with increased college application rates (Cabrera and La Nasa 2000), and filling out a FAFSA is associated with increased matriculation at college (Schexnayder et al. 2009; Roderick et al. 2008; King et al. 2007). Highly publicized and simple financial aid processes are most effective, and grant- and need-based aid appears to increase access to postsecondary education more than loans/tax credits and merit aid, respectively (Long 2008). Students that receive financial support from their parents are more likely to go to college (Keane and Wolpin 2001). Visiting a college, attending a high school outreach program and applying to a greater number of schools is associated with a greater rate of college enrollment (King et al.

2007; Choy et al. 2000; Roderick et al. 2008; Schexnayder et al. 2009). Finally, simply making college a part of the student's individual life plan – through family planning, interactions with guidance counselors, or other actions – promotes college enrollment (Quint et al. 2008).

Factors Specific to 2-year College Enrollment

The literature examining the transition from high school to 2-year college enrollment is limited, with most books, articles and reports discussing the transition to college in general rather than the transition specifically to a 2-year institution. The Community College Research Center (CCRC) and recent Student Futures Project publications provide some of the most current information on this pathway (see Table 9). Overall, vocational education is being provided by postsecondary institutions in greater proportions (Grubb 1996), making the high school to 2-year college transition more critical than ever.

Table 9

	Enrollment in a 2-year College
Low-income	+
Career Academy	+
Dual-credit	+
Meeting with counselor	+
Visited a college	-
Submitted financial aid application	-

An increasingly integrated education system, specifically at the postsecondary entrance point of the education pipeline, is critical to fostering matriculation at community college. Well defined institutions with clear articulation agreements and standards for progression will enhance integration (Grubb 1996). Specific examples of this integration could be dual-enrollment programs and career academies. Early evidence of credit-based transition programs seems promising regarding college outcomes (Bailey and Karp 2003).

Integrated support services are also important to foster transition to 2-year colleges (Grubb 1996). Meetings with counselors regarding course selection and placement, financial aid information, a high school 4-year plan and career information are all associated with greater rates of enrollment in 2-year colleges. Students enrolling in 2-year colleges are less

likely to visit college campuses or submit college or financial aid applications (King et al. 2007; Schexnayder et al. 2009).

Finally, low-income students are more likely to enroll in 2-year colleges. This disparity was found in 1988 and again in 1998, despite a number of policies aimed at alleviating gaps in educational attainment (Gladieux and Swail 1998).

Factors Promoting Persistence in Postsecondary Education

Definitions of persistence vary throughout the literature, but one commonly used option is the commencement of a second year of studies. Persistence can also be defined as degree completion – typically referred to as persistence to graduation/degree.

Various demographic characteristics are associated with improved persistence (see Table 10). Higher-income students, non-minority students and students enrolling full-time directly out of high school are more likely to complete a degree within five years (Gladieux and Swail 1998).

Table 10.

	Persistence in college
Parental postsecondary experience	+
Being a non-Asian minority	-
Low-income	-
GPA	+
Number of math classes	+
Took college entrance exam	+
Dual-credit	+
Number of AP courses	+
AP test scores	+
Working full-time	-
Scholarships and grants	+
Parental financial support	+
Reliance on loans	-
Starting at a 2-year college	-
Entering academically unprepared	-
Cultural/social capital	+
Freshman learning communities	+
Passing college-level math/writing courses	+
Completing various credit thresholds	+
Earning an Associate's degree	+

Many high school experiences are associated with increased persistence in postsecondary education. A greater number of math classes, more AP classes, a better GPA and higher scores on academic aptitude tests are all associated with increased bachelor's degree attainment (Adelman 1999; Astin 1972; Jacobson and Mokher 2009; Roderick et al. 2006). Further, good AP test scores predict improved college achievement (Geiser and Santelices 2004). Enrollment in dual-credit courses is also related to improved college persistence, college GPA and college credits earned (Karp et al. 2008; Karp et al. 2007; Lerner and Brand 2006). Other experiences and characteristics reduce persistence, such as working full-time during college and having parents who did not attend college (Choy 2002).

Being a recipient of financial aid while in college also has been a predictor of student persistence. Students relying on scholarships, work-study, or grants have increased likelihoods of completing college, whereas reliance on loans appears to decrease the chances of completion. Parental support while in college is another predictor of persistence to graduation (Astin 1975).

Beginning postsecondary education at a community college is associated with a reduced likelihood of persistence (Choy 2002). Two-year college students face a number of unique challenges to persistence when compared to 4-year college students. Two-year students are more likely to be less academically prepared, enrolled part-time, employed while in school, not of traditional college-going age and of minority descent or low socioeconomic status background (McIntosh and Rouse 2009).

Persistence results for students who are enrolled in developmental or remedial sequences at community colleges are mixed. Bailey et al. (2008) find that only three to four of every ten students referred to such sequences complete the sequence; more students do not complete developmental sequences because they do not enroll in a necessary course than because they fail a necessary course. On the other hand, Calcagno and Long (2008) find that assignment to remedial courses does increase persistence to the second-year of community college; however, it does not increase completion of college-level credits or degrees. Integrated basic skills approaches have demonstrated potential in facilitating the persistence of basic skills students to critical tipping points that increase post-community college earnings (Jenkins 2008; Prince and Jenkins 2005; Washington State Board for Community and Technical Colleges 2005). Still, entering college academically under-prepared has

negative effects that cannot be obviated by even the most demanding intermediate outcomes (Roksa and Calcagno 2008).

Several community college demonstration projects highlight the importance of financial, cultural and social capital resources in persisting at college. Students receiving support in these areas are more likely to stay in school and receive a credential or degree (Dynarski 2003; Karp et al. 2008; MDRC 2007). Faculty members tend to report offering higher levels of support for students and more student engagement than students report at community colleges (Community College Survey of Student Engagement 2008). Additionally, freshman learning communities in which students take their classes with cohorts of up to 25 peers improve academic achievement, decrease the time it takes to complete developmental English requirements and demonstrate mixed results regarding persistence (Scrivener et al. 2008). Students entering college with greater cultural capital are more likely to take advantage of capital-building resources (Karp et al. 2008).

Various activities and benchmarks for community college students promote persistence and transfer to 4-year institutions. Passing college-level math and writing courses, meeting specific credit thresholds (eg: 24-, 36-, and 48-credit hours) and earning an associate's degree are among the most promising of these activities and benchmarks (Roksa and Calcagno 2008).

Conclusion

This document represents an initial examination of the literature and a first attempt at synthesizing this literature into a cogent conceptual model for the postsecondary transition and persistence processes. More research is necessary to examine the initial postsecondary employment pathway. Moreover, new sources of information continue to be released and discovered. As such, this conceptual model is evolving and will be a regularly updated document.

Appendix A: Expected Effects of Independent Variables

	Enrollment in Any College	2-year Enrollment	Persistence
Community & Neighborhood			
Wealthy community	+		
Community academic program	+		
Family Background			
Parental involvement	+		
Parental encouragement for college	+		
Good parental relationship	+		
Parental postsecondary experience	+		+
Mother has a job	+		
Sibling attended college	+		
Single-parent household	-		
Older sibling dropped out of high school	-		
Number of siblings	-		
Home language not English	-		
Recent immigrant	-		
Student Characteristics			
Being Asian	+		
Being a non-Asian minority	-		-
Male	-		
Low-income	-	+	-
Limited English Proficient	-		
Smoker, ADHD, depressed, obese	-		
Pre-High School Experiences			
High-quality pre-K	+		
High school coursework	+		
Changing schools	-		
Retention	-		
High School Setting and Programs			
High quality teachers	+		
Teacher years of experience	+		
Strong teacher-student relationship	+		
Presence of teachers unions	+		
Effective principal	+		
Strong organizational health	+		
Long-term mentorship program	+		

Appendix A: Expected Effects of Independent Variables (cont.)

	Enrollment in Any College	2-year Enrollment	Persistence
High School Setting and Programs (cont)			
AVID	+		
GEAR-UP	+		
Career Academy	+	+	
Tech Prep	+		
Preparation for college selection/application	+		
Small class sizes	+		
Number of advanced courses	+		
School AP/IB test averages	+		
Career development strategies/ program	+		
Quality classroom instruction	+		
Good classroom environment	+		
Higher school funding	+		
School ACT/SAT test scores	+		
School graduation rate	+		
Small school size	+		
Small learning community	+		
Low dropout rate	+		
Technology in schools	+		
High institutional expectations	+		
Many low-income/minority students	-		
Individual High School Experiences (Coursework)			
GPA	+		+
Exit exam performance	+		
Failing freshman year courses	-		
Number of math classes			+
Changing schools	-		
Individual High School Experiences (Extracurriculars)			
Participating in extracurriculars	+		
Attending religious services	+		
Being employed	+		
High personal plans/expectations	+		
Friends in college	+		
Motivation	+		
Positive opinion of high school	+		
Struggling with personal events	-		

Appendix A: Expected Effects of Independent Variables (cont.)

	Enrollment in Any College	2-year Enrollment	Persistence
Individual High School Experiences (College Preparation Activities)			
Took college entrance exam	+		+
College entrance exam score	+		
Distinguished or Recommended Plan	+		
College-ready academic progress	+		
Dual-credit	+	+	+
Number of AP courses	+		+
AP test scores			+
Easy financial aid process	+		
Completed FAFSA	+		
Parental financial support	+		
Visited a college	+		
Attended high school outreach program	+		
Number of schools applied to	+		
College as a part of student's life plan	+		
Individual High School Experiences (Staff Interactions)			
Meeting with counselor		+	
Visited a college		-	
Submitted financial aid application		-	
Individual College Experiences			
Working full-time			-
Scholarships and grants			+
Parental financial support			+
Reliance on loans			-
Starting at a 2-year college			-
Entering academically unprepared			-
Cultural/social capital			+
Freshman learning communities			+
Passing college-level math/writing courses			+
Completing various credit thresholds			+
Earning an Associate's degree			+

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