

# **Education and Work After High School: Findings from Multi-Methods Research in Central Texas**

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## **Overview**

The Central Texas Student Futures Project (Student Futures Project) is a research partnership of the Ray Marshall Center for the Study of Human Resources at the University of Texas at Austin, Skillpoint Alliance and eight Central Texas independent school districts (ISDs). One of the purposes of this project is to provide Central Texas school districts, postsecondary education institutions and employers with comprehensive, longitudinal research on what local high school students do after high school and how a variety of educational, personal and financial factors relate to their success in higher education and the workforce. National research datasets are frequently unable to provide region-specific information on high school graduate transitions. The combination of survey data (described further below) and administrative records in the regression analyses is particularly powerful and fairly unique in studies of postsecondary transitions, especially regionally-focused studies. This unique data set is also of a sufficient size to support new insights into the way various factors influence college enrollment and retention differently for key population subgroups (e.g., Hispanic, low-income, and first-generation college students) that are less likely to attend postsecondary education.

The project surveys seniors in the spring prior to graduation on their family background and influences, and their pre-high school and high school experiences. Graduates' actual postsecondary education and work outcomes are computed annually (for at least four years) using postsecondary enrollment and employment records. Data from prior high school records and the senior survey are added to the longitudinal outcomes data from the National Student Clearinghouse (NSC), directory information from the University of Texas at Austin and the University of North Texas, and employment information from the Texas Workforce Commission. These records are then used to identify those background factors and educational activities associated with specific education and labor force outcomes. Findings are shared annually with local educators, business and community leaders, and policymakers committed to improving the quality of education and employment in Central Texas.

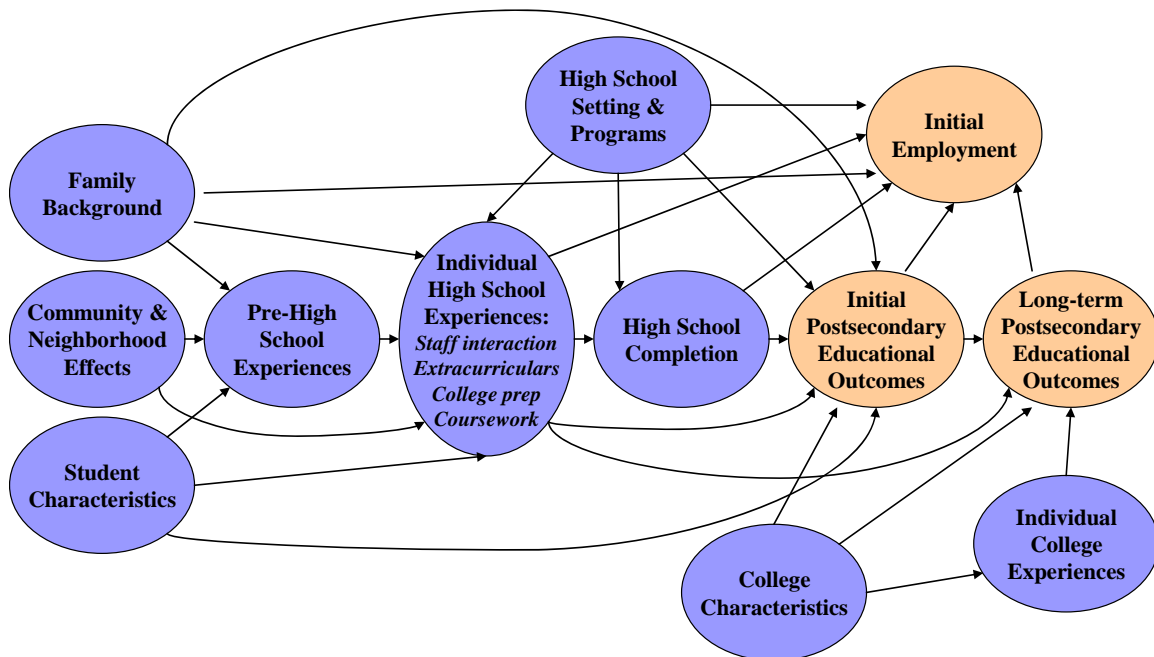
This paper presents the results of initial postsecondary enrollment and employment outcomes — measured in the fall of 2007 — for the 9,394 Central Texas high school graduates of the class of 2007 in the eight independent school districts (ISDs) that participated in the Student Futures Project. The paper also reports logistic regression results that measure the relationship of student-level variables on initial enrollment in 4-year schools for the 3,091 survey takers across the entire region. The high schools in this sample also differ across many dimensions — size, student demographics, student mobility, teacher

experience and the types of college preparation services offered — and the paper uses hierarchical linear modeling (HLM) to begin exploring which differences in student outcomes are attributable to the differences in the individual high schools that they attended. Finally, the paper presents conclusions from this work and plans for future research.

### Background Literature and Conceptual Model

The literature documents a number of factors that influence student transitions to postsecondary education and the workforce. These factors can be grouped into several broad categories: community and neighborhood effects; family background and influences; student characteristics; pre-high school experiences; high school setting and programs; and individual high school experiences. Based on this literature, the Ray Marshall Center has developed a conceptual model to reflect how and when these broad categories influence education and employment outcomes. The conceptual model presented in Figure 1 progresses in a chronological fashion, beginning with family background as one of the earliest influences on students’ pathways and ending with individual college experiences as one of the last (Levy and King, 2009).

**Figure 1. Student Futures Project Conceptual Model**



## Research Questions

This paper addresses the following research questions for 2007 graduates:

1. What share of high school graduates enrolled in 4-year postsecondary institutions in the fall after graduation?
2. What share of graduates was employed in the fall quarter after graduation?
3. What share of graduates was both enrolled in postsecondary education and employed in the fall quarter after graduation?
4. Which factors — family background and influences, student characteristics, pre-high school and individual high school experiences — are statistically associated with initial enrollments in 4-year colleges or universities? How does this vary for selected population groups?

## Research Methods

Researchers used both descriptive statistics and more sophisticated multivariate techniques to measure initial outcomes for 2007 high school graduates.

***Descriptive Statistics:*** The first three research questions that measure initial postsecondary enrollment and employment were analyzed by computing the numbers and shares of all graduates in participating school districts who enrolled in postsecondary education in Texas and other states, were employed in Texas, or did both in the fall after high school graduation.

***Multivariate Analysis:*** To address the fourth research question, researchers first used maximum likelihood logistic regression analysis to identify which *individual-level* variables were statistically linked to initial enrollment in a 4-year school. School district dummy variables were used to control for base-level differences across districts.

The dependent variable was a binary variable that measured enrollment in a 4-year school against all other possible outcomes.<sup>1</sup> Explanatory variables in the regression models were developed from the categories of individual student factors — family background, student characteristics, pre-high school experiences and individual high school experiences — that were cited in the literature and could be constructed from prior school records, earnings records or senior survey data available for this research. Examples of variables that could be constructed from historical school records or earnings administrative records include courses taken, graduation plans and class rank; participation in Special Education or

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<sup>1</sup> Future reports will explore the use of multinomial logistic regression using categorical outcome measures instead of binary measures.

Gifted and Talented (G/T) programs; and earning more than \$2,000 during the senior year. Information from the senior survey was used to construct additional variables cited in the literature that could not be measured from administrative records: Examples include: parents' educational attainment; extracurricular activities; and college preparation activities, including plans for financing any further education. Appendix A provides a complete list of the explanatory variables and the data source used to construct each variable.

Some regressions were run for all 2007 graduates (not shown), but the most complete models could only be estimated for those graduates whose survey data could be linked to their administrative records. Thus, the findings presented here apply to all *surveyed* graduates in Central Texas but may not always apply to the *universe* of those graduates.<sup>2</sup>

This paper also begins the process of examining the high school setting variables in light of the hierarchical structure of the data by allowing the intercept term to vary by high school and finding significant variation of student postsecondary transitions across schools.

### **Characteristics of the Research Sample**

The demographic characteristics of all 2007 high school graduates (N=9,394) in the eight Central Texas school districts included in this study are presented in Table 1. White graduates constituted approximately half of all graduates, followed by Hispanics at 29% of the total. Graduates were evenly split between genders. Graduates from low-income families made up about 21% of the 2007 sample.<sup>3</sup> One in ten graduates was enrolled in Special Education. The three school districts with the largest share of graduates in the Fall 2007 research dataset were Austin, Round Rock and Leander ISDs, whose graduates comprise 38%, 23% and 12% of the dataset respectively. The sample of surveyed graduates (N=3,061) is not completely representative of all 2007 graduates due to low survey completion and consent rates in some school districts.

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<sup>2</sup> Readers who are interested in results from the full regression models on all graduates should refer to the full report from which this paper was drawn (Schexnayder et al., 2009). A complete analysis of senior survey responses is included in Smith et al., 2008.

<sup>3</sup> Low-income status depends on participation in the federal free/reduced lunch program. Some eligible families may opt to not complete the application, which may result in an undercount of the actual number of low-income graduates (Gleason, 1995).

**Table 1. Characteristics of 2007 Central Texas Graduates**

|                                 | All Graduates | Surveyed Graduates |
|---------------------------------|---------------|--------------------|
| N                               | 9,394         | 3,061              |
| <b>Race/Ethnicity</b>           |               |                    |
| Asian                           | 6%            | 5%                 |
| Black                           | 11%           | 10%                |
| Hispanic                        | 29%           | 31%                |
| White                           | 53%           | 53%                |
| Other                           | 1%            | 1%                 |
| <b>Gender</b>                   |               |                    |
| Female                          | 49%           | 52%                |
| Male                            | 51%           | 48%                |
| <b>Family Income Status</b>     |               |                    |
| Low-income                      | 21%           | 21%                |
| Not low-income                  | 76%           | 79%                |
| Unknown                         | 3%            | 0%                 |
| <b>Special Education Status</b> |               |                    |
| Special Education               | 10%           | 6%                 |
| Not Special Education           | 88%           | 94%                |
| Unknown                         | 2%            | 0%                 |
| <b>School District</b>          |               |                    |
| Austin                          | 38%           | 66%                |
| Del Valle                       | 3%            | 2%                 |
| Eanes                           | 6%            | 6%                 |
| Leander                         | 12%           | 10%                |
| Manor                           | 2%            | 1%                 |
| Pflugerville                    | 11%           | 5%                 |
| Round Rock                      | 23%           | 8%                 |
| San Marcos                      | 5%            | 3%                 |

Source: Student Futures Project calculations.

Note: Totals do not always equal 100% due to rounding.

## Research Results

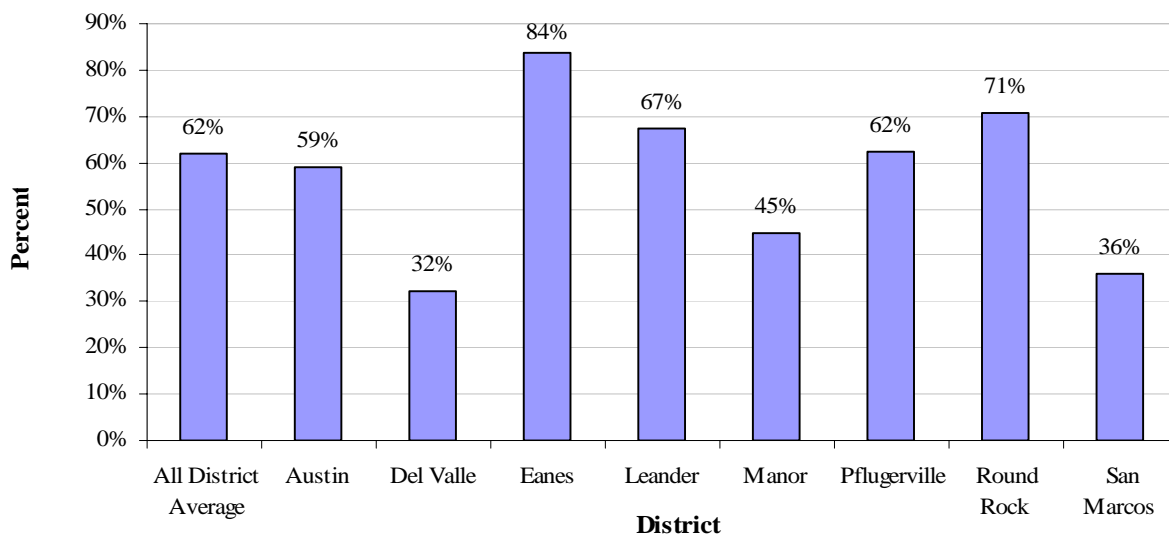
### *Initial Descriptive Outcomes for 2007 High School Graduates*

*Enrollment.* Of the 9,394 total graduates from the participating districts, 62% enrolled in postsecondary education in the fall after graduation. Contrary to the pattern of post-high school outcomes in Texas as a whole, a substantially larger share of Central Texas graduates enrolled in 4-year schools after graduation than in 2-year colleges. Forty percent of all graduates matriculated at 4-year universities, while 22% enrolled in 2-year colleges or technical schools. Both the overall Central Texas college enrollment rates and the share enrolled in 4-year schools were fairly similar to those for the United States as a whole, which had a 67% total enrollment rate and 43% enrolled in 4-year schools, according to the Bureau of Labor Statistics (2008).

A majority of graduates (54%) enrolled at in-state institutions, while the remainder (8%) enrolled at out-of-state institutions. A lower share of graduates actually enrolled in postsecondary education in the fall after graduation than those who said that they planned to enroll when surveyed in the spring.

The diversity of the high schools and districts and school districts in this sample is reflected in their overall enrollment rates for graduates. As shown in Figure 2, the enrollment rates across the eight ISDs in the study ranged from 84% (Eanes ISD) to 32% (Del Valle ISD). A majority of enrolled graduates from every district matriculated to 4-year universities. Leander ISD sent the largest share of its graduates to 2-year colleges or technical schools (28%), while only 11% of Eanes ISD graduates attended 2-year schools. Of all districts, Leander ISD had the largest share of graduates attending in-state institutions (62%); Eanes ISD sent the largest share of its graduates to out-of-state colleges/universities (29%).

**Figure 2. Percent of 2007 Graduates Enrolled in Postsecondary Institutions in Fall 2007, by District**

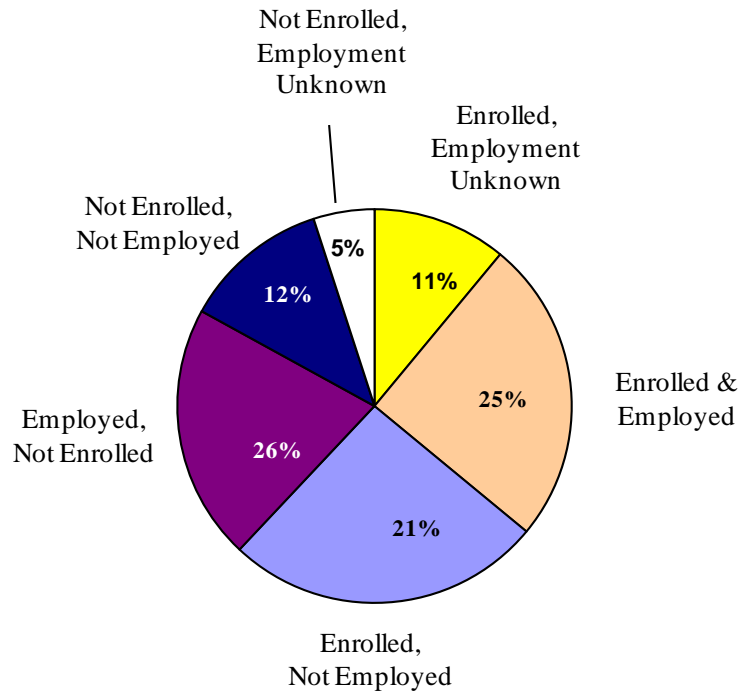


Asian and White graduates enrolled at higher rates (78% and 72%, respectively) than graduates of other racial/ethnic groups. Hispanic graduates had the lowest overall enrollment rate (44%) across all race/ethnic groups. Low-income graduates enrolled at far lower rates (40%) than other graduates (70%). Special Education graduates enrolled at much lower rates (29%) than those graduates not classified as such (67%). Most of these differences occurred due to variation in enrollment rates at 4-year institutions, as 2-year enrollment rates were relatively consistent across all of these groups.

*Employment.* Nearly half of all graduates (46%) were employed in the state of Texas during the fourth quarter of 2007.<sup>4</sup> Texas employment rates were higher for graduates who were Hispanic, Black or from a low-income family (53% each). Asian graduates had the lowest employment rates of all racial/ethnic groups (30%). Initial employment rates were generally higher for graduates from districts with lower overall rates of postsecondary enrollment.

*Enrollment and employment.* Over eight of every ten graduates (83%) were located either in postsecondary education or employment. Across all districts, 25% of graduates were both enrolled and employed within the state of Texas while a nearly equal share (26%) were enrolled but not employed. Twenty-one percent of graduates were employed within the state of Texas but not enrolled in postsecondary education and 12% were neither employed nor enrolled in postsecondary education. Of the 16% of graduates with unknown employment status, 11% were enrolled in out-of-state institutions and 5% were not enrolled at any institution (Figure 3).

**Figure 3. Initial Postsecondary Education and Employment Outcomes for 2007 Graduates**



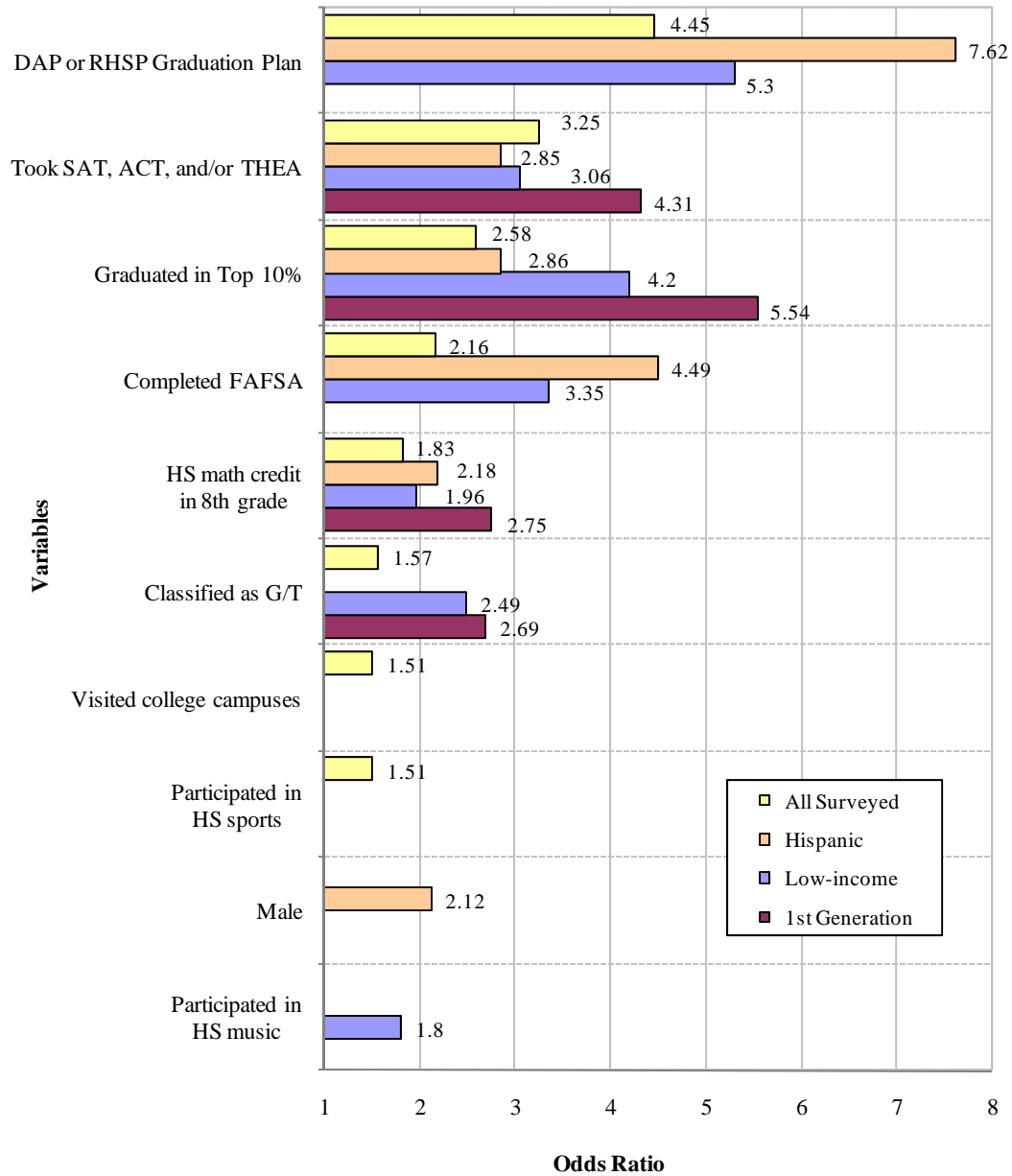
<sup>4</sup> Employment could only be measured for those working in Texas who had reported their Social Security numbers to their high schools.

### ***Logistic Regression Results of Factors Increasing Odds of Enrolling in 4-Year Schools***

As mentioned above, four of every ten Central Texas high school graduates enrolled in 4-year colleges and universities in the fall immediately following their graduation, the most typical pathway of all measured outcomes. After holding all other variables constant, several variables increased the odds of enrolling in 4-year schools by more than 50% (Figure 4) for all surveyed graduates. The strongest effect on 4-year enrollments was completion of the Distinguished Achievement Program (DAP) or Recommended High School Plan (RHSP) for graduation, the Texas curriculum plans suggested for students who intend to pursue further education. Completing all academic requirements for one of those graduation plans increased the odds of attending a 4-year college or university by 345%.

Numerous other factors significantly increased the odds of enrollment in 4-year colleges and universities for surveyed graduates. After holding all other variables constant, the factors next most strongly associated with increasing the odds of 4-year enrollment for all surveyed graduates included (in order of strength): taking college placement exams, graduating in the Top 10% of the class and completing FAFSA; all of these more than doubled the odds of 4-year enrollment. These were followed (also in order) by receiving high school math credit in 8<sup>th</sup> grade, being identified as gifted/talented, visiting one or more college campus and participating in high school sports, which all increased 4-year enrollment odds by at least 50%. Complete logistic regression results are included in the appendix to this paper.

**Figure 4. Major Factors Significantly Associated with Increased Odds of 4-Year Postsecondary Education Enrollment for Surveyed Graduates**



In addition to reporting major factors statistically associated with 4-year enrollments for all surveyed graduates, Figure 3 also lists factors that increased the odds of 4-year enrollments for key groups of interest — Hispanic graduates, students from low-income families and graduates who would be the first in their families to attend college. One of the unique features of this research dataset is its large sample size for population groups that traditionally have had far lower rates of enrollment in postsecondary education than other graduates and are thus of particular interest to stakeholders seeking to improve enrollment in

postsecondary education. As shown in Figure 4, the pattern of variables most strongly linked to 4-year enrollments varied somewhat for each of these groups. Only three variables — taking college entrance exams, graduating in the Top 10% and receiving high school math credit in 8<sup>th</sup> grade — increased the odds of 4-year enrollment by more than 50% for all four groups. No variables reduced the odds of enrollment in 4-year institutions by more than 50%. Table 2 lists all statistically significant variables for logistic regressions run on all surveyed graduates and the specific populations of interest.

**Table 2. Summary of Factors Significantly Associated with Initial Enrollment in 4-Year Postsecondary Education for 2007 Surveyed Graduates**

|  | All   | Low-income | First-generation | Hispanic |
|--|-------|------------|------------------|----------|
| N  | 3,061 | 647        | 746              | 939      |
| Hispanic   | -     |            |                  |          |
| Male   |       |            |                  | +        |
| Low-income   | -     |            |                  |          |
| Classified as G/T  | +     | +          | +                |          |
| Received high school math credit in 8 <sup>th</sup> grade                    | +     | +          | +                | +        |
| Failed any 9 <sup>th</sup> grade course                                      | -     |            | -                | -        |
| Took a sequence of CTE courses   | -     |            |                  | -        |
| Took Tech Prep courses   | -     |            |                  | -        |
| Graduated in Top 10%   | +     | +          | +                | +        |
| Graduated under DAP or RHSP  | +     | +          |                  | +        |
| Earned more than \$2,000 during senior year                                  | -     |            |                  | -        |
| First thought of college as an option in high school                         | -     |            |                  | -        |
| Mother or father completed at least a bachelor's degree                      | +     |            |                  |          |
| Participated in extracurricular music (school)                               | +     | +          |                  |          |
| Participated in extracurricular sports (school)                              | +     |            |                  |          |
| Participated in extracurricular sports (non-school)                          | +     | +          |                  |          |
| Spent 16+ hours per week working in senior year                              | -     |            |                  |          |
| Discussed writing resumes/job applications/career information with counselor | -     |            |                  |          |
| Discussed grades/tests scores/academic performance with a counselor          |       |            | -                |          |
| Discussed personal/family issues with a counselor                            | -     |            |                  | -        |
| Visited one or more college campuses   | +     |            | +                |          |
| Took the PSAT  | +     |            |                  |          |
| Took college entrance tests (SAT, ACT, and/or THEA)                          | +     | +          | +                | +        |
| Completed FAFSA  | +     | +          | +                | +        |
| Felt very well/well prepared for college/career goals                        | +     |            |                  | +        |
| Felt not very well/not at all prepared for college/career goals              | -     |            | -                |          |
| Did not plan on borrowing money for college                                  |       |            |                  | -        |
| Uncertain about borrowing money for college                                  | -     | -          | -                | -        |

Note: + increased odds of enrollment  
 - decreased odds of enrollment

Shaded cells indicate that the variable was dropped from the analysis.

***Hispanic Graduates.*** Many of the key factors that significantly influenced the odds of 4-year enrollments for all surveyed graduates had similar effects for Hispanic graduates. However, the strength of various factors differed for Hispanic graduates. For example, while completing the DAP or RHSP was the most important factor both for all surveyed graduates and for Hispanic graduates, completing one of those curriculum plans increased Hispanic graduates' odds of 4-year college enrollment by over 650% (compared to only 345% for all graduates). FAFSA completion was also particularly important for Hispanic graduates, increasing the odds of enrollment by 350%.

Several factors worked differently for Hispanic graduates than for the entire sample. After controlling for other effects, Hispanic males were twice as likely to enroll in 4-year colleges than Hispanic females, while gender had no effect for all surveyed graduates. Some variables linked to higher odds of 4-year enrollments were not statistically significant for Hispanics. These include: parents' education, participation in extracurricular sports or music, taking the PSAT and visiting college campuses. Another difference was that Hispanic graduates who did not plan to borrow money for college were less likely to enroll in 4-year schools.

***Low-income graduates:*** Family income plays an important role in shaping graduates' chances for going on to college or university. Graduates from low-income families, who make up just over one-fifth of all surveyed graduates, had an initial 4-year enrollment rate of just 19%, compared to 47% for non-low-income graduates.

Figure 4 and Table 2 summarize the estimated 4-year enrollment effects for surveyed low-income graduates. Far fewer variables were linked to higher rates of 4-year enrollments for low-income graduates than for all surveyed graduates. As shown in Figure 8, the variables most strongly linked to 4-year enrollments for low-income graduates were completing the DAP/RHSP curriculum, which increased the odds of enrollment by 430%, and graduating in the Top 10% (which increased the odds by 320%). Other academic factors related to higher enrollment rates were G/T classification and high school math credit in 8<sup>th</sup> grade. Of the college preparation activities, only taking college entrance exams and completing the FAFSA were associated with higher enrollment rates for low-income graduates. While all of these variables were also statistically linked to higher enrollments for all surveyed graduates, many other factors that influenced 4-year enrollments for the full sample had no significant effects on 4-year enrollments for low-income graduates. Only one factor — uncertainty about borrowing money for college — was linked to lower 4-year enrollments for low-income students.

***First-generation:*** Nearly one-quarter (24%) of surveyed 2007 graduates said that they would be the first generation in their families to attend college. Of these first-generation college students, 22% enrolled initially in a 4-year institution, a rate less than half of that (51.5%) for non-first-generation students.

Major factors associated with higher 4-year enrollments for first-generation students were: graduating in the Top 10%, taking college entrance exams, earning high school math credits in 8<sup>th</sup> grade and being classified as G/T. While most effects were not uniformly larger for first-generation students, one factor is worth noting: graduating in the Top 10% increased the odds of 4-year enrollment for first-generation graduates by more than 400%, the largest effect of any variable. Smaller positive effects were observed for visiting college campuses, taking college entrance tests, and completing the FAFSA. Contrary to the results for all other groups, the type of high school curriculum completed was not significant for first-generation students. Several factors were associated with lower initial 4-year enrollments for first-generation students, including failing any 9<sup>th</sup> grade course, uncertainty about borrowing money for college, discussing academic performance with counselors, and not feeling well-prepared for college/career goals.

### **Initial Exploration of Hierarchical Linear Modeling**

Finally, one area that has only just now been studied in the Student Futures Project concerns how differences in the schools themselves may affect postsecondary enrollment. The previously mentioned logistic models included district-level dummy variables to control for base-level differences across districts. However, researchers also acknowledge a great deal of variation between schools, even within districts, on a number of variables previously cited in the literature as being linked to the future success of the students who attend those schools. These include: the demographic and socioeconomic composition of the school (Barton, 2005; Adelman, 1999 and 2006; Kain and O'Brien, 2000); teachers' years of experience (Hanushek et al, 1998); and school size (Cotton, 1996 and 2001; Raywid, 1999).

A selected number of school-level variables were collected from publicly available data and added to the research data set to examine differences between campuses and test their relevance. These variables, collected for the 2006-2007 school year, included the following: the number of students enrolled at each school; the percent of students eligible for free or reduced lunch; select racial/ethnic characteristics of the school, including the percent Black, Asian, and Hispanic; the percent of teachers comprising certain levels of experience,

including beginning teachers and teachers with more than twenty years of experience. Information on these campus-level variables is presented in Table 3.

**Table 3: Information on Campus-Level Variables**

|  | Minimum | Maximum | Median |
|--|---------|---------|--------|
| Number of Students Enrolled on Campus        | 309     | 2805    | 1976   |
| Percent of Students on Campus that are:      |         |         |        |
| Mobile                                       | 5.4%    | 79.9%   | 19.4%  |
| Black  | 0.6%    | 33.2%   | 12.2%  |
| Hispanic                                     | 2.5%    | 83.5%   | 30.7%  |
| Asian  | 5.7%    | 82.1%   | 35.7%  |
| White  | 0.0%    | 18.3%   | 2.7%   |
| Economically Disadvantaged                   | 1.8%    | 85.1%   | 46.7%  |
| Percent of Teachers on Campus who (are/have) |         |         |        |
| Beginning Teachers                           | 3.1%    | 22.8%   | 7.2%   |
| One to Five Years of Experience              | 15.0%   | 43.0%   | 28.0%  |
| Six to Ten Years of Experience               | 4.9%    | 29.7%   | 20.6%  |
| Eleven to Twenty Years of Experience         | 12.4%   | 31.1%   | 21.4%  |
| More than 20 Years of Experience             | 7.9%    | 35.9%   | 19.8%  |

Incorporating school-level indicator (“dummy”) variables into the logistic regression provides some indication of school impact on student postsecondary transitions; attendance at some schools significantly impacts student post-secondary transitions. However, this method does not give policy-makers information on what school-level aspects impact student outcomes; as can be seen from Table 3 above, the schools in this study exhibit a wide range of differences for a number of characteristics. In an effort to “unbundle” this school-level impact, researchers have begun the process of using Hierarchical linear modeling.

Hierarchical linear modeling (HLM) has become an increasingly popular tool in educational research. The theoretical point of departure for HLM is the recognition that students are nested within classes, classes are nested within schools, and schools within districts. From a statistical perspective, HLM makes it possible for the intercept term (“level effects”) and the coefficients (“marginal effects”) to vary by class, school, or district as a function of variables specific to those respective levels of analysis. In this preliminary analysis, we restrict ourselves to accounting for campus-specific effects on student outcomes by allowing the intercept term to vary by school. This is roughly analogous to the way

indicator (“dummy”) variables operate in standard regression analysis but also provides researchers information on between-campus variation. Subsequent research will extend this approach by considering how the estimated marginal effects of the explanatory variables vary by the campus-specific characteristics listed in Table 3.

Capturing campus-level effects in a random intercept term in the logit model specification shows – perhaps not surprisingly – that there is significant variation in post-secondary outcomes across schools. Initial results reveal a noticeable improvement in overall model performance compared to the standard logit model, along with few differences in the coefficient estimates between this basic HLM specification and the logit results reported above.

While the number of variables included in the model currently prohibits the multi-level examination of the slope of each coefficient, researchers will continue to explore ways in which to exploit HLM to improve our understanding of campus-specific effects on post-secondary educational outcomes.

## **Conclusions**

This report provides the first analysis of initial postsecondary enrollment and employment outcomes for 2007 Central Texas graduates. Major conclusions based on this analysis include:

- ❖ The largest, most consistent influences associated with increased odds of initial 4-year college enrollment are related to academic achievement and engaging in specific college preparation activities.
- ❖ Low family income is an important and substantial inhibiting factor for graduates seeking to pursue postsecondary education
- ❖ Uncertainty over financing appears to play an important role in students’ decisions about whether or not to enroll in college.
- ❖ Most results from this research for all surveyed graduates are logical and largely consistent with the literature; however, the strength and importance of specific variables differ for Hispanic and low-income graduates, as well as those who would be the first in their families to attend college.
- ❖ Capturing campus-level effects in a random intercept term in the logit model specification shows that there is significant variation in post-secondary outcomes across schools.

## **Plans for the Future**

The project will continue to survey each new class of seniors prior to high school graduation and prepare annual reports on each graduating cohort of Central Texas graduates through the addition of more longitudinal postsecondary education and enrollment data. Beginning with graduates from the Class of 2008, outcomes will be reported for ten ISDs. The next phase of multivariate analysis will incorporate data that can measure differences across schools, college access programs and districts, and will use a variety of more sophisticated statistical models — e.g., multinomial logit/probit — to test the robustness of the findings presented in this report.

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**Appendix Table A-1: Variables and Data Sources Used in this Report**

| Conceptual Model Category  | Variable  | Source                                |                |
|--|---|---------------------------------------|----------------|
|  |   | School Records/<br>UI Wage<br>Records | Senior Surveys |
| <b>Family Background</b>   | Student would be first generation to go to college                    |                                       | x              |
|  | Mother or father completed at least a bachelor's degree               |                                       | x              |
|  | Low-income  | x                                     |                |
|  | Home language is Spanish  | x                                     |                |
| <b>Student Characteristics</b>   | Asian   | x                                     |                |
|  | Black   | x                                     |                |
|  | Hispanic  | x                                     |                |
|  | White*  | x                                     |                |
|  | Other   | x                                     |                |
|  | Male  | x                                     |                |
|  | Classified as Special Education                                       | x                                     |                |
|  | Classified as G/T   | x                                     |                |
|  | Thought about college for as long as could remember*                  |                                       | x              |
|  | First thought about college as an option when a child                 |                                       | x              |
|  | First thought about college as an option in middle/junior high school |                                       | x              |
| First thought about college as an option in high school                          |   | x                                     |                |
| Never thought about college as an option   |   | x                                     |                |
| <b>Community &amp; Neighborhood Effects; High School Settings &amp; Programs</b> | School district dummy variables                                       | x                                     |                |
| <b>Pre-High School Experiences</b>   | Received high school foreign language credit in 8 <sup>th</sup> grade | x                                     |                |
|  | Received high school math credit in 8 <sup>th</sup> grade             | x                                     |                |
| <b>Individual High School Experiences: Coursework</b>                            | Failed any 9th grade course   | x                                     |                |
|  | Received dual credit for college course while in HS                   | x                                     |                |
|  | Took up to one CTE course*  | x                                     |                |
|  | Took a sequence of CTE courses  | x                                     |                |
|  | Took Tech Prep courses  | x                                     |                |
|  | Graduated in Top 10%  | x                                     |                |
|  | Graduated under DAP or RHSP   | x                                     |                |
| <b>Individual High School Experiences: Extracurricular Activities</b>            | High school extracurricular activity:                                 |                                       |                |
|  | Music   |                                       | x              |
|  | Theater/Drama   |                                       | x              |
|  | Dance   |                                       | x              |
|  | Sports  |                                       | x              |
|  | Journalism  |                                       | x              |
| Speech/Debate  |   | x                                     |                |

\* Indicates variable excluded in the regression analysis. The remaining variables of a similar type should be interpreted in reference to the excluded variable.

**Appendix Table A-1. (continued) Variables and Data Sources Used in this Report**

| Category  | Variable   | Source                                |                |
|---|--|---------------------------------------|----------------|
|   |  | School Records/<br>UI Wage<br>Records | Senior Surveys |
| <b>Individual High School Experiences:<br/>Extracurricular Activities</b>     | High school extracurricular activity:  |                                       |                |
|   | Music  |                                       | X              |
|   | Theater/Drama  |                                       | X              |
|   | Dance  |                                       | X              |
|   | Sports   |                                       | X              |
|   | Journalism   |                                       | X              |
|   | Speech/Debate  |                                       | X              |
| <b>Individual High School Experiences:<br/>Extracurricular Activities</b>     | Non-school extracurricular activity:   |                                       |                |
|   | Sports   |                                       | X              |
|   | Arts/Music   |                                       | X              |
|   | Community service  |                                       | X              |
|   | Environmental projects   |                                       | X              |
|   | Faith-based or charitable organizations  |                                       | X              |
|   | Provided routine care to another family member   |                                       | X              |
|   | Typical number of hours spent studying in high school:   |                                       |                |
|   | 0-5 hours per week*  |                                       | X              |
|   | 6-15 hours per week  |                                       | X              |
|   | 16+ hours per week   |                                       | X              |
|   | Typical number of hours spent working in senior year:  |                                       |                |
|   | 0-5 hours per week*  |                                       | X              |
|   | 6-15 hours per week  |                                       | X              |
| 16 + hours per week   |  | X                                     |                |
| Earned more than \$2,000 during senior year                                   | X  |                                       |                |
| <b>Individual High School Experiences:<br/>High School Staff Interactions</b> | Discussed personal/family issues with a counselor  |                                       | X              |
|   | Discussed scheduling/course selection and placement/graduation plans with a counselor                    |                                       | X              |
|   | Discussed grades/test scores/academic performance with a counselor                                       |                                       | X              |
|   | Discussed writing resumes/job applications/career information with a counselor                           |                                       | X              |
|   | Discussed writing college applications/essays and scholarship/financial aid information with a counselor |                                       | X              |
| <b>Individual High School Experiences:<br/>College Preparation</b>            | Visited one or more college campuses   |                                       | X              |
|   | Took the PSAT  |                                       | X              |
|   | Took college entrance tests (SAT, ACT, and/or THEA)  |                                       | X              |
|   | Completed FAFSA  |                                       | X              |
|   | Felt very well/well prepared for college / career goals  |                                       | X              |
|   | Felt somewhat well prepared for college/ career goals*   |                                       | X              |
|   | Felt not very well/not at all prepared for college/career goals  |                                       | X              |
|   | Felt very well/well prepared for college selection/application process                                   |                                       | X              |
|   | Felt somewhat well prepared for college selection/application process*                                   |                                       | X              |
|   | Felt not very well/not at all prepared for college selection/application process                         |                                       | X              |
|   | Planned on borrowing money for college*  |                                       | X              |
|   | Did not plan on borrowing money for college  |                                       | X              |
|   | Uncertain about borrowing money for college  |                                       | X              |

\* Indicates variable excluded in the regression analysis. The remaining variables of a similar type should be interpreted in reference to the excluded variable.

**Appendix Table A-2. Means and Distribution of Variables  
in Logistic Regression Model**

|   | <b>Surveyed<br/>Graduates<br/>Enrollment</b> |
|---|--|
| <b>N</b>  | 3,061  |
| Asian   | 0.05   |
| Black   | 0.10   |
| Hispanic  | 0.31   |
| White <sup>†</sup>  | 0.53   |
| Other   | 0.01   |
| Male  | 0.48   |
| Low-income  | 0.21   |
| Home language is Spanish  | 0.10   |
| Classified as Special Education                                       | 0.06   |
| Classified as G/T   | 0.15   |
| Received high school foreign language credit in 8th grade             | 0.18   |
| Received high school math credit in 8th grade                         | 0.35   |
| Failed any 9th grade course   | 0.20   |
| Received dual credit for college course while in HS                   | 0.09   |
| Took up to one CTE course <sup>†</sup>                                | 0.62   |
| Took a sequence of CTE courses  | 0.28   |
| Took Tech Prep courses  | 0.10   |
| Graduated in Top 10%  | 0.13   |
| Graduated under DAP or RHSP   | 0.90   |
| Earned more than \$2,000 during senior year                           | 0.13   |
| Student would be first-generation to go to college                    | 0.24   |
| Mother or father completed at least a bachelor's degree               | 0.54   |
| Thought about college for as long as could remember <sup>†</sup>      | 0.43   |
| First thought about college as an option when a child                 | 0.12   |
| First thought about college as an option in middle/junior high school | 0.22   |
| First thought about college as an option in high school               | 0.22   |
| Never thought about college as an option                              | 0.01   |
| Participated in high school extracurricular activity:                 |  |
| Music   | 0.31   |
| Theater/Drama   | 0.13   |
| Dance   | 0.14   |
| Sports  | 0.52   |
| Journalism  | 0.11   |
| Speech/Debate   | 0.09   |
| Participated in non-school extracurricular activity:                  |  |
| Sports  | 0.33   |
| Arts/Music  | 0.24   |
| Community service   | 0.44   |
| Environmental projects  | 0.12   |
| Faith-based or charitable organizations                               | 0.17   |
| Provided routine care to another family member                        | 0.17   |

**Table A-2. (continued) Means and Distribution of Variables in Logistic Regression Models**

|   | <b>Surveyed<br/>Graduates<br/>Enrollment</b> |
|---|--|
| <b>N</b>  | 3,061  |
| Typical number of hours spent studying in high school:  |  |
| 0-5 hours per week <sup>†</sup>   | 0.57   |
| 6-10 hours per week   | 0.27   |
| 11-15 hours per week  | 0.10   |
| 16+ hours per week  | 0.05   |
| Typical number of hours spent working in senior year:   |  |
| 0-5 hours per week <sup>†</sup>   | 0.42   |
| 6-10 hours per week   | 0.10   |
| 11-15 hours per week  | 0.13   |
| 16 + hours per week   | 0.35   |
| Discussed personal/family issues with a counselor   | 0.16   |
| Discussed scheduling/course selection and placement/<br>graduation plans with a counselor                   | 0.91   |
| Discussed grades/test scores/academic performance with a<br>counselor                                       | 0.25   |
| Discussed writing resumes/job applications/career information<br>with a counselor                           | 0.19   |
| Discussed writing college applications/essays and<br>scholarship/financial aid information with a counselor | 0.55   |
| Visited one or more college campuses  | 0.57   |
| Took the PSAT   | 0.71   |
| Took college entrance tests (SAT, ACT, and/or THEA)   | 0.78   |
| Completed FAFSA   | 0.52   |
| Felt very well/well prepared for college/career goals   | 0.48   |
| Felt somewhat well prepared for college/career goals+   | 0.41   |
| Felt not very well/not at all prepared for college/career goals   | 0.11   |
| Felt very well/well prepared for college selection/application<br>process                                   | 0.42   |
| Felt somewhat well prepared for college selection/application<br>process <sup>†</sup>                       | 0.43   |
| Felt not very well/not at all prepared for college selection/<br>application process                        | 0.15   |
| Planned on borrowing money for college <sup>†</sup>   | 0.42   |
| Did not plan on borrowing money for college   | 0.26   |
| Uncertain about borrowing money for college   | 0.32   |

**Table A-3. Logistic Regression Results of Factors Associated with Enrollment in 4-Year Postsecondary Institutions**

|   | <b>All Surveyed Graduates</b> | <b>Hispanic</b> | <b>Low Income</b> | <b>First Generation</b> |
|---|-------------------------------|-----------------|-------------------|-------------------------|
| <b>Constant</b>   | 0.04**                        | 0.01**          | 0.00**            | 0.04**                  |
| <b>Percent of Model Predictions Correctly Classified</b>              | 80.56%                        | 75.29%          | 85.27%            | 86.46%                  |
| <b>N</b>  | 3,061                         | 939             | 645               | 746                     |
| Asian   | 1.27                          |                 | 2.96              | 0.73                    |
| Black   | 1.02                          |                 | 2.47              | 0.64                    |
| Hispanic  | 0.69**                        |                 | 1.25              | 0.50                    |
| Other   | 0.44                          |                 | 1.80              | 0.09                    |
| Male  | 1.18                          | 2.12**          | 1.30              | 1.18                    |
| Low-income  | 0.71*                         | 0.83            |                   | 1.11                    |
| Home language is Spanish  | 0.92                          | 0.81            | 1.17              | 0.90                    |
| Classified as Special Education                                       | 0.61                          | 0.48            | 0.73              | 0.45                    |
| Classified as G/T   | 1.57**                        | 1.95            | 2.49*             | 2.69*                   |
| Received high school foreign language credit in 8th grade             | 1.02                          | 0.84            | 0.35              | 1.44                    |
| Received high school math credit in 8th grade                         | 1.83**                        | 2.18**          | 1.96*             | 2.75**                  |
| Failed any 9th grade course   | 0.57**                        | 0.28**          | 0.70              | 0.31**                  |
| Received dual credit for college course while in HS                   | 1.27                          | 1.53            | 1.48              | 1.18                    |
| Took a sequence of CTE courses  | 0.69**                        | 0.59*           | 0.54              | 0.57                    |
| Took Tech Prep courses  | 0.65*                         | 0.45*           | 0.52              | 0.52                    |
| Graduated in Top 10%  | 2.58**                        | 2.86*           | 4.20*             | 5.54**                  |
| Graduated under DAP or RHSP   | 4.45**                        | 7.62**          | 5.30**            | 2.86                    |
| Earned more than \$2,000 during senior year                           | 0.62**                        | 0.40**          | 0.73              | 0.50                    |
| Student would be first-generation to go to college                    | 0.91                          | 0.94            | 1.26              |                         |
| Mother or father completed at least a bachelor's degree               | 1.47**                        | 1.44            | 1.63              |                         |
| First thought about college as an option when a child                 | 0.93                          | 0.61            | 0.84              | 0.76                    |
| First thought about college as an option in middle/junior high school | 0.84                          | 0.89            | 0.94              | 1.01                    |
| First thought about college as an option in high school               | 0.74*                         | 0.50*           | 0.67              | 0.63                    |
| Never thought about college as an option                              | 1.51                          | 1.66            | 2.48              | 2.02                    |
| Participated in high school extracurricular activity:                 |                               |                 |                   |                         |
| Music   | 1.37**                        | 1.19            | 1.80*             | 0.90                    |
| Theater/Drama   | 1.07                          | 0.88            | 0.77              | 0.71                    |
| Dance   | 0.84                          | 1.52            | 0.56              | 0.57                    |
| Sports  | 1.51**                        | 1.44            | 1.00              | 1.36                    |
| Journalism  | 0.91                          | 1.35            | 0.87              | 0.77                    |
| Speech/Debate   | 1.09                          | 0.72            | 1.32              | 1.44                    |
| Participated in non-school extracurricular activity:                  |                               |                 |                   |                         |
| Sports  | 1.31*                         | 1.10            | 2.02*             | 1.22                    |
| Arts/Music  | 0.91                          | 1.16            | 1.00              | 1.63                    |
| Community service   | 1.18                          | 1.18            | 1.46              | 1.35                    |
| Environmental projects  | 1.08                          | 1.64            | 1.20              | 2.23                    |
| Faith-based or charitable organizations                               | 0.89                          | 0.81            | 1.17              | 0.85                    |
| Provided routine care to another family member                        | 0.93                          | 0.90            | 1.60              | 1.29                    |

**Table A-3. (continued) Model 2 Logistic Regression Results of Factors Associated with 4-Year Postsecondary Enrollment**

|  | All Surveyed Graduates | Hispanic | Low Income | First Generation |
|--|------------------------|----------|------------|------------------|
| <b>Constant</b>  | 0.04**                 | 0.01**   | 0.00**     | 0.04**           |
| <b>Percent of Model Predictions Correctly Classified</b>   | 80.56%                 | 75.29%   | 85.27%     | 86.46%           |
| <b>N</b>   | 3,061                  | 939      | 645        | 746.             |
| Typical number of hours spent studying in high school:   |                        |          |            |                  |
| 6-10 hours per week  | 0.96                   | 1.08     | 0.77       | 0.67             |
| 11-15 hours per week   | 1.05                   | 1.95     | 0.56       | 0.87             |
| 16+ hours per week   | 1.05                   | 1.11     | 0.61       | 0.47             |
| Typical number of hours spent working in senior year:  |                        |          |            |                  |
| 6-10 hours per week  | 0.98                   | 1.00     | 1.21       | 0.66             |
| 11-15 hours per week   | 0.89                   | 0.83     | 2.40       | 1.46             |
| 16 + hours per week  | 0.75*                  | 0.70     | 1.30       | 0.78             |
| Discussed personal/family issues with a counselor  | 0.68**                 | 0.53*    | 0.53       | 0.71             |
| Discussed scheduling/course selection and placement/ graduation plans with a counselor                   | 0.73                   | 0.80     | 1.19       | 0.80             |
| Discussed grades /test scores /academic performance with a counselor                                     | 0.78                   | 0.62     | 0.57       | 0.30**           |
| Discussed writing resumes/job applications/career information with a counselor                           | 0.77*                  | 0.94     | 0.77       | 0.86             |
| Discussed writing college applications/essays and scholarship/financial aid information with a counselor | 1.18                   | 1.11     | 1.22       | 0.95             |
| Visited one or more college campuses   | 1.51**                 | 1.29     | 1.48       | 1.76*            |
| Took the PSAT  | 1.30*                  | 1.32     | 1.47       | 1.03             |
| Took college entrance tests (SAT, ACT, and/or THEA)  | 3.25**                 | 2.85**   | 3.06**     | 4.31**           |
| Completed FAFSA  | 2.16**                 | 4.49**   | 3.35**     | 3.53**           |
| Felt very well/well prepared for college/career goals  | 1.30*                  | 2.04*    | 1.10       | 1.97             |
| Felt not very well/not at all prepared for college/career goals  | 0.54**                 | 0.64     | 0.58       | 0.31*            |
| Felt very well/well prepared for college selection/ application process                                  | 1.19                   | 1.12     | 1.17       | 1.19             |
| Felt not very well/not at all prepared for college selection/application process                         | 1.18                   | 1.10     | 0.81       | 2.35             |
| Did not plan on borrowing money for college  | 0.97                   | 0.50*    | 0.72       | 0.88             |
| Uncertain about borrowing money for college  | 0.65**                 | 0.39**   | 0.44**     | 0.48*            |
| District One   | 0.67                   | 1.224    | 2.1        | 1.167            |
| District Two   | 0.72                   | 0.815    | 1.267      | 1.399            |
| District Three   | 0.50**                 | 0.331*   | 0.551      | 0.317            |
| District Four  | 0.60**                 | 1.028    | 2.281      | 1.165            |
| District Five  | 1.05                   | 1.035    | 1.837      | 0.562            |
| District Seven   | 1.73*                  | 2.596    |            | 3.849            |

Notes: 1) Statistical significance: \*p<=.05, \*\*p<=.01

2) Shaded cells indicate that the variable was dropped from the analysis.