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Post-Secondary Outcomes of Newark Public School Graduates (2004-2011)

College Matriculation, Persistence & Graduation

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1 Executive Summary

The Newark Public Schools is the largest school system in New Jersey, serving roughly 40,000 students from mostly low-income black and Latino backgrounds. Like other urban school districts with similar demographic characteristics, NPS is endeavoring in the face of great social and economic obstacles to prepare all of its students with the skills needed for college and future careers. According to the NPS school website, in 2010 only about 40 percent of NPS high school students were deemed "proficient" in mathematics and reading, and just 55 percent graduated from high school (NPS, 2012). One goal of NPS in the coming years is to increase the number of high school graduates who are prepared to enter college and earn a degree. Incorporated in this vision are the three goals of "Excellence, Efficiency, and Equity," which basically equates to giving every student an equal chance to succeed in school and access to an efficient, high quality education (NPS, 2012).

This report examines in great detail the post-secondary (after high school) academic experiences of NPS high school graduates from 2004 through 2011. The analyses show large numbers of NPS graduates go onto college, and some succeed in earning college degrees; a few go onto graduate education. On the other hand, too few students go onto college and far too few earn a college degree. We hope that the results presented here can lead to the discussions needed to develop an educational system in Newark that is indeed marked by "Excellence, Efficiency, and Equity."

1.1 Who Was Studied and How?

This study reports on all NPS students who graduated from high school between June of 2004 and June of 2011 (n=17,503). In the spring of 2012, a list of these graduates was submitted by the Newark Public Schools to the National Student Clearinghouse (NSC). The NSC then matched these individuals with students who had enrolled at institutions of higher education throughout the U.S. for the period June 2004 through April 2012. The NSC collects basic enrollment and degree information on students who attend participating United States post-secondary institutions (NSC website; http://www.studentclearinghouse.org). The NSC states that it covers 96% of post-secondary students in the United States. As of April 2012, the month of study initiation, the NSC had 2,965 institutional "partners," with 52 in New Jersey. As a result, this study follows NPS high school graduates for up to 8 years, which allows us to provide a detailed picture of NPS graduates going to college and earning college degrees.

1.2 Findings: Enrolling in a College or University

- *Enrollment in College*: More than half of 2004-2011 NPS graduates enrolled in a college or university. The data suggest that college enrollment rates peak at about 60% of NPS graduates as students are followed over time. There is some indication that more recent NPS graduates are attending college at greater rates than in the past. Additionally, the reader should note that the NPS district adjusted cohort graduation rate for 2011 was 61%. Therefore, the proportion of incoming high school freshmen who will likely go on to college

is approximately 36%. In 2012, 41% of 18- to 24-year-olds in United States were enrolled in college (National Center for Education Statistics, 2014).

- *Where Do They Attend College?* The great majority of matriculating students (88.1%) attended college in New Jersey. Among 2-year schools, half of students attended Essex County College (ECC). Students who attended 4-year colleges and universities were more widely distributed among schools. Nevertheless, the most commonly attended colleges were located in northern New Jersey in relatively close proximity to Newark.
- *Time of First Matriculation*: Combining all graduation cohorts, the greatest number of first time college enrollment occurred in the fall term after graduation, when 39% of high school graduates enrolled in college (or about 2/3 of those students who do go to college). Nevertheless, nearly a quarter of graduates matriculate more than a year after graduating. As time increases since high school graduation, fewer and fewer graduates enroll in college. However, there are some students who first enroll in college several years after high school graduation.
- *2-Year versus 4-Year Colleges*: When followed over time, nearly 70% of NPS graduates who attended college went to a 2-year college (most of them to Essex Community College). Just over half of NPS graduates who attended a college or university went on to attend a 4-year college.
- *Magnet and Comprehensive High Schools*: Graduates of magnet high schools were much more likely to attend college than graduates of comprehensive high schools. The analyses show magnet high school graduates were 60-70% more likely to attend college than graduates of the comprehensive high schools. In 2004, 85% of magnet school graduates ultimately attended college vs. 50.3% of comprehensive school graduates. Magnet graduates were more than twice as likely as graduates of comprehensive high schools to attend a 4-year college. When comprehensive graduates went to college, they were much likely to attend a 2-year college. Nevertheless, about a quarter of comprehensive high school graduates went on to a 4-year college.
- *Gender/Race/Ethnicity*: Black female students were most likely to attend college. In comparison to these young women, Hispanic and white females somewhat were less likely to attend college (20% and 14% less likely). [In Newark, the white category contains a large proportion of students from Portuguese and Brazilian immigrant families.] Black males were 25% less likely to attend college than black females, and Hispanic and white males were even less likely to attend college (~35% less likely). Hispanic females were more the most likely group to attend a 2-year college. Hispanic males were especially less likely to attend a 4-year college (half as likely as black females).
- *Economic Disadvantage*: Our analyses show economic disadvantage (measured by eligibility for free or reduced lunch) was unrelated to attending college. We regard this as due to the crudeness of the measure, which groups together households with a very wide range of incomes. Additionally, essentially all children in NPS are low income by some measure.

- *Special Education*: Special education students were half as likely to attend college as regular students, and were 77% less likely to attend a 4-year college.
- *Scores on the HSPA Exam*: As might be expected, the data show academic performance, as measured by the New Jersey High School Performance Assessment (HSPA) exam, is a powerful predictor of attending college. Students who passed both parts of the HSPA examination were more than twice as likely to attend college as those who were unable to pass either part. Passing just one part of the HSPA examination resulted in a significant increase in the likelihood of attending college (a third more likely). And, students who passed the HSPA were nearly 5.2 times as likely to attend a 4-year college as those who were unable to pass either part of the HSPA. Performance in mathematics was a somewhat more powerful predictor of attending college than performance in language arts.

1.3 Findings: Earning a Post-Secondary Degree

- *Earning a College Degree*: 25% of those 2004 NPS graduates who matriculated in college earned a college degree. [We focus on this cohort because they had 8 years during which to earn a degree]. One in 5 matriculating students earned a bachelor's degree and less than 1 in 10 matriculating students earned an associate's degree. Also, the reader will recall that the NPS district adjusted cohort graduation rate for 2011 was 61%. Therefore, the percent of incoming high school freshmen who went on to earn a college degree was likely around 15%.
- *Where Do Students Earn Degrees*? ECC conferred more than 3 out of 4 associate degrees. Rutgers University's Newark and New Brunswick campuses were the principal sources of bachelor's degrees, providing nearly 3 in 10 degrees. Montclair State and Kean Universities provided another 2 of 10 bachelor's degrees. Half of bachelor's degrees were conferred by Rutgers University, Montclair State University, and Kean University combined.
- *Type of High School*: Graduates of the magnet high schools earned college degrees at 4.4 times the rate of the comprehensive high school graduates. Graduating from a magnet high school had a powerful effect on earning a 4-year degree: magnet graduates earned bachelor's degrees at a rate almost 6 times that of students from comprehensive high schools. Magnet high school graduates were also almost 50% more likely to earn an associate degree.
- *Gender/Race/Ethnicity*: Once enrolled in college, white females were the most successful in persisting and earning a college degree (nearly 2.5 times as likely as black females). White males were 50% more likely to earn a college degree than black females. Hispanic and black females were equally likely to earn a college degree, and black and Hispanic males were 32% less likely to persist and earn a college degree.
- *Economic disadvantage:* Our analyses showed no relationship of "economic disadvantage" to earning a college degree. We regard this as a reflection of the severe limitations of the "economic disadvantage" measure (eligibility for free or reduced lunch).
- *Special education:* Special education were much less likely to earn a 4-year college degree than regular students.

- *Scores on the HSPA Exam*: Performance on the HSPA was an even stronger predictor of attaining a college degree than of attending college. A student who passed both portions of the HSPA examination was 5.2 times more likely to earn a college degree (associate's or bachelor's) than a student who was unable to pass both parts of the HSPA examination. And, a student who graduated via HSPA was 8.1 times as likely to earn a 4-year degree as a student who was unable to pass both parts of the HSPA examination. Mathematics and language arts performance were equally strong in predicting who earned a college degree.

1.4 Recommendations

Given the results that are presented in this report, we have the following recommendations:

- *Take steps to improve academic performance*. This is a rather obvious and commonplace recommendation. However, the data analyses show that by far the strongest predictor of going to college and earning degree is performance on the HSPA exam. The higher the HSPA scores, the more likely students are to enroll in college and to earn a degree. Students who were unable to pass the HSPA exam were very unlikely to earn a college degree.
- *Provide pathways to good jobs that do not require a college degree.* Our analyses show the likelihood of earning a college degree is very low for students who cannot pass the HSPA exam. Not all NPS graduates want to attend college, or are prepared to do so. NPS needs to create pathways to well-paying jobs with futures in the evolving global economy. The district might investigate creating partnerships with locally based companies like United Airlines, based in Newark Airport, or PSE&G, Verizon, Comcast, etc. to provide student training programs leading to good-paying jobs that do not require a college degree, but do require technical skill.
- *Create a "college going culture" at every high school,* particularly at the comprehensive high schools. This recommendation has an "upside" and a "downside." Our analyses show students who attended a magnet high school were 62% more likely to attend a 4-year college—even when mathematics and language arts HSPA scores were equivalent to those of comprehensive high school graduates. The results suggest that magnet students are more college oriented, or that they may have greater knowledge about the college process. On the downside, although a "college going culture" is important, the reality is that many NPS students are not ready for college and that encouraging lower performing students to attend college may create false hopes that can be painful and expensive. Our analyses show students who were unable to pass both parts of the HSPA exam were exceedingly unlikely to earn a college degree. Therefore, pathways to good jobs must be created as recommended above. However, no student should be discouraged from attending college; even some college is economically and educationally beneficial.
- *Make clear to NPS students that going to college is hard work and challenging.* Our analyses show earning a college degree is an uncommon event for low performing students from the comprehensive high schools. NPS graduates must not have a rosy view of their academic capabilities, but instead must realize that college will be challenging and will require hard

work and perseverance, and that they must work hard in high school to prepare for college. Although we support Attewell and Lavin's (2008) belief in "College for All", consistent with Rosenbaum's cautions (2001; 2011), NPS should avoid promoting a "College for All" philosophy unless it is clear to students that they must work hard in high school to have the skills to attain a college degree.

- *Educate NPS guidance counselors* and other school administrators and staff about the low college degree completion rates, the financial challenges that this pathway may produce, and the length of time that it often takes to earn a degree for students enrolling in 2-year institutions.
- *Foster the development of "soft" skills* that may enable NPS graduates to persist in college and earn a degree. The analyses presented here show students who attended magnet high schools were 41% more likely to earn a college degree even after adjustment for mathematics and language arts HSPA scores. This suggests that "soft skills" (such as study skills, "grit" and academic self-concept, etc.) may have been gained at the magnet high schools and have increased the likelihood of earning a degree.
- *Encourage students to attend a 4-year college if possible.* Not all students are prepared to attend a 4-year college. Essex Community College and other 2-year colleges play a very important role in providing affordable, high quality, and locally-based education. However, when NPS graduates are capable of attending a 4-year college, then they should do so as their likelihood of earning a degree is much greater than at 2-year colleges.
- *Support students who are college capable, but who are at risk of not attending college.*
    - white students: The analyses show Newark's white females and males were much less likely to attend college than others of equivalent mathematics and language arts performance. Although these mostly immigrant children may have other economic opportunities via family businesses and other social connections, in the long term most these students would greatly benefit from a college education. Also, many immigrant students (and their families) have concerns about their immigration status and the potential negative fallout that may occur from enrollment in college. Programs are needed ensure that these NPS graduates go to college.
    - Hispanic students: Hispanic students were much less likely to attend a 4-year college than black females, even when equally college capable. Instead, Hispanic students were more likely to attend 2-year colleges, where students are less likely to earn a degree. Talented Hispanic students need to be made aware of the 4-year college opportunities that are open to them. Again, concerns about immigration status are an issue for some families.
    - black students: In Newark, black students are the most likely to attend college. While black males are less likely to attend college than black females, but they do attend college at higher rates than either Hispanic males or white males. Unfortunately, black males were a third less likely to earn a college degree as black females. As recommended below, programs must be developed to provide male students with the tools needed to remain in college and earn a college degree.

  - male students: male students of all ethnic backgrounds were less likely to attend college than female students. Programs must be developed to promote college enrollment among college capable young men.

- *Develop a tracking system to assess and monitor college readiness throughout high school.* Students should be followed throughout high school, and rigorous college prep coursework and enrollment in 4-year colleges should promoted among those who are college capable.
- *Identify 2-year and 4- year post-secondary school options* where NPS graduates are successful, that are reasonably affordable, and that can meet the needs of first generation college-students, and economically disadvantaged, black and Latino, and male students.
- *Provide intensive and sustained college guidance and support for all NPS high school students* , but particularly for comprehensive high school students, on appropriate post-secondary options, the college application process, financial aid options and procedures, and other potential obstacles to college enrollment and retention. Students need to be thinking about and preparing for school during their freshman year.
- *Offer "college knowledge" workshops* for NPS students (and their parents) who are interested in applying to college (Roderick et al., 2009). At the workshops, counselors and staff can teach students and their parents about college selection, the college application process, and deadlines for financial aid, etc. In particular, students and parents need to learn about the economics of 4-year colleges, including of those schools that are relatively inexpensive and those that provide larger and more generous financial aid packages. Given the large and growing population of Spanish speakers in Newark, Spanish language college information programs should be offered to parents. Transportation and food should be provided and targeted advertising should take place in Spanish and Portuguese owned businesses and Spanish and Portuguese language churches.
- *Provide after school programs and activities at every high school* so that students can safely study and socialize after school hours. A study by Harper et al. (2014) found that urban school students who were successful in school had a safe place to go after school where they could study and spend time with their friends.
- *Investigate the establishment of a supplemental, non-profit organization* through a public-private partnership that aims at increasing the number of students applying to and attending college through a multidimensional approach. This organization might be modeled on Yonkers Partners in Education in Yonkers, NY (see Kronen 2014).
- *Establish a college-going orientation before high school.* Traditionally students do not start thinking about or planning for college until the 10^{th} or 11^{th} grade. Research indicates that all students, but especially low income students, need access to information about college well before they start high school- preferably by the 8^{th} grade or earlier (Levine & Nidiffer, 1996). A program that targets middle school students, meeting with them during the regular school day and talking about college, careers, etc. would help students start to think about college sooner.
- *Advocate for limits on the number of remedial courses* that are required by colleges before students are permitted to take credit-bearing courses. Students who fail to meet minimal requirements

on academic examinations can become "stuck" in remedial courses for several years before being allowed to take credit-bearing courses. Connecticut and Florida have passed legislation to limit the number of remedial courses that students can be required to take and the State University of New York has announced plans to phase out remedial courses over the next ten years. Instead, programs are being established to meet students' needs while taking credit-bearing courses. A similar program in New Jersey might help students persist and graduate at higher rates.

- *Strengthen existing collaborations and develop new ones with local higher education institutions* (Essex County College, New Jersey Institute of Technology, Rutgers University-Newark and Rutgers Biomedical and Heath Sciences) to promote college readiness and more effective transitions to college.

2 Introduction

For an increasing number of high school graduates, attending college and completing a post-secondary degree has become a commonplace prerequisite for their future career goals. About two-thirds of jobs require some type of post-secondary training, certificate, or degree (Kanter et al., 2011). In fact, 15 of the 30 fastest growing jobs in the United States require students to obtain at least a Bachelor's degree (Kanter et al., 2011). Because of this trend, many more high school students across the country are matriculating into college, but only 40 percent are actually completing degrees (Kanter et al., 2011). This prompted President Obama to enact the "2020 College Completion Goal" to increase the percentage of students who earn an associate or bachelor's degree to 60 percent or 10 million more students by the year 2020 (Kanter et al., 2011). In a 2009 speech to Congress, President Obama declared, "By 2020, America will once again have the highest proportion of college graduates in the world…So tonight I ask every American to commit to at least one year or more of higher education or career training…every American will need to get more than a high school diploma." The message is clear that if the U.S. wants to compete in the global marketplace, more Americans need to complete post-secondary degrees.

While President Obama's college completion goal is laudable, many students are still faced with significant obstacles to becoming college ready, enrolling in a post-secondary institution, and completing an associate or bachelor's degree. Research indicates that gender, race/ethnicity, socioeconomic background, type of college first attended (e.g. 2-year versus 4-year programs), and in our study, high school type are associated with students' earning college degrees. According to the National Center for Education Statistics (2013), while college enrollment figures have increased steadily for all racial/ethnic groups, significant gaps are still present between white students and black and Hispanic students when it comes to college readiness, access, persistence, and attainment of a college degree. As Nagaoka et al. (2008) asserts, "the primary issue in college access is no longer building college aspirations, but building a clear path for students to achieve their goals" (p. 1). Prior to this report, little detailed information has existed on the post-secondary pathways of NPS high school graduates.

The purpose of this report is to describe the rates at which NPS high school graduates enroll in college, the colleges that they most commonly attended, college retention rates, and degree attainment. This report breaks this information down by graduation cohort and specialized high school. It also examines differences in matriculation rates and college progression by gender, race/ethnicity, socio-economic status (e.g. eligibility for free or reduced-price lunch), and enrollment in special education. It concludes by offering policy recommendations that will hopefully help NPS stakeholders, policy officials, and district administrators in tracking and measuring college readiness, increasing the number of students who enroll in 4-year colleges, and preparing students to be successful college students who persist in school and earn a degree.

2.1 Literature Review

2.1.1 Benefits of College: Education, Employment, and Health

The benefits of a well-educated society are great: workers earn higher incomes, pay more taxes, engage in healthy living practices, and are less likely to commit crimes. In fact, research has shown that individuals with higher levels of education not only have higher incomes, but also have improved health outcomes and lower infant mortality rates (Belfield and Levin, 2007; College Board, 2010). Conversely, people with lower incomes tend to have worse health outcomes, due in part to reduced access to quality health care, but largely due to living in less healthy social, economic and physical environments.

Additionally, a clear and consistent relationship exists between educational attainment and income rates (NCES, 2013). Research demonstrates that greater educational attainment correlates with lower unemployment rates and higher income. In 2013, individuals lacking a high school diploma had a 11.0% unemployment rate and a median weekly income of $472, while those with a high school degree but no college had a 7.5% unemployment rate and a median weekly income of $651 per week (Bureau of Labor Statistics, 2014). Among those who attended college, those who had some college but no degree had an unemployment rate of 7.0% and a median income of $727 per week, those with an associate degree had a 5.4% unemployment rate and a median weekly income of $777, and those with a bachelor's degree had an unemployment rate of 4.0% and a median weekly income of $1,108 (Bureau of Labor Statistics, 2013).

Bureau of Labor Statistics data also indicate that those who have graduate degrees tend to have even lower unemployment rates and higher weekly incomes than all other educational attainment groups: those who had a master's degree made on average $1,300 per week and had a 3.5% unemployment rate and those with a professional degree or doctoral degree had an average weekly income of $1,735 and $1,624 weekly with unemployment rates all lower than three percent (Bureau of Labor Statistics, 2013).

In other words, research shows substantial economic benefits come with greater education, even for those who attend college, but fail to earn a degree.

2.1.2 How Many High School Graduates Go to College and Earn Degrees in the United States?

Recent data from the United States Census Bureau show 70% of 2009 high school graduates enrolled in college within 12 months of graduation (U.S. Census Bureau, 2012). Black and white students enrolled in college at comparable levels (71% and 70%), but Hispanics enrolled at lower rates (59%). Data from Philadelphia, Boston, and Baltimore provide information on a somewhat comparable cities. In Philadelphia, analyses of the 2008 and 2010 cohorts show 56% of high school graduates enrolled in college (36% in 4-year schools and 20% in 2-year schools)(Center for Education Policy Research, 2013). In Boston, two year college enrollment rates were 58% for the 2003 cohort, and 75% after six years (Sum et al, 2013). In recent years, Boston college enrollments have increased substantially: the first year enrollment rates 2010 was 70%. In Baltimore, college

enrollment rates for the 2007 through 2012 cohorts have hovered around 48% (Durham and Olson, 2013). In Chicago, 56% of the 2012 high school graduates enrolled in college (Chicago Public Schools, 2014).

In the United States, National Clearinghouse data on the 2007 U.S. high school graduation cohort shows 58% of students nationwide earned a college degree or certificate within 6 years of enrollment (Shapiro and Dundar, 2013). Less than a third (30%) of students enrolling at a public 2-year college earned a degree, and 60% of those who attended a public 4-year college earned a college degree. Additional detail is available on the 2001 high school graduation cohort (National Center for Educational Statistics, 2011). The six year degree rate for full time 4-year students was 54% for males and 60% for females. Minority students were less likely to earn a 4-year college degree than whites: 35% of black males, 44% of Hispanic males, 46% of black females, and 52% of Hispanic females. In the case of 2-year schools, just 26% of males and 30% of females earned a certificate or associate degree "within 150% of normal time" (National Center for Educational Statistics, 2011). As with 4-year degrees, minority students were less likely to earn a 2-year degree: 19% of black males, 23% of Hispanic males, 25% of black females, and 51% of Hispanic females. In Baltimore, the six year college completion rates for the 2004 through 2006 high school graduation cohorts were about 30% (Durham and Olson, 2013). For those students who attended a 2-year college, the degree attainment rate was 11%. Among those who attended 4-year colleges, 40% earned a degree within six years. In Boston, the six year college degree rate was 47% for the 2005 high school graduation cohort (Sum et al, 2013).

2.1.3 Going to College: Barriers and Facilitators

Although greater numbers of students are enrolling in college, college enrollment remains inaccessible to many students; and, for those who do attend college, completing a college degree can be a challenge due to inadequate high school preparation, unequal knowledge about the college application and/or financial aid process, and the rising costs of college tuition (see Nagaoka et al., 2008). Research indicates that more than half of all community college students fail to earn a degree or certificate within eight years and "many non-flagship, public, four year institutions have six-year graduation rates well below 50 percent" (Belfield and Levin, 2007, p. 81).

An important distinction when analyzing college completion data is the difference between persistence and retention. Retention focuses more on moving from one year, or semester, to the next while persistence focuses on "achieve[ing] the end goal, usually a certificate or degree" (Swail, 2012, p.419). According to Astin and Oseguera, there are a number of factors that correlate with a students' ability to complete a higher education degree that include "[pre-college] school grades, gender, race/ethnicity, parental income and education, standardized test scores, and age" (in Seidman, 2012, p. 120). Specifically, research demonstrates that personal finances contribute greatly to a student's ability to stay in school (Astin and Oseguera in Seidman, 2012, p. 122). Additionally, high school grades, parents' educational levels, parents living together, parent income, gender (female), and religion (Roman Catholic), are associated with college completion (Astin and Oseguera in Seidman, 2012, p. 130).

Research shows student outcomes in college are influenced by a range of factors that affect a student both before and during college (Cabrera et al in Seidman, 2012, p. 175). Research indicates that gender, race/ethnicity, socioeconomic status, and type of college first attended are associated with student's experience in and ability to complete a college degree. Other researchers have shown that the college selection process (Bowen et al., 2009), whether students delay college after high school (Bozick et al., 2004), and type of college first attended (Durham and Olson, 2013; Long and Kurlaender, 2009) are all factors that are closely related to the likelihood that a student will complete a degree.

2.1.4 Race/Ethnicity and SES

Historically, college enrollment rates have varied among racial/ethnic groups. As compared to white students, black and Latino students are generally less likely to attend college, and if they do enroll in college, they are less likely to earn a college degree. Analyses by the Bureau of Labor Statistics found 66.2% of 2012 high school graduates were enrolled in college in October 2012. The highest rates of college enrollment occurred among Asian students (82.2%) and the lowest occurred among Black students (58.2%). For the first time, college enrollment rates among Hispanics (70.3%) surpassed those of Hispanics (70.3%)(Bureau of Labor Statistics, 2013; Fry and Taylor, 2013). The disparity between racial/ethnic groups is even more evident when looking at those who complete a bachelor's degree in five years: research indicates that 34.7% of blacks and 58.0% of whites, and 44.7% of Hispanics graduate in five years (NCES, 2013). Additionally, while college enrollment levels have increased for all racial/ethnic groups between 1990-2012, the percent of black and Latino students who earn degrees has decreased (NCES, 2013). Unfortunately, during this same period, the percent of white students as compared to Hispanic students who completed a bachelor's degree *widened* from 18 percentage points in 1990 to 25 percent in 2012.

The reasons for this "college gap" are multiple. For students of lower socioeconomic status, access to a four-year degree can be a challenge. Lower income, black and Latino students in urban school districts often have less access to rigorous courses and good teachers in high school, and often experience lower parental involvement in their schooling and the college application process, which can contribute to fewer socioeconomically disadvantaged children going into a four year degree program (Cabrera, Burkum, La Nasa, Bibo in Seidman, 2012). Roderick et al. (2009) found that there are racial/ethnic and SES disparities on college readiness indicators that colleges use for admission, such as high school coursework, achievement test scores and grade point averages.

An important barrier to students of lower socioeconomic status is the financing of higher education. Lower income students and their parents are often very unclear about financial aid opportunities, the process for applying these, and what the actual cost of a college education will be (Long, 2004; Vargas, 2004; Kronen, 2014).

2.1.5 Types of Colleges and Universities

Students who come from a higher SES background are more likely to enroll at a four-year institution as compared to low SES students. This is important because "the first type of post-secondary institution a student attends is so highly predictive of his or her eventual degree attainment

outcomes" (Velez 1985 and Carroll 1989 in Cabrera et al in Seidman, 2012 p. 169 and Cabrera et al in Seidman, 2012 p. 170). Also, students who attend more selective colleges are more likely to earn a degree as compared to students who attend less selective colleges (Bowen et al., 2009; Roderick et al., 2011). Researchers have examined the differences between community college students and those that attend four-year institutions. According to Crisp and Mina (2012), students at community colleges:

> "were more likely to be: African American or Hispanic; financially independent; first generation college students; less academically prepared; working part- or full-time during college; having lower degree aspirations; attending college part-time; delaying enrollment into college following high school; receiving less financial aid; and earning a lower GPA during the first year of college" (Seidman, 2012, p. 154).

Notably, graduation rates differ between community college and four-year college students. Students who start at four-year colleges are more likely to earn a degree or certificate from their institution than if they started at a 2-year college first (Long and Kurlaender, 2009). According to the U.S. Department of Education's National Center for Education Statistics (2003-2004), 79.3% of students at a four-year school earned a degree or certificate within five years as compared with 54.5% of those who attended a community college (Seidman, 2012). In our report, we found that 14% of 2004 graduates who attended Essex Community College earned an associate degree.

Community colleges play an important role on the national college stage. They are local and relatively low cost. They provide a college education to those who are underrepresented in the 4-year college process and afford these students the ability to go onto a four-year institution. These underrepresented students are very often the first in their family to attend college. Notably, they may have different sets of college experiences than those who are traditionally college bound (Crisp and Mina in Seidman, 2012).

2.1.6 Studies of Post-Secondary Outcomes in Urban School Districts

In recent years, researchers have been able to examine post-secondary outcomes using data collected by the National Student Clearinghouse (NSC). The NSC collects basic enrollment and degree information on students who attend participating United States post-secondary institutions (NSC website, http://www.studentclearinghouse.org/). As a result, researchers have been able to follow cohorts of high school graduates to see whether they go to college, when they go to college, how long they go to college, and whether they earn a degree.

Research using NSC data has been conducted in Chicago (Roderick, Nagaoka, & Allensworth, 2006; Roderick, Coca, & Nagaoka, 2011; Allensworth, 2006), and Denver (Buckley & Muraskin, 2009). In Chicago, researchers found college access varied greatly among schools in the district. Higher grade point averages and standardized test scores were strong predictors of going to college and earning a college degree. Students who attended 4-year schools were more likely to persist in school than those who attended 2-year schools. In Denver, the research found just over half of high school graduates enrolled in college. Enrollment rates were highest among whites (71%) and blacks (63%), and lowest among Hispanic students (39%). Within 6 years of graduation, 39% of students had

earned either a college degree or certificate. In the following report we build upon the reported research, and provide a detailed look at NPS high school graduates as they go to college and earn college degrees.

3 Background on Newark and the Newark Public Schools

The Newark is New Jersey's largest city, with a population of about 280,000 persons. Once a wealthy manufacturing center, Newark has suffered from the nation's post-industrial economic trends of the last several decades. Today, Newark is the seventh poorest large city in the U.S., with a poverty rate of 28%. In 2008-2012, the median household income was an estimated $38,387. The population of the city is largely minority: 52% black, 34% Hispanic, and 12% white, with the latter group living mostly in the "Ironbound" section of eastern Newark. These white residents are comprised mostly of immigrants from Brazil, Portugal and elsewhere in southern Europe, and their children.

The Newark Public Schools is the largest school system in New Jersey, serving approximately 40,000 students who attend 71 schools. The Newark educational landscape also has charter, parochial and county high schools. During the period of this report, Newark had three charter high schools: North Star Academy High School (founded 2000), TEAM Academy (founded 2007) and Visions Academy (founded 2010). In addition, the city had three parochial high schools (St. Vincent Academy, St. Benedict's Preparatory School, and Our Lady of Good Counsel High School, which closed its doors in 2006), and two county high schools (Essex County Newark Tech, and Essex County North 13th Street Tech). In 2011, the Newark-based charter high schools had a student population of approximately 700 students, the parochial schools had a student population of around 600, and the Essex County vocational and technical schools had populations of nearly 1,300. The parochial and Essex County vocational and technical schools had students who resided outside of Newark.

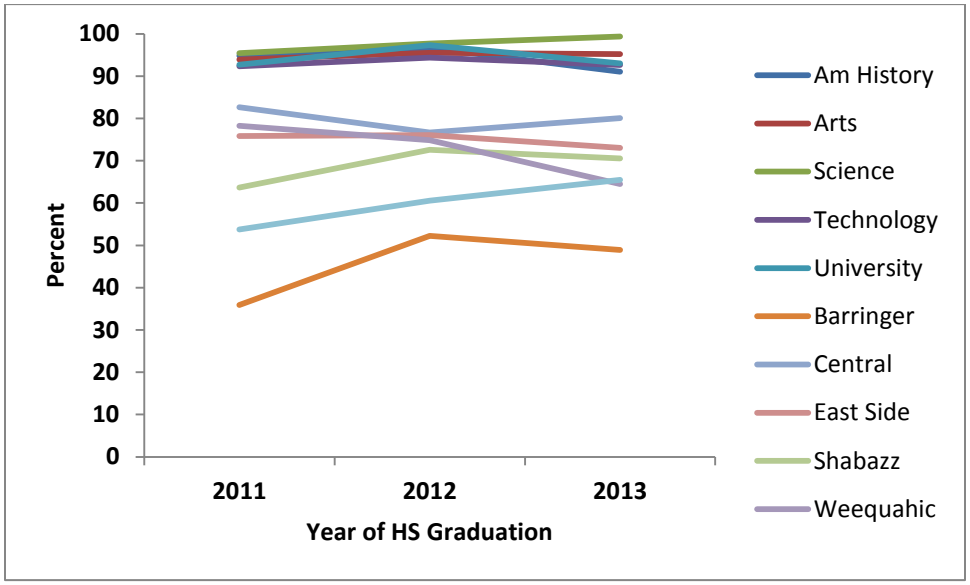
During 2004-2011, NPS had 6 comprehensive high schools, 5 magnet high schools, plus a few other small specialty schools that are not covered in this report. The magnet high schools draw from the entire city, and require applications for admission. Applicants to these schools were "screened" based their academic achievement, interest in the school's focus, and other factors. In 2011, magnet high school students comprised 28% of all high school students in the district.

Like other urban school districts with similar demographic characteristics, NPS is endeavoring, in the face of great social and economic obstacles, to prepare all of its students with the skills needed for college and future careers. One goal of NPS in the coming years is to increase the number of high school graduates who are prepared to enter college and earn a degree. Incorporated in this vision are the three goals of "Excellence, Efficiency, and Equity," which basically equates to giving every student an equal chance to succeed in school and access to an efficient, high quality education (NPS, 2012).

This report presents information on 17,503 students who graduated from the Newark Public Schools between 2004 and 2011. However, the reader should be aware that a considerable number of NPS students never graduate from high school **Figure 1** shows the 4-year cohort adjusted graduation rates as released by the State of New Jersey. These figures show the percent of 9th grade students who graduated from high school in four years with adjustment for verified transfers, and

those "excluded from cohort" because of "extraordinary circumstances" such as death or transfer out-of-state. **Figure 1** shows the magnet high schools in 2011 had graduation rates in the range of 90 to 100%, while the cohort graduation rates among the comprehensive high schools ranged from a low of 35%, for Barringer High School, to a high of 83% at Central High School. The NPS district adjusted cohort graduation rate for 2011 was 61%. *Therefore, the reader should bear in mind that the high school graduates who are described in this report are the approximately 6 of 10 "successes" who persevered and graduated from high school.*

Figure 1. Adjusted 4-year Cohort Graduation Rates: NPS Magnet and Comprehensive High Schools



4 Research Methods

4.1 Research Questions

The following research questions were used to guide this study and analyze the results:

4.1.1 Questions: Matriculation in a College or University

- Which colleges and universities were most commonly attended by NPS graduates?
- What were the rates of matriculation for NPS graduates into a post-secondary institution, and how did these vary by high school and high school type?
- How long does it take for NPS graduates to matriculate in a college or university?
    - How many NPS graduates enroll in college within one year after graduating?
- What factors influence going to college?

4.1.2 Questions: Earning a Post-Secondary Degree

- From which colleges and universities do NPS graduates earn degrees
- What types of degrees are most common?
- What factors influence earning a college degree?
- What are the different "pathways" to earning an associate or bachelor's degree?

4.1.3 Questions: Essex Community College

- Who attends Essex Community College?
- What are the different "pathways" into and out of ECC?

4.2 Data and Methods

The analyses presented in this report employ two different, but related analytic data sets. Data set one is comprised of all NPS graduates from 2004 through 2001 (n=17,503). Data set two is a subset of data set one and is comprised of NPS graduates from 2004 through 2008 for whom we have demographic information (n=7,767).

4.2.1 Data Set One: All NPS Graduates from June 2004 to June 2011

This master data set is comprised of all NPS students who graduated from high school between June of 2004 and June of 2011 (n=17,503). In the spring of 2012, a list of these graduates was submitted by the Newark Public Schools to the National Student Clearinghouse (NSC). NSC then matched these individuals with students who had enrolled at institutions of higher education throughout the U.S. for the period June 2004 through April 2012. The match was based on the student name, high school, and graduation year.

NSC collects basic enrollment and degree information on students who attend participating United States post-secondary institutions (NSC website, http://www.studentclearinghouse.org). The NSC states that it covers 96% of post-secondary students in the United States. As of April 2012, the

month of study initiation, the NSC had 2,965 institutional "partners," with 52 in New Jersey. Comparing the New Jersey NSC partners with institutions that are accredited by the Middle States Commission on Higher Education, only 2 accredited institutions were missing in 2012: Assumption College for Sisters and Somerset Christian College. However, 10 New Jersey colleges were added between 2004 and 2012. The most important of these recently added schools are Passaic County Community College (2006), Seton Hall University (2007), Monmouth University (2008), Berkeley College (2009), and Thomas Edison State College (2011). Therefore, although NSC covered the great majority of New Jersey institutions of higher learning during the study period, some Newark students who attended college during 2004 through 2007 may have been missed in our analyses. Of particular importance is the absence of Seton Hall University for several years, a local college that is frequently attended by NPS graduates (see **Table 3**).

The National Student Clearinghouse database permits researchers to follow a student over time—through matriculation, transfers, degree attainment, etc. Important NSC variables include: semester of enrollment, institution name, public vs. private, 2-year vs. 4-year, degree type, major, and date of degree conferral. Additionally, the NSC data set has information on the student's date of high school graduation and high school. However, the NSC data set does not contain demographic information on students such as age, gender, race/ethnicity, English language proficiency, special education, or type of graduation (i.e., graduation via HSPA).

4.2.2 Data Set Two: Subset of NPS Graduates from 2004 through 2008

Data set two is a subset of the master data set and is comprised of students with basic demographic information obtained from New Jersey HSPA (High School Proficiency Assessment) data for the years 2004 through 2007. We used this smaller subset of NPS graduates for multivariate analyses (Cox proportional hazards models, see *Data Management and Analytic Methods*) that describe relative rates of matriculation and degree attainment over time by race/ethnicity, gender, magnet vs. comprehensive high school, economic disadvantage (free and reduced lunch), and special education.

Of 8,298 NPS graduates between 2004 and 2007, 93.6% (n=7,767) were matched with the HSPA data using the NPS student ID. Of these, 231 graduates were missing information on gender, race/ethnicity, and special education status (see **Table 1**). Another 71 students lacked sufficient information to classify their mode of graduation (SRA vs HSPA). Omitting these graduates yielded an analytic sample of 7,465 (90.0% match with all NPS graduates between 2004 and 2007). Lastly, for the few analyses that use the HSPA language arts and mathematics scores as interval level variables, the sample is 7,433 because some students were missing a HSPA score, but were classified as a HSPA graduate, a SRA graduate, or exempt.

For this data set , the mathematics and language arts HSPA scores are the maximum that the student achieved across all test sessions (students in New Jersey can take the HSPA exam multiple times). Similarly, the HSPA categories that are used in the analyses are the highest that were achieved by the student. The "mode" of graduation was defined as "exempt" if the student was defined as such in the data set. A student was defined as "SRA" if identified as such in the data set. In addition, a small number of students (n=42) had a maximum language arts score, were not exempt, and yet did

not have a classification as "partially proficient," "proficient," or "advanced proficient." In these cases, we categorized them according to DOE classification guidelines based on their maximum score in mathematics and language arts.

4.2.3 Data Management and Analytic Methods

For *data set one* , we employed basic descriptive statistics, including frequencies, percentages and graphical representations of the data. For *data set two*, we employed Cox proportional hazards models, which are a commonly used multivariate approach to the analysis of "censored," time-related phenomena (Allison 2010; Kleinbaum & Klein 2012). Cox proportional hazards models have been used by several researchers to examine post-secondary outcomes (Murphy et al 2010; Doyle 2009; Groenvynch, Vandevelde & Rossem 2013; Zwich and Sklar, 2005).

In our analyses, we follow NPS high school graduates over time to see if and when they went to college, and if they subsequently earned a college degree. Because the follow-up ended in April 2012, some students who would ultimately go to college or earn a college degree had not yet had sufficient time for this to occur. These students are "censored" (i.e., they haven't gone to college, but may still). Cox proportional hazards models are designed for use with censored data. Cox proportional hazards models allow us compare over time rates of going to college and earning a college degree. Additionally, the Cox models allow us to examine the post-secondary outcomes of different segments of the NPS high school graduate population, and to assess the contribution of factors with adjustment of other variables such as gender and race/ethnicity.

As with all multivariate statistical approaches, the Cox proportional hazards procedure is based on a number of assumptions. One key assumption is that the hazard functions are proportional (i.e., the hazard for person 1 is a fixed proportion of the hazard of a second person over time). We assessed the proportional hazards assumption using PROC LIFETEST, and found that two key sets of variables (magnet school status and HSPA scores) often violated this assumption. As result, the parameter estimates reflect the average effect of the variable over time, and are an imperfect reflection of the actual effect. Nevertheless, we present these values because, although imperfect, they shed important light on the relative rates at which students go to college and attain degrees.

All data management and statistical activities were performed using SAS version 9.2. As outlined above, creation of the analytic samples required merging of datasets. Graphs and figures were created using Microsoft Excel. The Cox proportional models were conducted using PROC PHREG with the TIES=DISCRETE option. The duration variables were a) days from high school graduation to matriculation in college or the end of the study), and b) days from first matriculation in college to degree attainment or the end of the study.

5 Profile of NPS Graduates

5.1 Demographic Profile of Graduates

NPS is the largest school district in the state of New Jersey and serves roughly 40,000 students. The urban school district's student population is largely comprised of low-income black and Latino students. **Table 1** shows the demographic profile of NPS graduates for the years 2004-2007. [As noted in the *Methods* section, demographic data were unavailable for the graduation cohorts of 2008-2011.] Between 2004-2007, the NPS student enrollment was roughly 61% black and 28% Latino. Whites, who in this case are mainly immigrant and first generation children from Latin America and southern Europe (mostly Portugal and Spain), comprised almost 10% of graduates. In addition, 60% of students came from "economically disadvantaged" backgrounds (e.g. eligible for free or reduced price school lunch). This figure is surprisingly low given much higher rates of economically disadvantaged students attending NPS high schools as reported in the New Jersey State Report Cards (generally in the range of 75-80%). This result may point to greater high school dropout rates among "economically disadvantaged" students. However, most likely it is a reporting issue. **Table 1** shows special education students comprised 11% of high school graduates, and limited English proficiency students comprised just 1% of graduates.

Table 1. Demographic profile of NPS high school graduates from the years 2004-2007 (n=8,298)

Variable	Value	N	%
Gender (missing: n=553, 6.7%)	Female	4,251	54.9
	Male	3,494	45.1
Race/Ethnicity (missing: n=584, 7.0%)	Black	4,721	61.2
	Hispanic	2,191	28.4
	White	707	9.2
	Other	95	1.2
Economically Disadvantaged (missing: n=726, 8.8%)	No	3,240	42.8
	Yes	4332	57.2
Special Education (missing: n=727, 8.8%)	No	6,711	88.6
	Yes	860	11.4
Limited English Proficiency (missing: n=551, 6.6%)	No	7,647	98.7
	Yes	100	1.3

For this report, we examined demographic change over the four graduation cohorts. **Figure 2** shows slight increases in the proportion of black high school graduates and decreases in the proportion of white and "other" students. Hispanic graduates remained fairly constant as a proportion of graduates.

Figure 3 shows a steady and substantial decrease in the proportion of "economically disadvantaged" high school graduates over the four years. Assuming the validity of the data, these results are consistent with lower income students dropping out or otherwise failing to earn a high school

degree at increasing rates. Additional research is needed to confirm this finding, but the potential implications are alarming. With respect to this report, this finding is also important because apparent increases in college matriculation and persistence might be explained by a decreasing proportion of economically disadvantaged high school graduates. In other words, apparently better performance by NPS in preparing high school graduates for college might actually be the result of weaker students failing to graduate from high school at all.

Figure 2. The changing ethnic composition of NPS high school graduates from 2004 to 2007 (n=7,714)

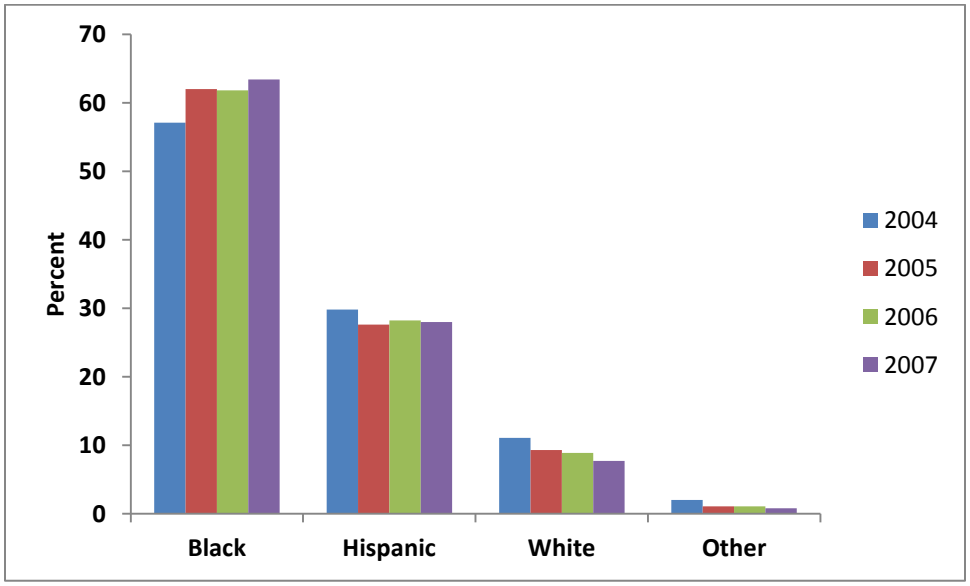


Figure 3. The declining proportion of "economically disadvantaged" (eligible for free or reduced priced lunch) NPS high school graduates (n=7,572)

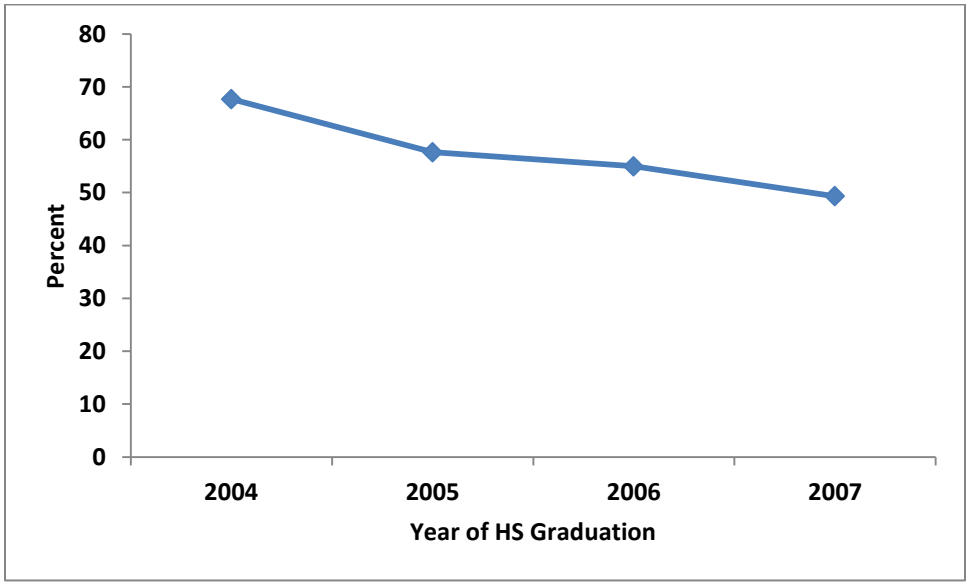


Figure 4 shows a slight increase in the proportion of high school graduates who received special education. **Figure 5** shows 5.5% of 2004 high school graduates were classified as having limited English proficiency; in subsequent years this proportion dropped to zero. The reason for this result is unclear, but this seems likely to be related to reporting and the definition of *limited English proficiency*. No time trend was seen in gender.

Figure 4. The proportion of NPS high school graduates identified as in special education (n=7,571)

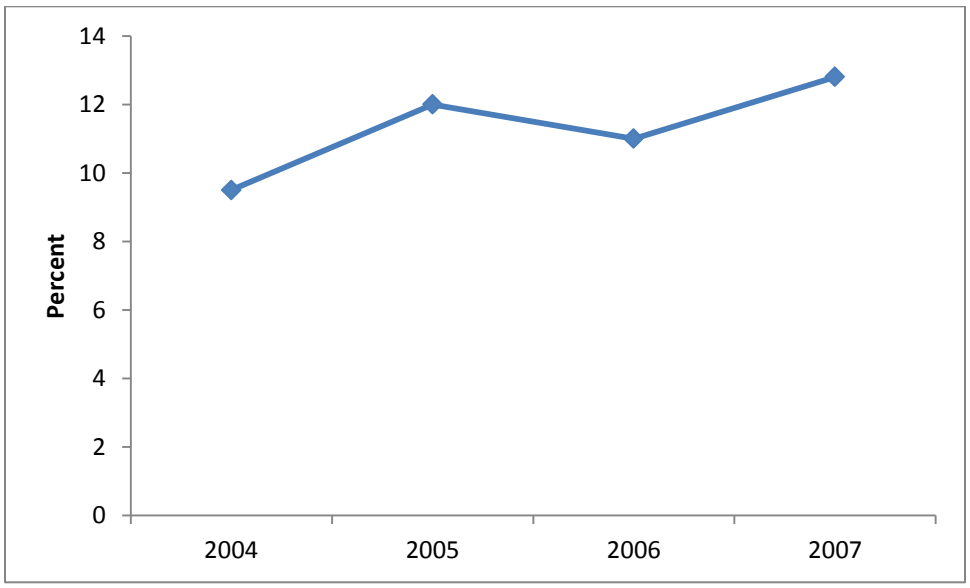
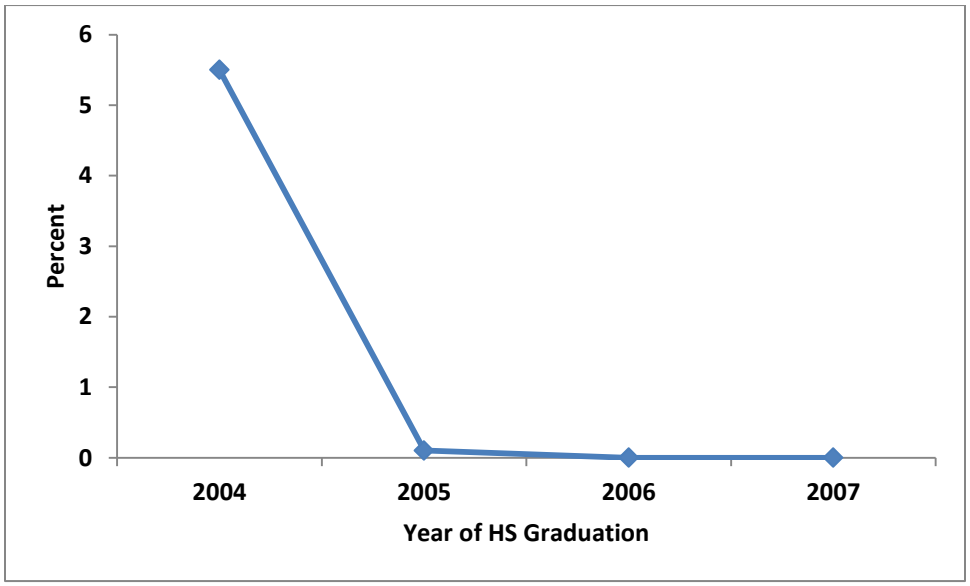


Figure 5. The proportion of NPS high school graduates with limited English proficiency (LEP)(n=7,747)



5.2 Performance on the New Jersey HSPA Examination

5.2.1 Background on the HSPA Examination

The New Jersey HSPA exam was (and is) designed to assess the knowledge and skills that have been acquired during the student's time in school. Between 2003 and 2007, the HSPA examination was comprised of two sections: mathematics and language arts literacy. In the spring of each year, all first time 11th grade high school students were required to take the HSPA examination *unless* the student was judged to have a severe disability that made the examination inappropriate. Students with milder disabilities, and those with limited English proficiency, were required to take the examination. Based on their HSPA performance, students received a score between 100 and 300 in both mathematics and in language arts, and were classified as either "partially proficient" (a score of less than 200), "proficient" (a score of 200 to 249), or "advanced proficient" (a score of 250 or higher) in each of these two areas.

To graduate from high school via HSPA, the State of New Jersey required the public school student to pass both portions of the test with scores of 200 or above ("proficient" or "advanced proficient"). Students who failed to pass both parts of the HSPA examination on the first taking were required by the state to receive remedial instruction in their areas of academic weakness. During their senior year, these students had two additional opportunities to pass both parts of the HSPA. If after these assessments they were still unable to pass the examination, then the students could still graduate based on adequate performance on the Special Review Assessment (SRA). The SRA allowed "students to demonstrate their mastery of the require skills on the HSPA." To pass via SRA, "a team of educators, after examining other evidence…[determined]…whether the student…[had] … mastered enough of the required skills to achieve the equivalent of a passing score on the HSPA" (*Your Guide to the HSPA*, New Jersey Department of Education, March 2006). Also, students who had severe disabilities might graduate through an Alternate Proficiency Assessment. *In summary, NPS students could graduate in one of three ways: 1) pass both parts of the HSPA examination, 2) pass the SRA for mathematics and/or language arts, or 3) graduate via an Alternate Proficiency Assessment because of severe disability.*

5.2.2 Pathways to High School Graduation, 2004-2007

Table 2 shows the mode of graduation by graduation year. The "exempt" are students who were exempt from the High School Proficiency Assessment (HSPA) exam because of severe disability. "SRA only" students are those failed to pass both parts of the HSPA examination and instead graduated via the Special Review Assessment (SRA). "Partial HSPA" students are those who passed one part of the HSPA examination, but not the other. Lastly, "HSPA only" students passed both parts of the examination.

Table 2 shows the proportion of students who were exempt from the HSPA exam was constant over time at 9-10 percent of students. The table also shows a 25% decline in the proportion of students who relied on SRA to graduate, and a 10% increase in the percent of students who graduated by passing both parts of the HSPA exam.

Table 2. The percent of NPS graduates who were exempt from taking HSPA, who passed the HSPA examination, who partially passed HSPA, or who graduated by Special Review Assessment (SRA)

Year	N	Exempt	SRA only	Partial HSPA	HSPA only
2004	1,740	9.0	32.5	20.1	38.4
2005	1,887	10.6	31.5	19.3	38.6
2006	2,007	10.2	27.4	19.9	42.6
2007	2,036	9.4	24.5	17.4	48.7
Total	7,670	9.8	28.8	19.2	42.3

Table 3. Type of graduation by high school, 2004-2007 high school graduates (n=7,670)

Type of School	High School	N	Exempt	SRA only	Partial HSPA	HSPA only
Magnet High School	Arts HS	485	1.9	2.5	16.9	79.8
	Science HS	529	0.0	0.4	0.6	99.0
	Technology HS	501	11.0	12.4	18.4	58.5
	University HS	425	3.4	0.5	4.6	91.5
Comprehensive High School	Barringer HS	1,127	13.8	45.1	19.9	21.2
	Central HS	737	5.6	51.3	22.5	20.6
	East Side HS	1,282	9.3	29.0	21.1	40.6
	Shabazz HS	914	15.1	38.5	23.0	23.4
	Weequahic HS	702	8.6	35.0	26.1	30.3
	West Side HS	957	16.7	28.6	23.3	31.4

Table 3 shows the mode of graduation by high school. The magnet high schools had much higher rates of graduation via the HSPA examination than the comprehensive high schools: Science and University High Schools had more than 90% of students passing the HSPA examination. In contrast, not a single comprehensive high school had more than 50% of students passing HSPA. The high school with the fewest HSPA graduates was Central High School, with just 20% of graduates.

Table 4 shows the high school graduates' performance on the two parts of the HSPA exam. The table shows a 28% increase in the proportion of students who scored "proficient" or "advanced proficient" in mathematics. Language arts also saw improvements, although these increased at half the rate seen in mathematics (a 13% increase over the four years). More impressive were important increases in the proportion of graduates who scored "advanced proficient" in mathematics: the proportion who were "advanced proficient" in mathematics tripled during the four years. The increase in "advanced proficient" in language arts was much more modest: a 30% increase.

Table 4. Performance on the HSPA exam by graduation year (n=7,436)

Year	N	Math				Language Arts			
		Exempt	*Not Prof*	*Prof*	*Adv Prof*	*Exempt*	*Not Prof*	*Prof*	*Adv Prof*
2004	1,740	8.8	50.1	38.8	2.2	8.7	34.9	52.3	4.0
2005	1,887	10.4	48.4	37.2	4.0	9.8	34.0	52.6	3.6
2006	2,007	10.1	43.8	39.0	7.1	9.5	30.8	56.1	3.6
2007	2,036	9.2	38.4	45.4	7.0	8.5	28.1	58.2	5.2
Total	7,670	9.7	44.9	40.2	5.2	9.1	31.8	54.9	4.1

Table 5 shows HSPA language arts scores by high school. Magnet high school graduates performed much better in language arts than graduates from the comprehensive high schools. Science, University, and Arts High Schools had more than 90% of graduates rated as "proficient" or "advanced proficient" in language arts. Technology High School lagged behind the other magnets with just 78% of graduates rated as "proficient" or "advanced proficient." However, this figure is far better than those of the comprehensive high schools. Among the comprehensive high schools, the three schools with the highest performing graduates were East Side (55%), Weequahic (55%), and West Side (53%). Barringer and Central High Schools had approximately 40% of graduates rated as "proficient" or "advanced proficient" in language arts.

Table 5. Language Arts performance on the HSPA exam by high school, 2004-2007 high school graduates (n=7,670)

Type of School	High School	N	Exempt	Not Prof	Prof	Adv Prof
Magnet High School	Arts HS	485	1.6	3.7	86.2	8.4
	Science HS	529	0.0	0.4	70.5	29.1
	Technology HS	501	9.2	12.6	74.4	3.8
	University HS	436	2.8	0.9	81.2	15.2
Comprehensive High School	Barringer HS	1,127	13.4	48.5	37.6	0.4
	Central HS	737	5.2	54.3	40.0	0.5
	East Side HS	1,282	8.4	37.0	53.3	1.3
	Shabazz HS	914	14.7	40.5	44.4	0.4
	Weequahic HS	702	8.4	37.0	54.1	0.4
	West Side HS	957	15.0	31.6	52.9	0.5

Table 6 shows HSPA mathematics performance by high school. As might be expected, Science High School had the highest levels of mathematics performance, with 35% of students scoring "advanced proficient" and 99% scoring "proficient" or higher. University High School was second with 92% of students rated as "proficient" or higher in mathematics. In contrast, graduates from the comprehensive high schools did much more poorly in mathematics. With the exception of East Side High School, more than half of students were scored as "partially proficient" in mathematics. The poorest scoring high school was Central High School with 71% of graduates rated as "partially proficient" in mathematics.

Table 6. Mathematics performance on the HSPA exam by high school, 2004-2007 high school graduates (n=7,670)

Type of School	High School	N	Exempt	Not Prof	Prof	Adv Prof
Magnet High School	Arts HS	485	1.2	17.1	75.9	5.8
	Science HS	529	0.0	1.0	64.5	34.6
	Technology HS	501	10.6	30.5	55.9	3.0
	University HS	436	3.2	4.6	70.0	22.2
Comprehensive High School	Barringer HS	1,127	13.7	61.5	24.4	0.4
	Central HS	737	5.6	70.8	23.2	0.4
	East Side HS	1,282	9.3	42.3	45.1	3.4
	Shabazz HS	914	15.0	59.5	24.7	0.8
	Weequahic HS	702	8.6	59.1	31.8	0.6
	West Side HS	957	16.5	49.0	33.1	1.4

6 NPS Graduates and Going to College

6.1 Which Colleges and Universities Were Most Commonly Attended?

This section of the report focuses on rates of attending college or university. Subsequent sections (**Sections 7** and **8**, below) examine degree attainment.

First, we examined the location of the colleges and universities that were most commonly attended by NPS graduates. NPS graduates attended a wide range of colleges and universities, including over 281 different 2-year schools, and 511 different 4-year schools. For many of these colleges and universities, the attendee was the occasional student who enrolled a semester or two. Nevertheless, these figures underscore the mobility of many NPS graduates.

Table 7. States that were most commonly the location of NPS graduates' college or university

Rank	State	%	Rank	State	%
1	New Jersey	88.0	6	North Carolina	1.2
2	New York	3.1	7	Georgia	1.0
3	Pennsylvania	2.7	8	California	1.0
4	Virginia	1.4	9	Florida	1.1
5	Maryland	1.4	10	Washington D.C.	0.7

Table 7 shows the states where NPS graduates attended college. The analyses show, not surprisingly, that the great majority of matriculating students (88.1%) attended college in New Jersey. However, a fifth of matriculating students (18.0%) attended a college outside of New Jersey**.** As would be expected, NPS graduates who matriculated out-of-state tended to attend colleges that were located in neighboring New York and Pennsylvania. However, an important number of graduates matriculated in colleges that are located in southern states. Related to this, a number of NPS graduates matriculated in a Historically Black College (4.7%). Relatively few students enrolled in online universities, the most prominent being the University of Phoenix (2.1% of matriculating graduates).

Table 8 shows the colleges and universities that were mostly commonly attended by NPS graduates. Among students who attended 2-year schools, half went to Essex County College (ECC). Significant numbers of graduates attended Union County College in suburban Cranford, NJ, and a small number enrolled at Hudson County Community College in Jersey City, NJ. In contrast with the 2-year schools, students who attended 4-year colleges and universities were more widely distributed among schools. Nevertheless, the most commonly attended colleges were located in northern New Jersey—in relatively close proximity to Newark. Students enrolled at Kean University (Union, NJ), Rutgers-Newark, and Rutgers-New Brunswick in approximately equal numbers. Montclair State University and Bloomfield College were slightly less popular choices. However, **Table 8** shows almost a fifth of NPS graduates who attended 4-year institutions went to schools other than the most popular colleges.

Table 8. Colleges or universities that were most commonly attended for at least one semester by NPS graduates. The sum of the 4-year and 2-year percentiles is greater than 100% because some students enroll in both types of schools.

	4-year Schools		2-year Schools	
Rank	*Institution*	*% matric*	*Institution*	*% matric*
	Any 4-year school	53.3	Any 2-year school	62.1
1	Kean University	5.4	Essex County College	50.0
2	Rutgers-Newark	5.3	Union County College	7.1
3	Rutgers-New Brunswick	5.2	Hudson County Community College	1.6
4	Bloomfield College	4.5	All other 2-year schools	6.9
5	Montclair State University	4.2		
6	Jersey City University	3.0		
7	William Patterson University	3.0		
8	Berkeley College	2.9		
9	NJIT	2.7		
10	University of Phoenix	2.1		
11	Fairleigh Dickenson	1.5		
12	Seton Hall	1.1		
	All other 4-year schools	19.6		

In summary, NPS high school graduates generally attend colleges and universities that are located in northern New Jersey. However, NPS high school graduates matriculate at post-secondary institutions throughout much of the United States.

6.2 At What Rates Did NPS Graduates Go To College?

In this portion of the report, we provide an overview of college and university matriculation rates among NPS high school graduates. We present this information by graduation cohort (2004 through 2011) and high school type. The reader will note apparent declines in matriculation rates among more recent graduation cohorts (see **Table 9**). These apparent declines occur because many students delay matriculating in college for several years. *Therefore, the reader should note that the 2004-2011 matriculation rates systematically underestimate the "true" rates that will ultimately occur when many students ultimately enroll in college since graduation cohorts were followed anywhere from 1 year (2011) to 8 years (2008).* In other words, the matriculation rates for the 2011 cohort will increase as time passes and more graduates enroll in college. In subsequent sections of this report (see *Timing of First Matriculation*, below), we provide more sophisticated longitudinal analyses of matriculation that allow us to compare the progress of the different graduation cohorts and to estimate an "ultimate" matriculation rate.

Table 9. Percentage of NPS graduates who matriculated in a post-secondary institution by graduation cohort

Cohort	N	Any Institution	Less than 2 years	2-year	4-year	Both 2- and 4-year
2004	1,947	58.6	0.3	25.1	18.3	14.8
2005	2,001	59.8	0.4	27.5	19.7	12.1
2006	2,143	59.2	0.1	27.1	19.6	12.5
2007	2,207	58.1	0.0	25.2	21.8	11.2
2008	2,342	57.9	0.1	27.7	27.7	8.0
2009	2,467	53.6	0.0	26.5	26.5	6.9
2010	2,311	47.7	0.0	23.3	23.3	3.9
2011	2,085	50.4	0.1	24.2	24.2	1.1
All years	17,503	55.5	0.1	25.8	25.8	8.7

Table 9 shows more than half of NPS graduates from the years 2004 to 2011 enrolled in a college or university. The table shows the expected decline in matriculation rates as described above. Focusing on the oldest cohorts, 2004 through 2006, overall matriculation rates are fairly similar, with about 60% of NPS graduates enrolling in a college or university: about a third enrolled in a 4-year college, and about 40% enrolled in a 2-year college. Very few students (n=23) enrolled in a less than 2-year institution. An important proportion (15.6%) of matriculating students enrolled in both a 2-year and 4-year institution during the time they were enrolled in a post-secondary institution. **Table 9** shows an apparent rapid decline in this "both" category over the years, which reflects the time it takes for a student to progress from one type of school to another (e.g., from a 2-year school to a 4-year school).

In terms of comparing matriculation rates by high school type, it is important to note that there are three different types of high schools that students attend in the NPS district: comprehensive high schools (n=6), magnet high schools (n=4), and specialty high schools, which have all been opened in the last five years (n=6). According to the NPS website, "All NPS high schools are college preparatory; each is designed around the expectation that every student will graduate with the knowledge and skills necessary to enroll and thrive in college."

The six **comprehensive** high schools (Barringer, Central, East Side, Malcolm X Shabazz, Weequahic, and West Side) are "unscreened" schools meaning that they do not rank or choose student applicants. **Magnet** schools, on the other hand, are "screened" schools that have a special focus and rank students based on a set criteria, such as academic achievement. At the time of this study, there were four magnet high schools to choose from: Science High School is a science and mathematics specialized school; Technology HS has a STEM based program, University HS aims to produce leaders, and Arts HS requires auditions and combines a traditional curriculum with visual and performing arts.

Table 10 shows matriculation rates by high school type. As would be expected since magnet schools screen students based on prior academic achievement, students who attended NPS's magnet high schools were the most likely to matriculate in college. Between 2004 and 2011, approximately 4 of 5 magnet high school graduates attended a college or university. In contrast, less than half of comprehensive high school graduates (48.5%) went on to college. **Table 10** also shows magnet high school graduates were much more likely to attend a 4-year institution than graduates of the comprehensive high schools. Of those students who matriculated in any college, 3 of 4 magnet graduates (77.7%) attended a 4-year institution, while just 41.8% of the comprehensive students attended a 4-year institution. In contrast, 72.9% of matriculating comprehensive graduates and 41.5% of magnet graduates attended 2-year institutions.

Table 10. Number and percent of NPS high school graduates who matriculated in a college or university (n=17,503)

Cohort	N	% at any institution	% at 2-year institution only	% at 4-year institution only	% at 2-year and 4-year institution
Comprehensive High Schools					
2004	1,482	50.3	25.3	12.2	12.4
2005	1,547	52.8	30.1	12.4	9.9
2006	1,611	51.0	28.9	11.8	10.2
2007	1,672	51.0	28.0	13.8	9.2
2008	1,831	50.1	29.9	14.3	6.3
2009	1,840	46.0	28.4	11.7	5.8
2010	1,599	41.7	25.8	13.0	2.9
2011	1,253	44.2	28.2	14.9	1.0
TOTAL	12,835	48.5	28.1	13.0	7.3
Magnet High Schools					
2004	465	85.2	24.5	38.1	22.6
2005	454	83.7	18.9	44.9	19.6
2006	532	84.0	21.4	43.0	19.6
2007	535	80.4	16.1	46.7	17.6
2008	511	84.2	19.6	50.3	14.3
2009	521	81.2	19.8	50.7	10.8
2010	592	67.2	17.6	42.4	7.3
2011	567	75.0	17.5	55.7	1.8
TOTAL	4,177	79.7	19.3	46.6	13.7
*Other High Schools**					
2009	106	50.9	26.4	17.0	7.6
2010	120	30.8	18.3	11.7	0.8
2011	265	26.8	19.6	6.8	0.4
TOTAL	491	33.0	20.8	10.2	2.0

*Other high schools include Academy of Vocational Careers, Fast Track Success Academy, New Jersey Regional Day School, Newark Innovation Academy, and Newark Vocational High School.

Table 11 shows matriculation rates by specific high school for the combined 2004 and 2005 cohorts. [See **Appendix A** for matriculation rates by school and graduation cohort]. Among the magnet high schools, Science and University High Schools had the highest matriculation rates (91.1 and 88.9%). Arts High School had a somewhat lower figure of 84.2%. Technology High School lagged behind the other magnet high schools at 73.6%. Among the comprehensive high schools, Shabazz High School had the lowest matriculation rate (46.9%) and Weequahic had the highest (54.5%).

Table 11. Percentage of NPS graduates (2004-2005) who matriculated in college by specific high school

Comprehensive High Schools					Magnet High Schools				
School	*Any*	*2-yr*	*4-yr*	*Both*	*School*	*Any*	*2-yr*	*4-yr*	*Both*
Barringer HS	49.3	29.2	8.9	11.2	Arts HS	84.2	23.2	38.1	22.8
Central HS	52.2	28.8	10.0	13.5	Science HS	91.1	14.1	54.4	22.6
East Side HS	50.9	28.9	12.9	9.1	Technology HS	73.6	33.7	22.4	17.4
Shabazz HS	46.9	26.4	12.3	8.2	University HS	88.9	14.6	52.5	21.7
Weequahic HS	54.5	27.1	14.9	12.5	All Magnet HS	84.1	21.9	41.2	21.0
West Side HS	52.3	23.2	15.4	13.7					
All Comprehensive HS	50.7	27.4	12.2	11.1					

Table 12. Percentage of NPS graduates in college by specific high school and type of high school: schools created since 2004

School	Years	N	Any	2-yr	4-yr
Academy of Vocational Careers	2009, 2010	96	33.3	26.0	8.3
American History HS	2010	90	71.4	21.4	45.2
Fast Track Success Academy	2011	31	22.6	19.4	3.2
New Jersey Regional Day School	2009, 2010, 2011	294	28.2	22.5	19.3
Newark Innovation Academy	2011	107	26.2	23.4	2.8
Newark Vocational HS	2010, 2011	8	0.0	0.0	0.0

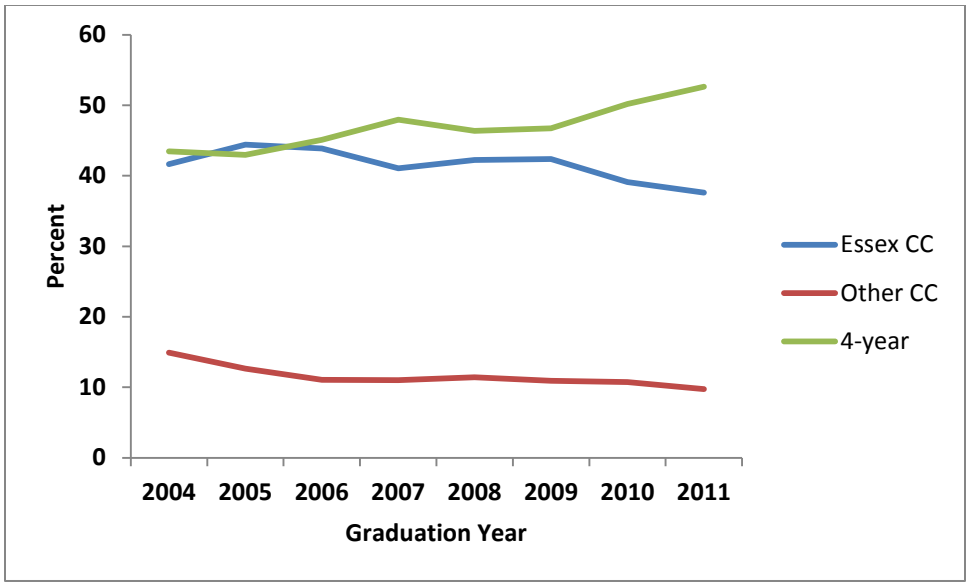
Table 12 shows the matriculation rates for *specialty* high schools and the recently inaugurated magnet school, American History High School. Data were available for just the past few years, in some cases because the school is newly created, and for others because the data were not available. The *Academy of Vocational Careers* is focused on vocational training. The *Fast Track Success Academy* is

> "a compilation of alternative learning style high schools and middle schools which operate as schools within schools. It is a three phased model which includes a specialized 45- day credit recovery/enrichment program to students who have performed below district benchmark standards in multiple subject areas, remediation/assessment and student support services. The program was designed for students who need an accelerated pace to meet graduation requirements using multiple pathways."

New Jersey Day School serves severely handicapped children. The *Newark Innovation Academy* is "one school with seven campuses;" the school employs "four nationally recognized learning models - Big Picture Learning, Performance Learning Centers and Gateway to College." *Newark Vocational High School* has as its mission "to prepare youngsters for college, post-secondary education, including certificate bearing programs, apprenticeships, and immediate productive employment." **Table 12** shows all these specialty schools have college matriculation rates that fall well below those of the comprehensive high schools. **Table 12** shows American History High School with a much higher matriculation rate than the others in the table, although one that lags behind the other magnet schools.

In summary, approximately 60% of NPS graduates for the 2004-2008 cohorts matriculated in college. More recent cohorts have lower matriculation rates because some graduates are delayed in beginning college. Graduates of the magnet high schools are 60-70% more likely to attend college or university than comprehensive graduates. Graduates of magnet high schools are also 2-3 times more likely, depending on the cohort, to attend a 4-year college than graduates of comprehensive high schools.

Figure 6. Percentage of first matriculations at 4-year, 2-year, and Essex Community College



6.3 Where Did Students First Attend College?

This section describes where NPS high school graduates first attend college. **Figure 6** compares the percent of matriculating students who first enrolled at Essex County College, at another community college, or at a 4-year institution. The figure shows a steady increase in the proportion of enrollments at 4-year colleges, and steady declines in first enrollments at ECC and other 2-year college.

6.4 How Long Does It Take to Begin College or University?

This section of the report focuses on the length of time taken by NPS graduates to matriculate in a college or university. For simplicity, the analyses presented below focus on those 17,458 students who were June or August graduates (99.8% of graduates, omitting 45 winter graduates). We examine enrollment on a three term per year basis (summer, fall and spring). Although a few students were enrolled in quarterly classes (e.g., enrolled in a winter term), the following simplified analyses provide a clear picture of the relationship of time since graduation to college enrollment. Please recall that the cohorts were followed anywhere from to 1 year (2011) to 8 years (2004).

Combining all cohorts, a very small number of graduates enrolled in college during the summer after graduation (just 2.4%). Instead, the greatest number of first time enrollment occurred in the fall term after graduation, when 38.6% of high school graduates enrolled in college. Another 5.7% enrolled in the spring semester. For the 2004 cohort, comprised of those students with the longest time to enroll in college, only 22.6% of students matriculated in college later than the spring after high school graduation.

Figures 7 and **8** show the pattern of first matriculation for each individual cohort. This permits us to compare the cohorts in terms of matriculation rates. **Figure 7** shows the cumulative college enrollment by the number of terms since graduation.[1] The pattern of enrollment in college or university is similar across all cohorts from 2004 to 2011. **Figure 7** shows that after several years the cumulative matriculation rate appears to top out at about 60%.

Figure 7 also shows modest, but important increases in matriculation rates from 2004 to 2011. For example, at 9 terms since graduation, the 2008 cohort had 56.5% of graduates matriculating vs. 52.2% for the 2004 cohort, an 8% increase in matriculation rate. And, the 2011 cohort had approximately 10% more graduates who matriculated by 3 terms post-graduation than the 2004 cohort. We hope that these earlier matriculations will result in greater long-term matriculation rates, with the later cohorts seeing larger proportions of students enrolling in college than earlier cohorts.

Figure 8 presents the same information in different form (by year after graduation). Again, the figure shows the great majority of June and August NPS graduates matriculated during the first year after graduation. Small and declining numbers of students enrolled in college as time elapsed since high school graduation.

Figure 9 presents the matriculation pattern for students who graduated from magnet high schools by cohort. The matriculation rates for the 2004, 2005, and 2006 cohorts appear to plateau at approximately 85%. The 2005 cohort started off slowly, but caught up with 2004 over time. Similarly, the 2007 cohort tended to enroll later in college, but also caught up over time. In contrast, the 2008 cohort was quick to enroll in college, but matriculation rates appeared to plateau quickly at close to 85%. These results suggest that the 2008 magnet graduates' relatively low enrollments in

[1] For analytic purposes, terms were defined as spring, summer and fall on the basis of the enrollment date (term 1 is the summer after graduation, term 2 is the fall, term 3 is the spring, and term 4 is the second summer following graduation).

the first year since high school graduation may not be indicative of higher long-term matriculation rates. One notable deviation from the general pattern for magnet graduates occurred in the 2010 cohort, which has been very slow to enroll in college.

Figure 7. Cumulative proportion of NPS graduates (June & August) who enrolled in a 2-year or 4-year college or university by year of graduation

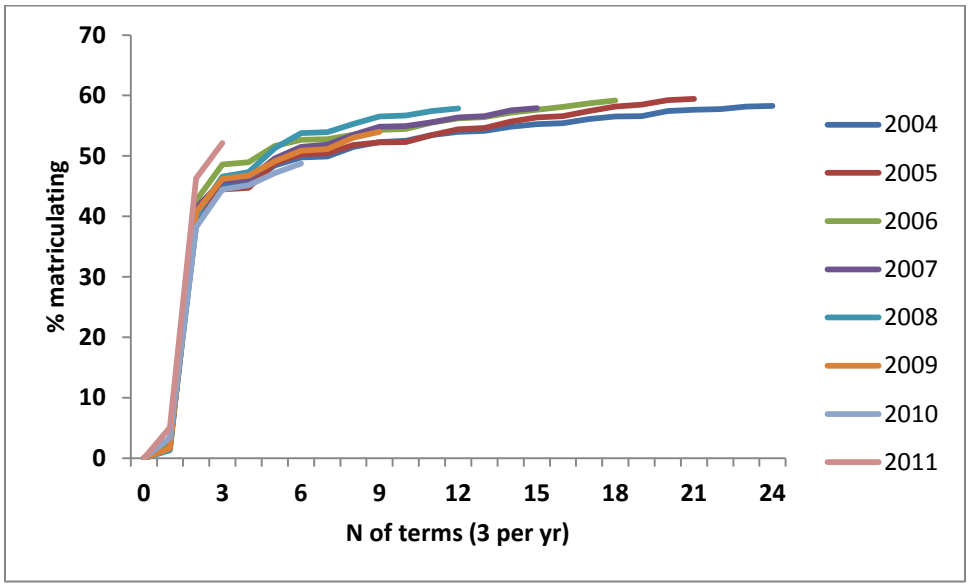


Figure 8. Proportion of NPS graduates (June & August) who first enrolled in a 2-year or 4-year college or university by year of graduation.

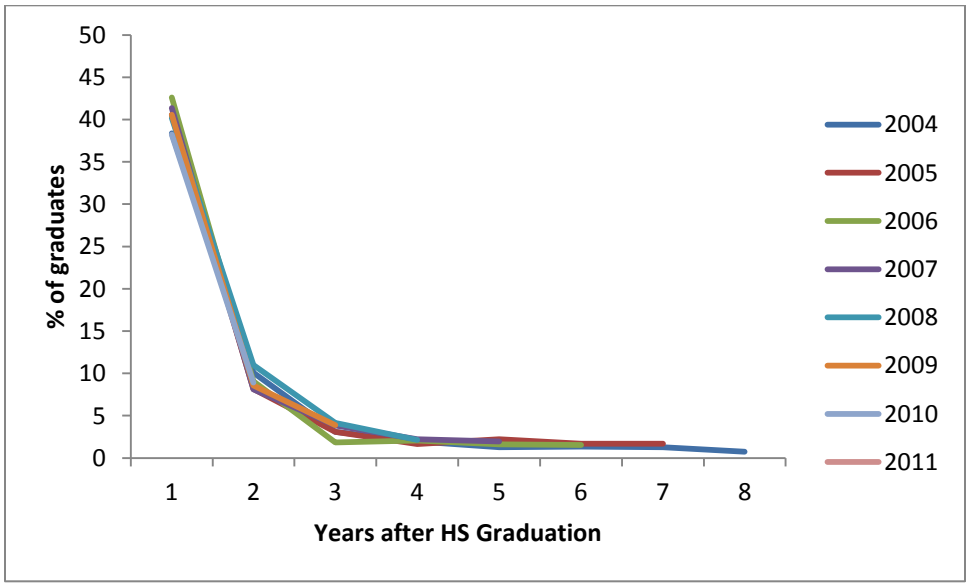


Figure 9. Cumulative percent of magnet high school graduates who matriculated in college or university (2004-2011 graduation cohorts)

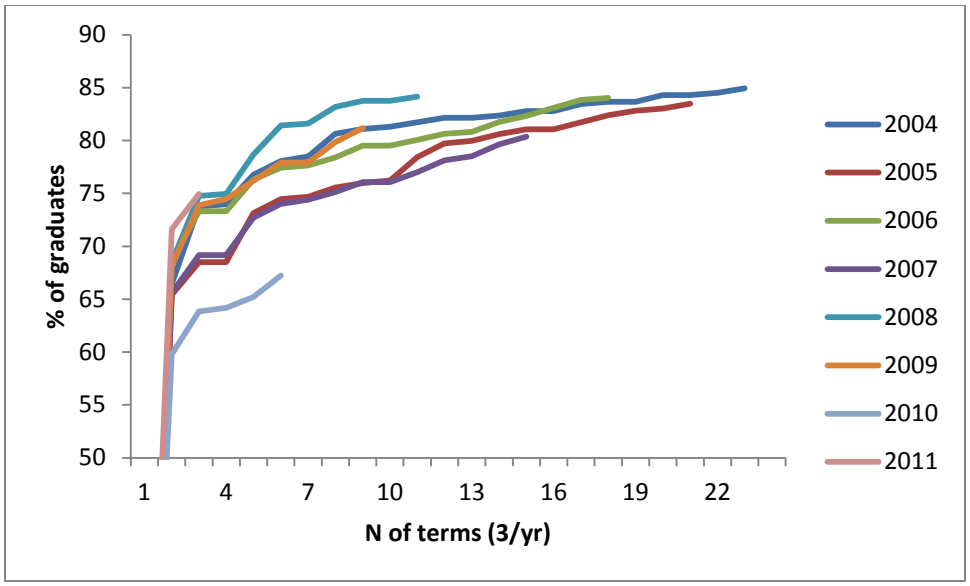


Figure 10. Cumulative percent of comprehensive high school students who matriculated in college (2004-2011 graduation cohorts)

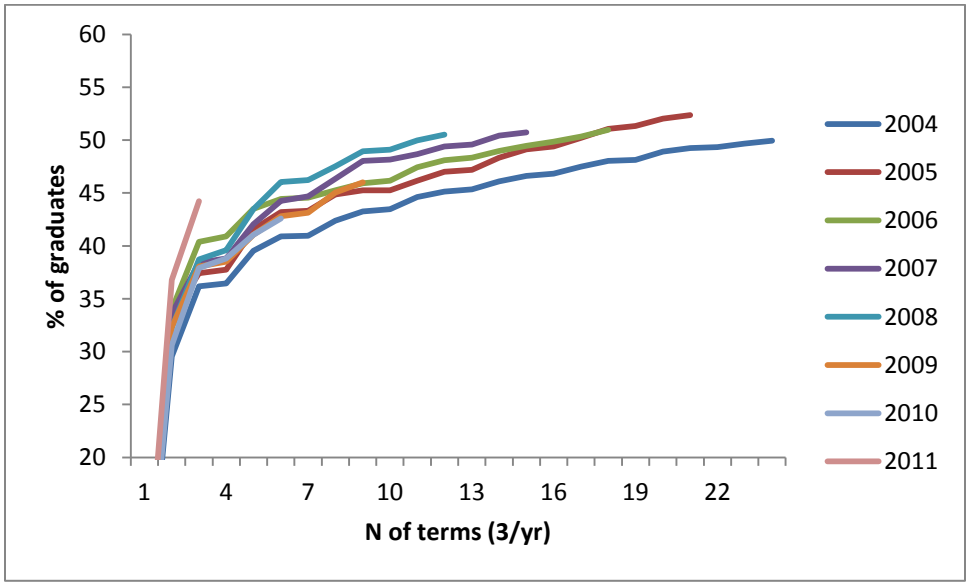


Figure 10 shows the cumulative matriculation rates for those students who graduated from the comprehensive high schools. As noted earlier, graduates of the comprehensive high schools are much less likely to matriculate in college than those who attended the magnet high schools. **Figure 10** suggests that college matriculation rates will top out at no higher than 55% (or 30% lower than the magnet graduates). **Figure 10** also shows a tendency for the comprehensive graduates to "track" based on first year matriculation rates (rather than showing "catch-up" like some of the magnet cohorts). This suggests that 1-year post-graduation matriculation rates may be a good proxy for long-term matriculation rates in this group. Lastly, **Figure 10** suggests higher rates of college

matriculation in more recent cohorts. In particular, the 2011 matriculation rates are quite high at one year since graduation; this may lead to even higher long term matriculation rates than seen for previous cohorts.

In summary, these analyses suggest that matriculation rates among magnet graduates plateau at approximately 85%, whereas those among comprehensive school graduates top out at about 55%. Matriculation rates among comprehensive high school graduates appear to have been higher in recent cohorts.

6.5 How Many Graduates Enroll in College within One Year of Graduation?

In this section, the analyses focus on rates of matriculation in college within one year of graduation. **Figure 11** shows matriculation within one year of graduation among graduates of both magnet and comprehensive high schools. In 2004, 36.2% of comprehensive high school graduates matriculated in college within a year of high school graduation. Between 2006 and 2010, first year matriculation rates remained essentially static. However, the 2011 comprehensive high school cohort saw a substantial increase over prior years (44.2% vs. 37.9 the prior year), which amounts to a 17% increase in first year matriculation.

Figure 11 also shows first-year matriculation rates for the magnet high schools. Greater instability in the lines is due to the smaller numbers of magnet graduates. On the whole, rates of first year matriculation for the magnet high schools were stable between 2004 and 2011. The one exception was the 2010 cohort, which showed a "dip" to 63.8% of graduates. This drop was also very clear in **Figure 12**. The reason for this is unclear, but may have to do with the quality of the data.

Figures 12 and **13** show first-year matriculation rates for the six comprehensive high schools, and the four magnet high schools. Comparing these two figures, one sees considerably more variability in first-year matriculation rates among the magnet high schools than seen among the comprehensive high schools. In other words, matriculation rates are more similar among the comprehensive high schools than among the magnet high schools. **Figures 12** and **13** also show more year-to-year variability among the magnet high schools, which, as noted above, is largely a function of the much smaller numbers of magnet high school graduates

Figure 11. Percentage of magnet and comprehensive graduates who matriculated within one year of high school graduation.

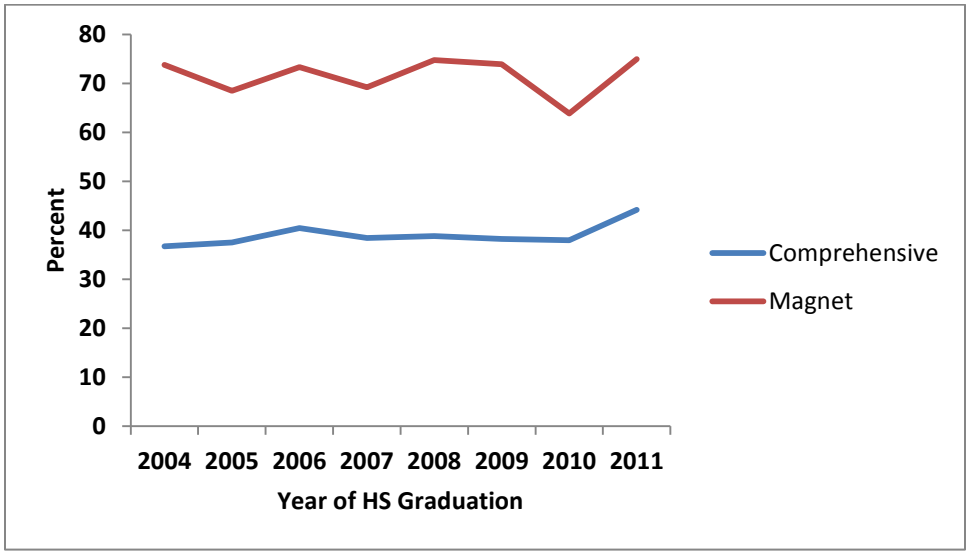


Figure 12. Percentage of NPS graduates who matriculated within one year of graduation by comprehensive high school of year of graduation

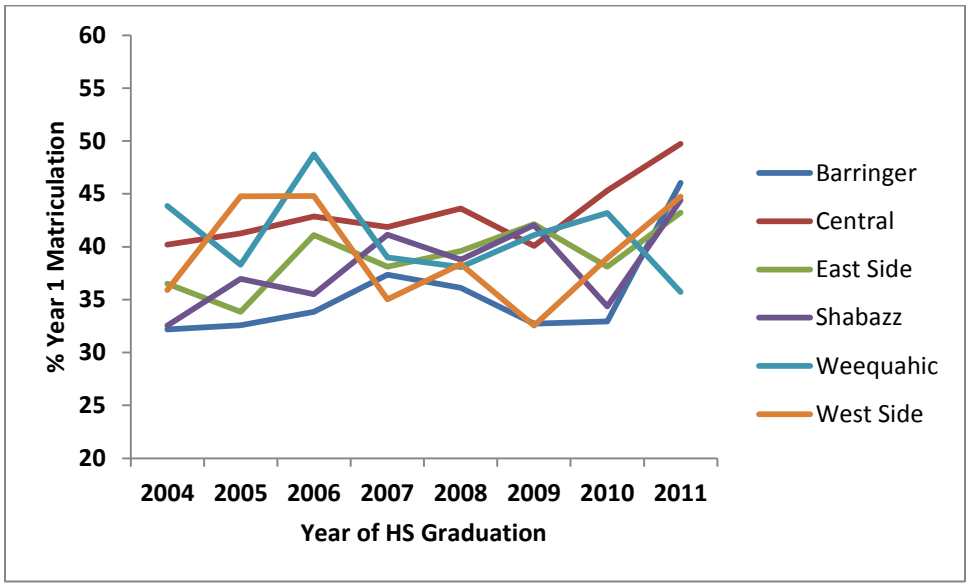
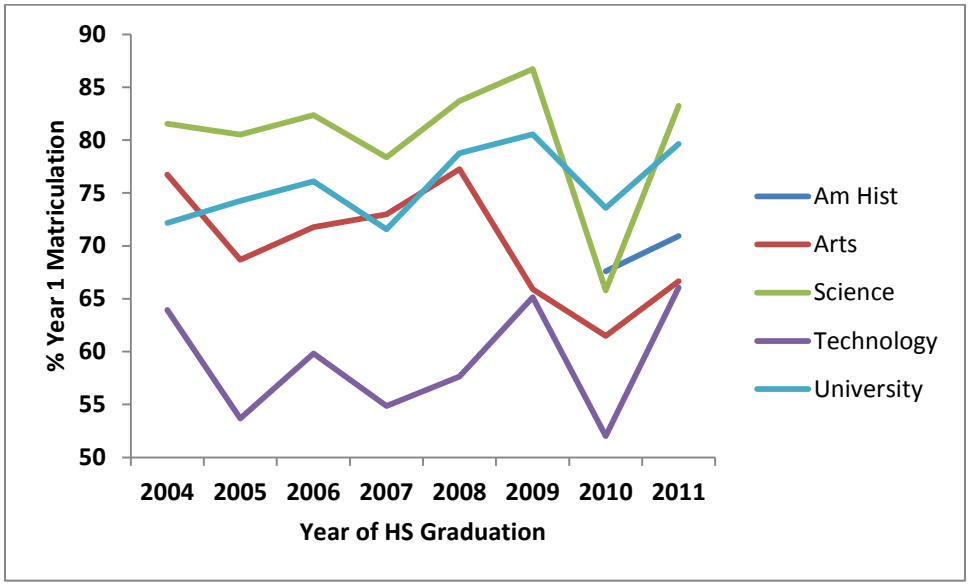


Figure 13. Percentage of NPS graduates who matriculated within one year of graduation by magnet high school and year of graduation



Looking at the comprehensive high schools (**Figure 12**), substantial increases in the first-year rates occurred at Central and West Side High Schools between 2009 and 2011. Barringer, Shabazz, and East Side High Schools show increases from 2010 to 2011, although whether these gains will be sustained in coming years remains to be seen.

Figure 13 shows first-year matriculation rates for the five magnet high schools. Overall, one year matriculation rates have been stable at the magnet high schools. However, substantial dips in matriculation occurred for the 2010 cohort at both Technology and Science High Schools; smaller declines occurred at Arts and University High Schools. Again, the reasons for this are unclear, but it seems likely that the causes are unknown data quality issues for the 2010 graduates.

In summary, the analyses suggest little change in first-year matriculation rates—either by high school type or district wide.

6.6 What Factors Influence Going to College?

6.6.1 Mode of Graduation & Performance on the HSPA Examination

This section examines the relationship of rates of college matriculation to students' scores on the New Jersey High School Proficiency Assessment (HSPA), and their related mode of graduation for the 2004 through 2007 graduation cohorts. First, we present the unadjusted relationships of HSPA scores to matriculation in college.

Figure 14 shows the relationship between the HSPA mathematics scores and matriculation in a college or university. The figure shows mathematics scores were strongly predictive of a student's likelihood of going to any college, whether 2-year or 4-year. The higher the student's mathematics score, the more likely that the student enrolled in college. This relationship was linear: for each

increment in mathematics score, there was a steady increase in the matriculation rate. The likelihood of going on to a 4-year college also increased as a linear function of the HSPA mathematics score: as scores went from lower to higher, the odds of matriculating in a 4-year college increased steadily.

In the case of 2-year colleges, **Figure 14** tells a different story. Higher mathematics scores predict slightly higher matriculation in 2-year schools until a score of approximately 200 (the state cutoff for "proficient"). Above this value, enrollments in 2-year colleges steadily declined, which occurred because these better performing students went onto 4-year colleges.

Figure 14. The relationship of HSPA mathematics scores to matriculation in a 2-year or 4-year college or University (n=7,649).

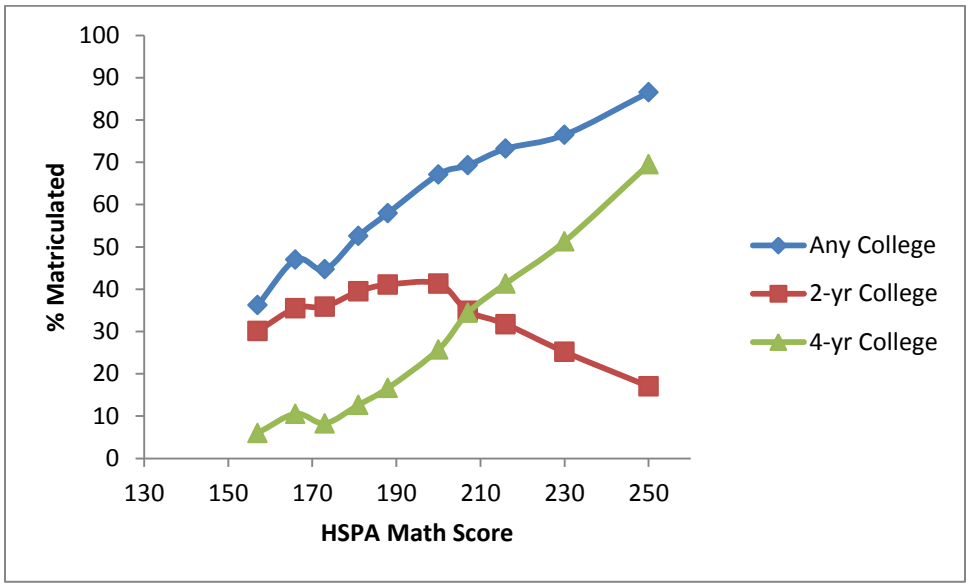
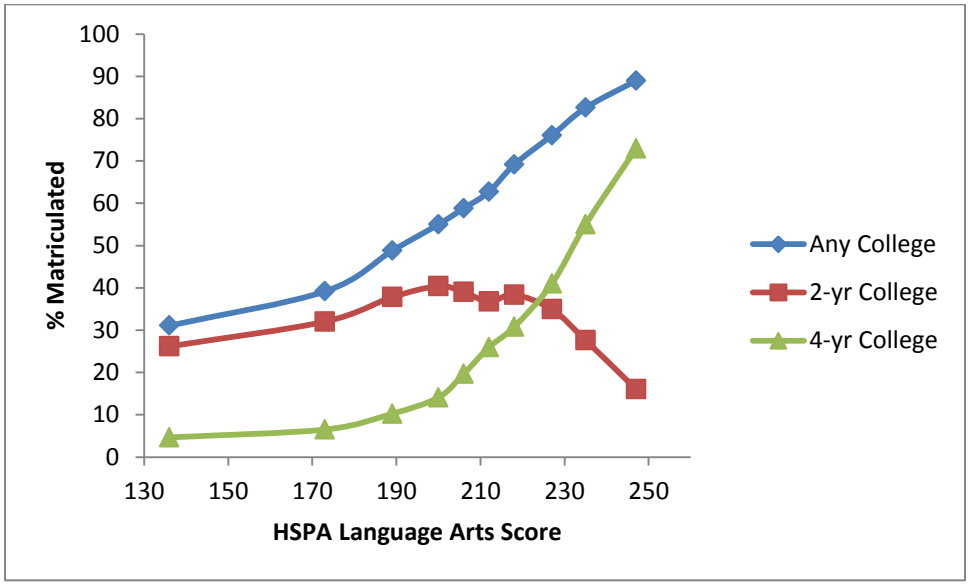


Figure 15 shows the relationship of HSPA language arts scores to matriculation in college. The pattern is fairly similar to that that seen for mathematics performance. The relationship of the HSPA score to matriculating in any college was again fairly linear, although there was a slight suggestion of a weakening of this relationship for students in the "partially proficient" category.

In the case of going to a 4-year college, a non-linear relationship is seen. With language arts scores between 130 and 200 ("partially proficient"), enrollments in 4-year colleges were very low with a slight acceleration in matriculation as language arts scores went from lower to higher. Above a score of 200 ("proficient"), enrollments in 4-year colleges increased steadily with higher language arts scores.

As for enrollments in 2-year schools, enrollment rates modestly increased across the "partially proficient" range. Above a score of 200 ("proficient"), 2-year college enrollments began to decline somewhat, and then to decline precipitously with scores above 220.

Figure 15. The relationship of HSPA language arts scores to matriculation in a 2-year or 4-year college or University (n=7,649).



6.6.2 Multivariate Models and Going to College

In this section, we presented the results several multivariate Cox proportional hazards models of the time to first matriculation in college. These survival analysis models describe the rates at which NPS graduates matriculate in college over the passage of time. The models take into account the fact that some students will ultimately matriculate in college, but have not been followed long enough for this to have occurred. The statistic of interest here is the hazard ratio (HR), which indicates the rate at which an event occurs as compared to a reference group. The HR is analogous to comparing the mileage of two automobiles. If one car used 40 miles per gallon and a second got 20 miles per gallon, then the first car gets twice the miles per gallon of the second. In similar fashion, if magnet school graduates enroll in college at twice the rate per unit time of non-magnet school graduates, then the hazard ratio would be 2.00. The data employed come from 7,767 NPS graduates from the 2004 through 2007 graduation cohorts who have demographic data (see **Methods**).

In this section, we provide a summary of these results because the number of models is considerable and they are technical. The actual Cox proportional hazards models are provided in **Appendix B** (**Table B.1** through **Table B.21**). Here, instead of providing the Hazard Ratios, we present the percent increase or decrease in the rate of attending college as compared to a reference category (e.g., comprehensive high schools, or black females). We will note when results were "statistically significant," that is when the results are unlikely due to chance.

6.6.2.1 Performance on the HSPA Examination and Going to College

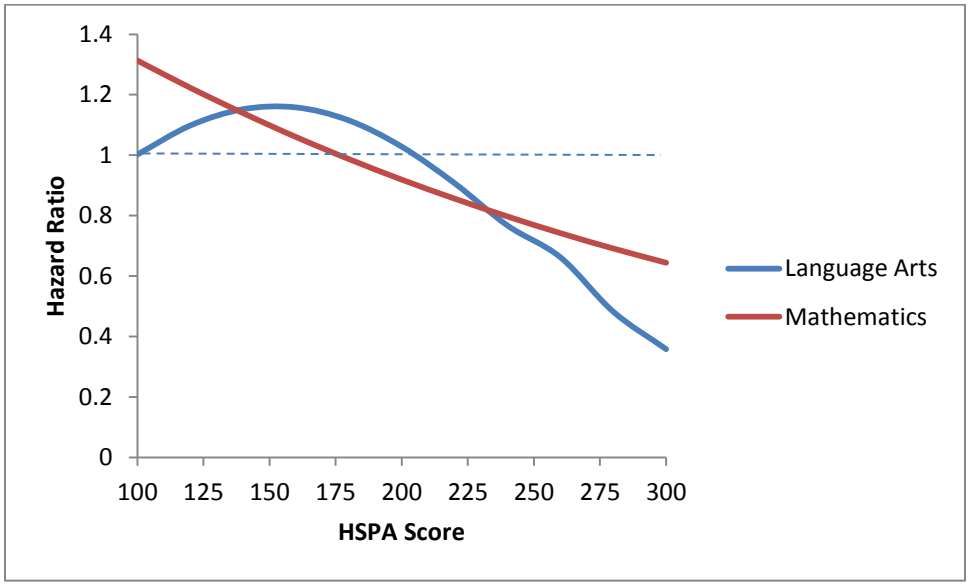
Cox proportional hazards models were used to examine the relationship of HSPA language arts and mathematics scores to enrolling in college with adjustment for high school type, gender,

race/ethnicity, economic disadvantage (eligibility for free and reduced lunch), special education, and graduation cohort.

The analyses (**Table B.13**) showed the relationship between HSPA scores an attending any college was linear and that every 10 point increase in the language arts score was associated with a 13% increase in the likelihood of enrolling in a college (2-year or 4-year); the comparable relationship for mathematics was 8%. In the case of attending a 4-year college, a 10 point increase in the language arts score was associated with a 21% increase in the likelihood of enrolling at a 4-year college, and a 10 point increase in the mathematics score was associated with 19% increase in enrollment in a 4-year college (**Table B.15**).

As indicated above in **Figure 14** and **Figure 15**, the relationships between HSPA scores and enrollment in 2-year colleges were non-linear (**Table B.14**). With each increase in the mathematics score, there was an accelerating tendency to not enroll in a 2-year college. In the case of language arts, increases in HSPA scores from 100 to approximately 175 points were associated with increased rates of enrollment in community colleges. Above this point, rates of enrollment in 4-year colleges accelerated (**Figure 16**).

Figure 16. Relationship of HSPA scores to enrollment in a 2-year college. Hazard ratios are adjusted for gender, race/ethnicity, economic disadvantage, special education, and graduation cohort.



Figures 17, 18 and **19** summarize the results of other HSPA survival analyses (**Table B.7** through **Table B.12**). The figures are "translated" versions of the Cox proportional hazards models and indicate the percent increase or decrease in rates of going to college as compared to the reference group. All these values are adjusted for the gender/race/ethnicity categories, economic disadvantage, special education, and graduation cohort. In other words, the results show the effects of HSPA performance as if these other influences were "subtracted."

Figure 17. Mode of graduation and the adjusted likelihood of enrolling in college as compared to SRA only graduates.

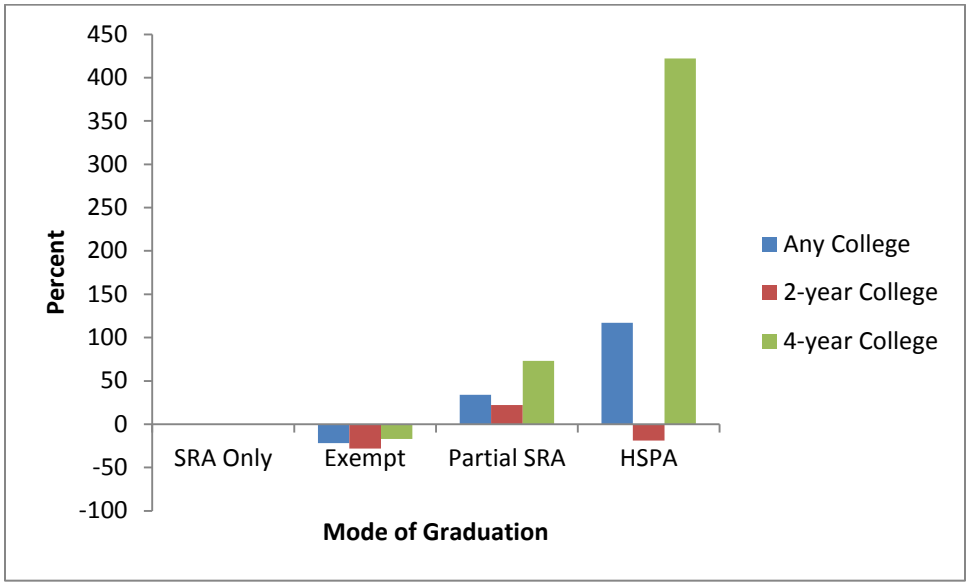


Figure 18. Language arts proficiency and the adjusted likelihood of enrolling in college as compared to partially proficient in language arts.

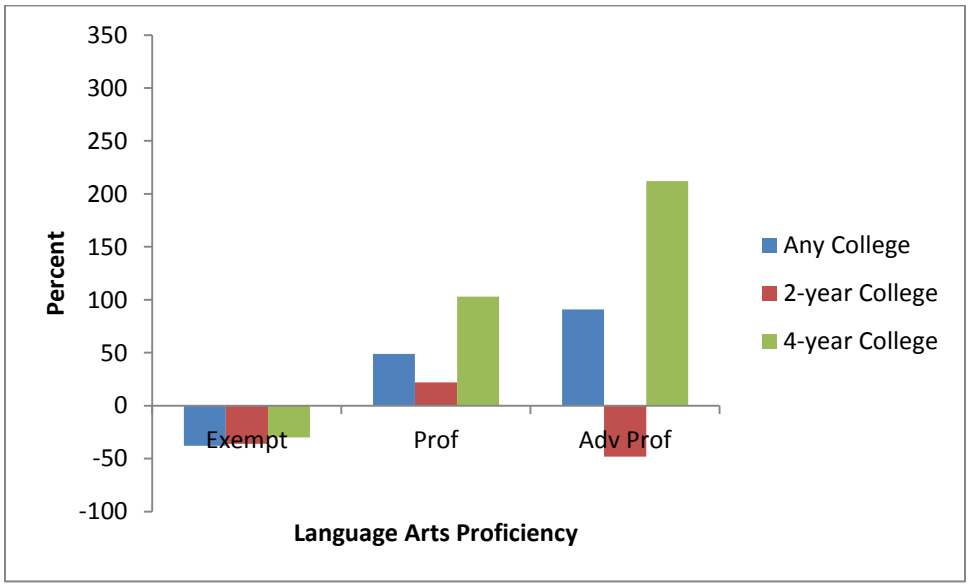


Figure 19. Mathematics proficiency and the adjusted likelihood of enrolling in college as compared to partially proficient in mathematics.

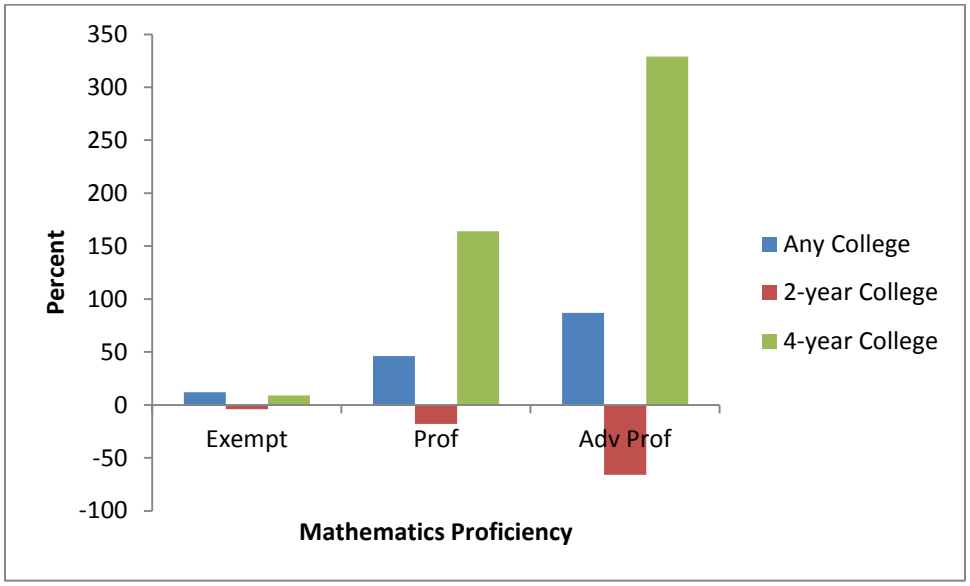


Figure 17 (**Table B.7** through **B.9**) shows exempt high school graduates were less likely to attend college than SRA graduates (there reference group). The partial SRA graduates were nearly 50% more likely to attend college than SRA alone high school graduates, and 73% more likely to attend a 4-year college. HSPA graduates were much more likely to attend a 4-year college than the SRA graduates (more than 5 times greater), and were less likely to attend a 2-year college (19% less likely).

Figure 18 and **19** (**Table B.10** through **B.12**)provide additional detail by breaking out HSPA performance on the language arts and mathematics portions of the examination. The two figures show substantial increases in college enrollments among proficient students as compared to partially proficient graduates. The analyses show students who were proficient in mathematics were more than twice as likely to attend a 4-year college, and were less likely to attend a 2-year college that students who were partially proficient mathematics. And, language arts proficiency was associated with increased rates of attending college at both 2-year and 4-year schools.

Figures 18 and **19** also show students who were advanced proficient in language arts and mathematics were much more likely to attend a 4-year college than SRA graduates. Students who were advanced proficient in mathematics were more than 4 times as likely to attend a 4-year college as SRA graduates, and advanced proficient students in language arts were more than 3 times as likely to attend a 4-year college. And, proficient students were much less likely to attend a 2-year college.

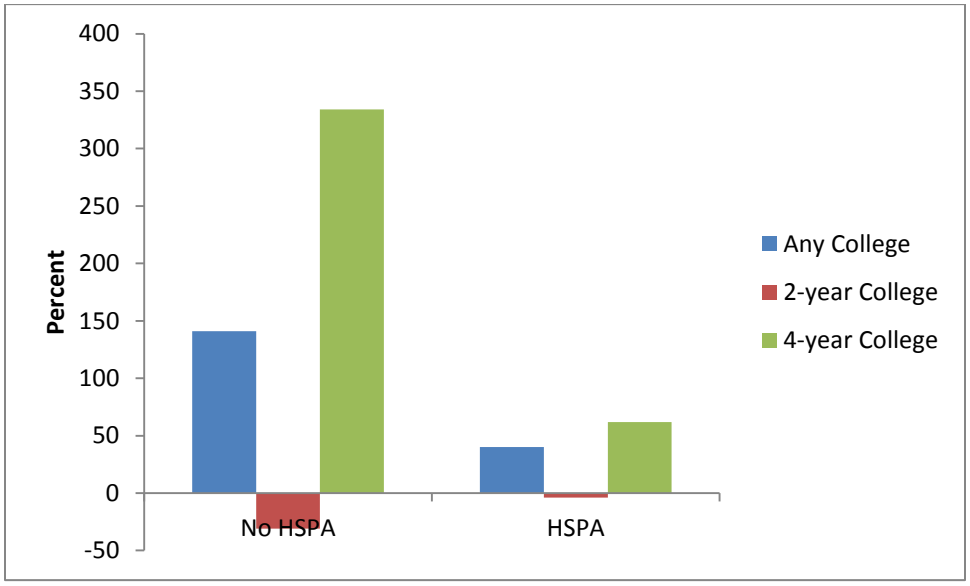
In summary, performance on the HSPA examination is a strong predictor of whether a student will attend college. The higher the HSPA scores, the greater odds that the student will attend college—especially a 4-year college.

6.6.2.2 Type of High School

This section examines adjusted rates of going to college by high school type. All models were adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort. One set of models controlled for the HSPA scores, and the other did not.

Figure 20 (**Tables B.1, B.2, B.3, B.13, B.14, B.15**) shows graduates of magnet schools were less likely to attend a 2-year college (14% less likely when not adjusting for HSPA scores). With adjustment for HSPA scores, magnet school graduates were equal to comprehensive graduates in attending 2-year colleges. **Figure 20** also shows magnet graduates were much more likely to attend a 4-year college than graduates of comprehensive high schools (more than 4 times as likely when unadjusted for HSPA scores). When HSPA scores were considered, the effect of attending a magnet high schools fell from a 434% advantage to just 63%. This result shows much of the advantage of graduating from magnet is due to higher HSPA scores. However, graduates of magnet high schools were still more likely to attend college than graduates of comprehensive high school, even taking HSPA scores into account, which suggests some "value added" by magnets, which might be due to factors such as greater college orientation by its graduates or the benefits of high school representation during the admissions process.

Figure 20. The influence of attending a magnet high school on enrollment in college (comprehensive high school is the reference category).



Tables B.4 through **B.6** and **B.19** through **B.21** show values for the specific comprehensive and magnet high schools.

6.6.2.3 Gender/Race/Ethnicity

Figures 21 (**Tables B.1** through **B.3**) and **22** (**Tables B.16** through **B.18**) show the adjusted rates of going to college for two sets of models: models that adjust for HSPA scores and those that do not. All models are adjusted for economic disadvantage, special education, type of high school, and graduation year.

Figure 21 shows the adjusted rates of going to college as compared to the reference category, black females. The values are not adjusted for HSPA scores. The results show Hispanic females were 22% more likely to attend a 2-year college than black females, but were much less likely to go to a 4-year college than black females (41% less likely). The figure also shows white females, black males, Hispanic males, and white males were all less likely to attend college than black females. White and Hispanic males were approximately half as likely to attend a 4-year college as black females. All these results for attending any college were statistically significant. For attending a 2-year college, Hispanic males were not statistically significant from black females. And, white females were not statistically different from black females in attending 4-year colleges.

Figure 22 shows the same analyses, but with adjustment for HSPA scores. The reader will note that the effects of the gender/race/ethnicity categories on attending a 2-year college were weakened slightly when adjusting for HSPA scores. In the case of attending a 4-year college, the effects of gender/race/ethnicity were weakened or unchanged when adjusting for HSPA scores—except in the case of white students. The analyses show both white males and females were much less likely to attend a 4-year college than black female students of equivalent academic performance as measured by the HSPA examination. For going to any college, and going to a 4-year college, all these results were statistically significant. In the case of going to a 2-year college, only black males and Hispanic females differed from black females.

In summary, the results show most gender/race/categories went to college at rates lower than would be expected given their HSPA performance. The one exception is Hispanic females, who more likely to attend 2-year colleges than other groups.

Figure 21. Gender/Race/Ethnicity categories and enrollment in college (not adjusted for HSPA scores)

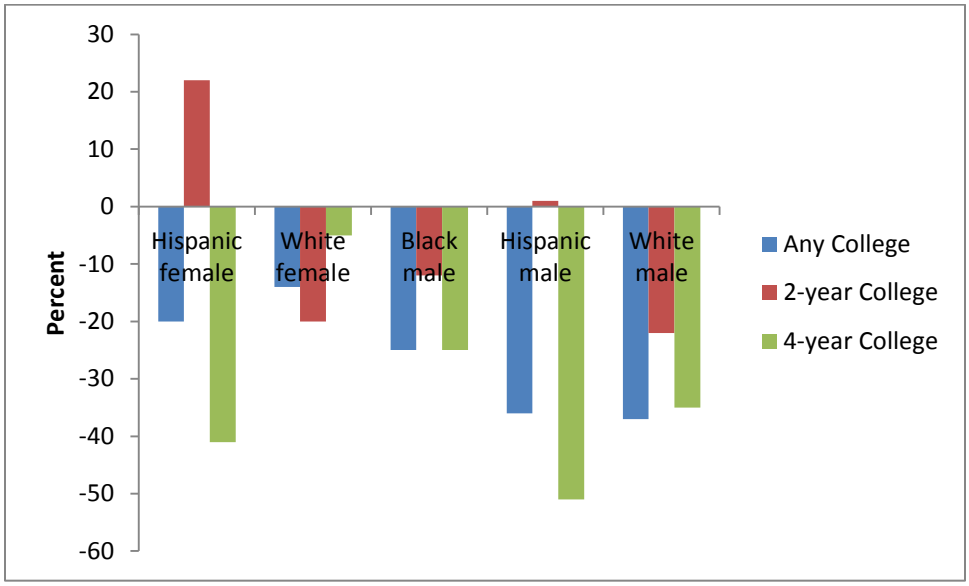
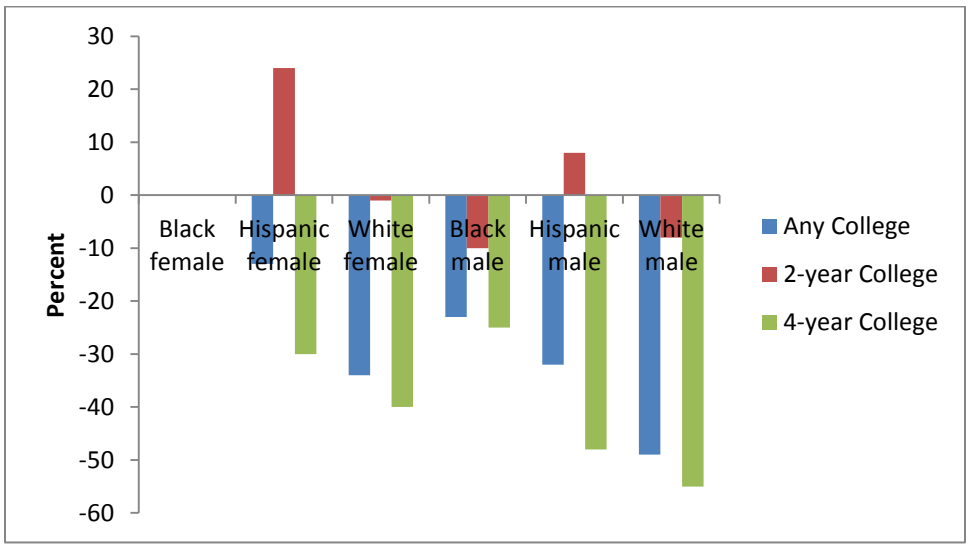


Figure 22. Gender/Race/Ethnicity categories and enrollment in college (adjusted for HSPA scores)



6.6.2.4 Economic Disadvantage

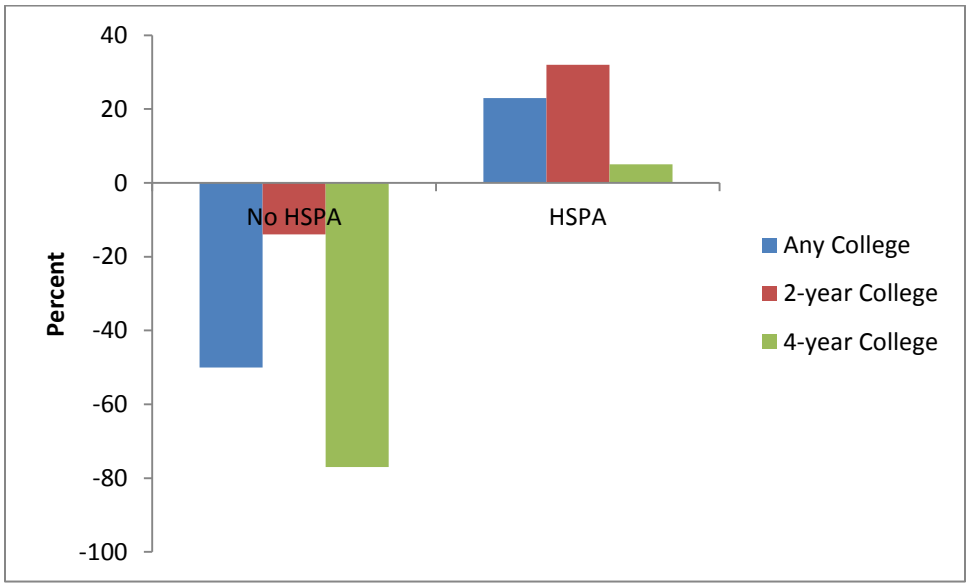
"Economic disadvantage" is an indicator of poverty that is defined by the State of New Jersey (and others) as being eligible for free or reduced school lunch. In all of our Cox proportional hazards models, we adjusted for "economic disadvantage." However, in none of our models was this measure statistically related to attending college. This might be interpreted as meaning that poverty has no effect on going to college—at least in Newark. However, a more likely explanation is that "economic disadvantage" is a terribly crude measure of poverty. First, nearly all families in Newark

are poor by any objective standard if rent, heat and other expenses are considered. Additionally, the "economic disadvantage" measure conflates eligibility for free lunch (families fall below 130% of the poverty level) with eligibility for reduced price lunch (families fall between 130% and 184% of the poverty level). We have little doubt that a more sensitive measure would show an effect of poverty on going to college. However, our results show no effect of "economic disadvantage."

6.6.2.5 Special Education

In this report, special education status is when a student was reported as having taken special education courses at least once. The reader should be aware that the "special education" category covers a broad range of disabilities—not all of them cognitive. In all of our Cox proportional hazards models, special education status was included as a covariate. **Figure 23** (**Tables B.1**, **B.2**, **B.3**, **B.16**, **B.17**, **B.18**) compares the rates at which special education students attended college vs. regular students. The figure shows special education students were less likely to attend any college ($p<0.0001$), to attend a 2-year college ($p=0.0306$), and to attend a 4-year college ($p<0.0001$) when not considering HSPA performance. However, when HSPA performance is taken into account, special education students were actually more likely to attend a 2-year college than regular students ($p=0.0013$). These results suggest that when special education students have the academic capacity to go to college, they do so at higher rates that other students—generally to 2-year colleges.

Figure 23. Special education students and enrollment in college.



6.6.2.6 Year of Graduation

The reader will recall that the multivariate analyses were restricted to high school graduates from the years 2004 through 2007. The "translated" multivariate analyses are presented in **Figures 24** (**Tables B.1** through **B.3**) and **25** (**Tables B.16 through B.18**). **Figure 24** shows rates of enrollment in 4-year colleges increased substantially between 2004 and 2007, and to a much lesser degree in 2-year colleges. The 4-year result was highly statistically significant, and the 2-year result was not. These results are unadjusted for HSPA scores.

Figure 25 shows the values with adjustment for HSPA scores. The results show a statistically significant increase in going to any college in 2007 as compared to 2004 (p=0.0001). This was due to an increase in attending 2-year colleges in 2007 (p=0.0359). No difference was seen in attending 4-year colleges.

Figure 24. Graduation cohort and enrollment in college (not adjusted for HSPA scores)

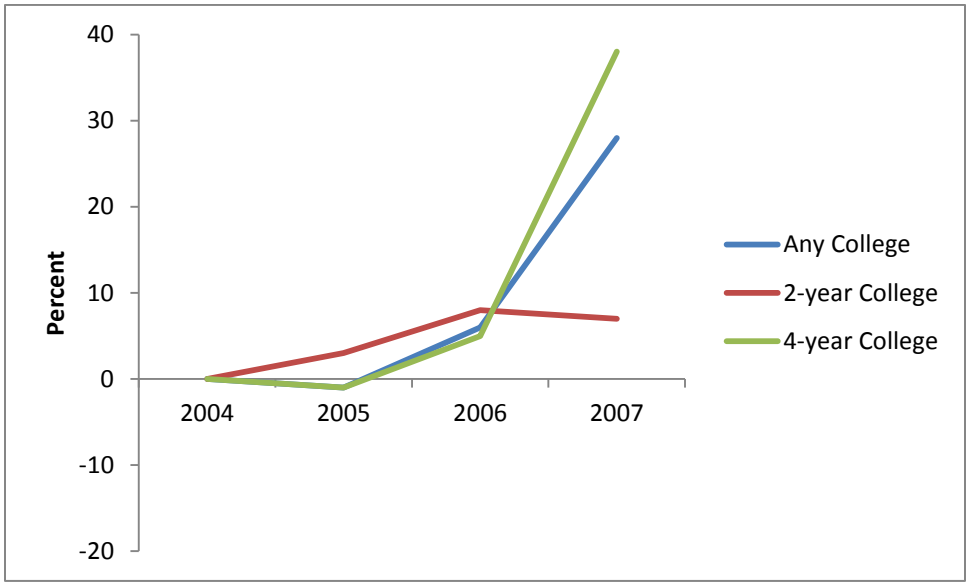
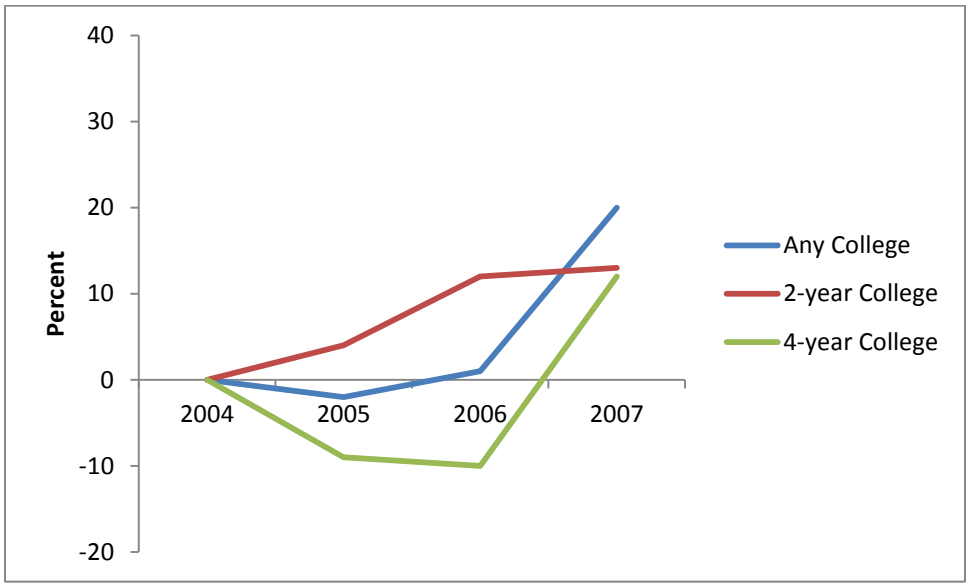


Figure 25. Graduation cohort and enrollment in college (adjusted for HSPA scores)



6.6.3 Summary of Factors That Influence Going to College

Our analyses for the 2004 through 2007 graduation cohorts show important effects of gender/race/ethnicity on the likelihood of going to college. When it comes to community college, NPS graduates tend to enroll in community colleges at approximately equal rates regardless of

gender/ethnicity. However, the situation is quite different when it comes to enrollment in 4-year colleges. Black females were the most likely to attend a 4-year college. White females were equally likely to attend a 4-year college, but where much less likely to attend a 4-year college as black female student of equivalent performance on the HSPA examination. Hispanic females were less likely to attend a 4-year college and more likely to attend a 2-year college than black females.

In general, males were much less likely to attend college than black females. Black males were 25% less likely to attend a 4-year college than black females with equivalent HSPA scores. And, Hispanic males were 48% less likely to go to a 4-year college than black females with equivalent academic backgrounds. White males were 35% less likely to attend a 4-year college than black females, and with adjustment for HSPA scores were 55% less likely. As with white females, this suggests that many of these students are not going to 4-year colleges even when they may be capable of doing so.

The results show no influence of free or reduced lunch status ("economically disadvantaged") on going to college. [However, the reader should note that this measure is an extremely crude measure of economic status, and that essentially all students in the NPS are low income.] The analyses also show that with adjustment for HSPA scores, high school enrollment in special education classes was associated with increased rates of enrollment in college; this result was because of higher enrollments in 2-year colleges, but not in 4-year colleges.

7 Earning a College Degree: The Proportion of All High School Graduates

The purpose of matriculating in a college or university is, of course, to earn a degree. This section examines where NPS graduates attain college degrees, and at what rates. These analyses are for all students who graduated from high school. A subsequent section (*Earning a College Degree: The Proportion of Students Who Went to College*) examines earning a college degree among those students who went to college ("persistence").

7.1 From Which Colleges and Universities Do NPS Graduates Earn Degrees?

Table 13 shows the principal colleges and universities that conferred degrees to NPS graduates from 2004 to 2011. The largest number of degrees were conferred by Essex County College (ECC)(n=244): ECC conferred more than 3 out of 4 associate degrees. Another 12.9% of associate degrees were conferred by other northern New Jersey community colleges (Union County College, Hudson County Community College, Bergen Community College, and Middlesex County College). Rutgers University's Newark and New Brunswick campuses were the principal sources of bachelor's degrees, providing nearly 3 in 10 degrees. Montclair State and Kean Universities provided another 2 of 10 bachelor's degrees. Half of bachelor's degrees were conferred by Rutgers University, Montclair State University, and Kean University combined.

Table 13. Colleges and universities where NPS graduates earned degrees

	Bachelor Degree (n=755)		Associate Degree (n=317)	
Rank	*Institution*	*%*	*Institution*	*%*
1	Rutgers - Newark	14.4	Essex County College	77.0
2	Rutgers – New Brunswick	13.6	Union County College	6.3
3	Montclair State University	11.9	Hudson County Community College	2.8
4	Kean University	9.4	Bergen Community College	2.5
5	William Patterson	5.6	Middlesex County College	1.3
6	New Jersey City University	4.5	All others (24 schools)	10.1
7	Fairleigh Dickinson	3.8		
8	NJIT	2.9		
9	College of New Jersey	2.6		
10	Seton Hall University	2.6		
11	Ramapo College	2.1		
12	Temple University	1.6		
13	Pennsylvania State Univ.	1.3		
14	Howard University	1.2		
15	St. Peters College	1.1		
	All others (87 schools)	19.9		

7.2 Earning a College Degree: The Proportion of Students Who Graduated from High School

From the 2004 through 2009 cohorts, 1111 graduates earned a college degree of some sort. Of these, 316 or 28.4% received an associate degree. Another 761 or 68.5% earned a bachelor's degree. A small number (34 or 3.1%) earned a graduate degree. The magnet high schools were the largest contributor of bachelor's degrees (64.3%), while the comprehensive high schools were the largest source of associate degrees (62.3%).

Table 14 shows the degrees attained by specific graduation cohort. As would be expected, graduates from recent cohorts have not yet had time to earn a college degree. The 2004 NPS graduation cohort, with the greatest opportunity to earn a college degree because of the number of years since graduation, saw 15.1% of its graduates earn a post-secondary degree—nearly 80% of these were bachelor's degrees. Relatively few 2004 graduates, just 4.3%, earned an associate degree. Presented differently, a bachelor's degree was 3.5 times more likely to be earned than an associate degree for 2004 NPS graduates.

Table 14. Percentage of NPS graduates who earned a degree or certificate by graduation cohort

Cohort	N	Any Degree (%)	Associate (%)	Bachelors (%)	Masters/JD (%)
2004	1,947	15.1	4.3	11.8	1.1
2005	2,001	14.0	3.3	11.1	0.5
2006	2,139	10.8	2.7	8.3	0.2
2007	2,207	7.4	2.3	5.3	0.0
2008	2,342	1.8	1.5	0.3	0.0
2009	2,467	1.0	1.0	0.0	0.0
2010	2,311	0.0	0.0	0.0	0.0
2011	2,085	0.0	0.0	0.0	0.0
All years	17,503	6.0	1.8	4.4	0.2

Table 15 shows the degrees that were earned by type of high school. For the 2004 cohort, graduates of the magnet high schools were 4 times as likely to earn a degree than those from comprehensive high schools. Graduates of magnet high schools were even more likely to have earned a bachelor's degree (4.5 times as likely as comprehensive graduates). Magnet high school graduates were also much more likely to earn an associate degree (2.5 times more likely than comprehensive graduates), despite being much less likely to matriculate in a 2-year school.

Table 15. Percentage of NPS graduates who earned a degree by magnet and comprehensive high schools, and by graduation cohort

	Magnet HS				Comprehensive HS			
Cohort	*N*	*Any degree*	*Associate*	*Bachelors*	*N*	*Any degree*	*Associate*	*Bachelors*
2004	465	35.3	8.2	29.0	1,482	8.8	3.1	6.4
2005	454	36.3	5.1	31.7	1,547	7.4	2.8	5.0
2006	532	26.5	3.8	23.3	1,607	5.5	2.4	3.4
2007	535	17.0	2.6	14.6	1,672	4.4	2.2	2.8
2008	511	3.5	2.7	0.8	1,831	1.4	1.2	0.2
2009	521	1.9	1.9	0.0	1,839	0.8	0.7	0.0
2010	592	0.0	0.0	0.0	1,559	0.0	0.1	0.0
2011	567	0.0	0.0	0.0	1,253	0.0	0.0	0.0
All years	4,177	14.1	2.8	11.6	12,790	3.5	1.6	2.1

Table 16 shows the proportion of degrees from the combined 2004 and 2005 cohorts by specific high school. Science High School, a magnet school, had the greatest proportion of degrees, with over half of its graduates earning a degree; the great majority of these were bachelor's degrees. Arts and University High Schools, also magnet schools, followed Science High School with about a third of students earning a degree. Among the comprehensive high schools, East Side High School was most successful in having graduates who earned a degree, while Shabazz High School was least successful.

Table 16. Percentage of NPS graduates from combined graduating classes of 2004 and 2005 that attained a post-secondary degree

High School	N	Any Degree (%)	Associate (%)	Bachelors (%)
Comprehensive High Schools				
Barringer HS	627	5.7	2.9	3.0
Central HS	400	9.0	3.8	6.0
East Side HS	689	12.3	4.9	9.0
Shabazz HS	488	4.5	1.4	3.1
Weequahic HS	343	6.1	1.8	4.4
West Side HS	482	9.3	1.9	7.9
Magnet High Schools				
Arts HS	215	31.2	8.4	23.7
Science HS	248	54.8	6.4	50.8
Technology HS	258	20.9	8.1	14.0
University HS	198	36.4	3.0	33.3

In summary, NPS students were much more likely to earn a bachelor's degree than an associate degree, and graduates of magnet high schools were much more likely to earn either a bachelor's or associate degree than graduates of comprehensive high schools. *However, the reader should note that even*

the values for the 2004 cohort are likely to significantly underestimate the number of degrees that will ultimately be earned by these NPS graduates given enough time.

7.3 What Factors Influence Earning a College Degree

This section presents information on factors that influence earning a college degree among all students who graduated from high school in 2004 through 2007. The reader should note that the following results are an outcome of two processes: 1) enrolling in a college (covered in the prior section), and 2) progressing in college to earn a college degree.

7.3.1 Degree Attainment and Performance on the HSPA Examination

This subsection examines the relationship of HSPA scores to earning a college degree. **Figures 26** and **27** show the unadjusted relationship between HSPA scores and earning a college degree**.** **Figure 26** shows students who had very low language arts scores were very unlikely to earn a college degree. The figure also shows how relatively unlikely it is for graduating students to earn a 2-year college degree—regardless of HSPA language arts scores.]This is due in part to the transfer of 2-year college students to 4-year colleges.] The figure also shows earning a 4-year degree begins to accelerate with language arts scores above 200 (the HSPA cutoff for proficiency). The figure shows more than 35% of students in the top levels of language arts performance earned a 4-year college degree.

Figure 26. The relationship of HSPA language arts scores to degree attainment (n=7,444)

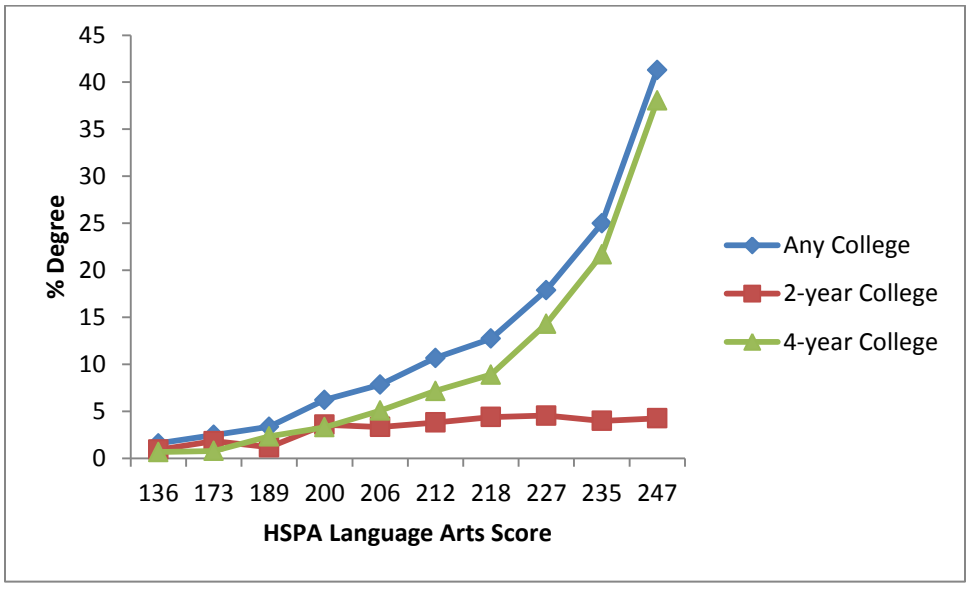


Figure 27 shows the relationship of the HSPA mathematics score to earning a college degree, which is generally similar to that seen for language arts. Again, high mathematics scores are associated with relatively high levels of earning a 4-year college degree. The analyses show low mathematics scores predict little likelihood of earning any college degree.

Figure 27. The relationship of HSPA mathematics scores to degree attainment (n=7,444)

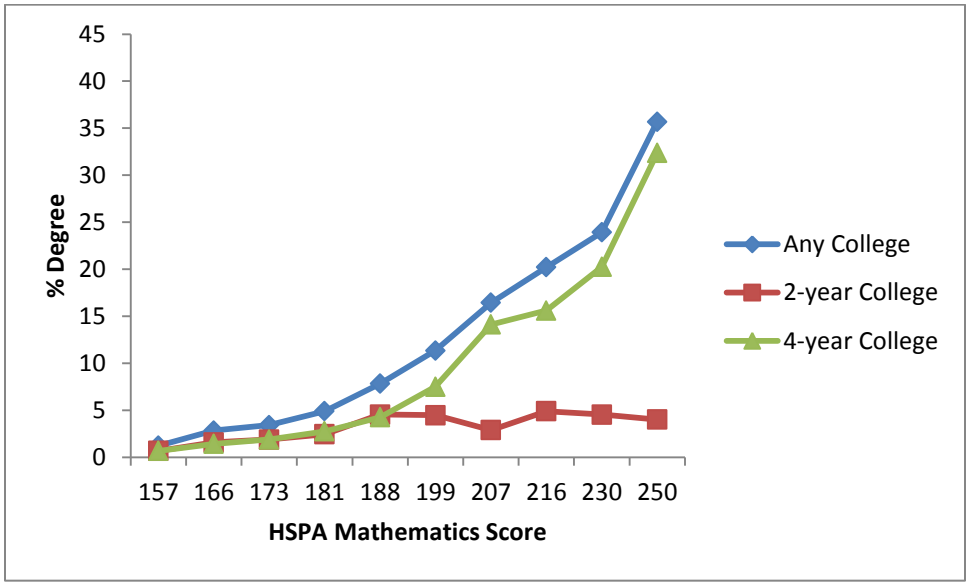


Figure 28 (**Tables C.7** through **C.9**) shows the adjusted likelihood of earning a college degree by different modes of high school graduation. Using SRA only as the comparison group, the figure shows partial SRA graduates were almost twice as likely to earn a college degree as SRA only graduates. This was true for both 2-year and 4-year degrees. Students who passed both parts of the HSPA exam were more than 5 times as likely to earn any college degree, twice as likely to earn a 2-year degree, and 8 times as likely to earn a 4-year degree.

Figure 28. Mode of graduation and the adjusted likelihood of earning a college degree as compared to SRA only graduates.

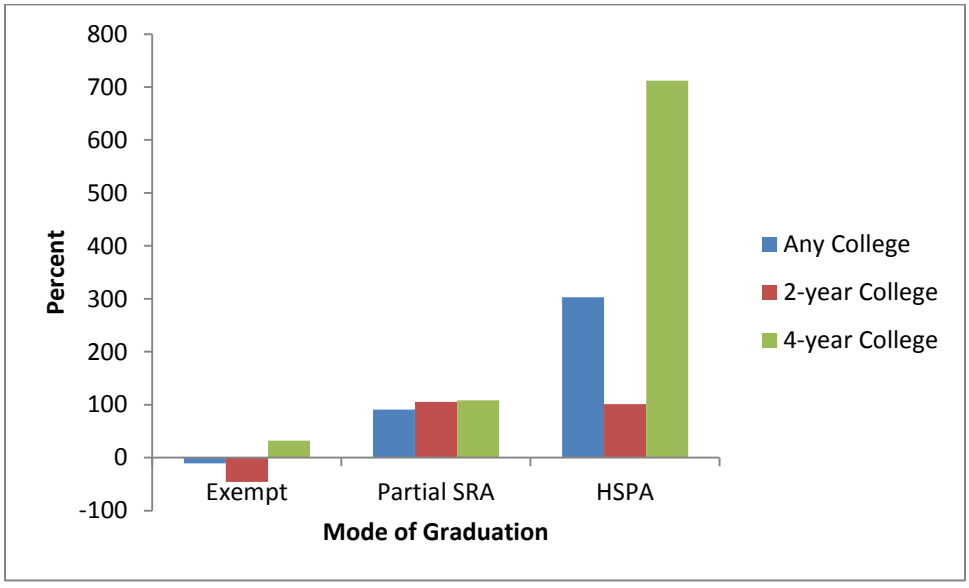


Figure 29. Proficiency on the language arts portion of the HSPA examination and the adjusted likelihood of attending college or university as compared to partial proficient students.

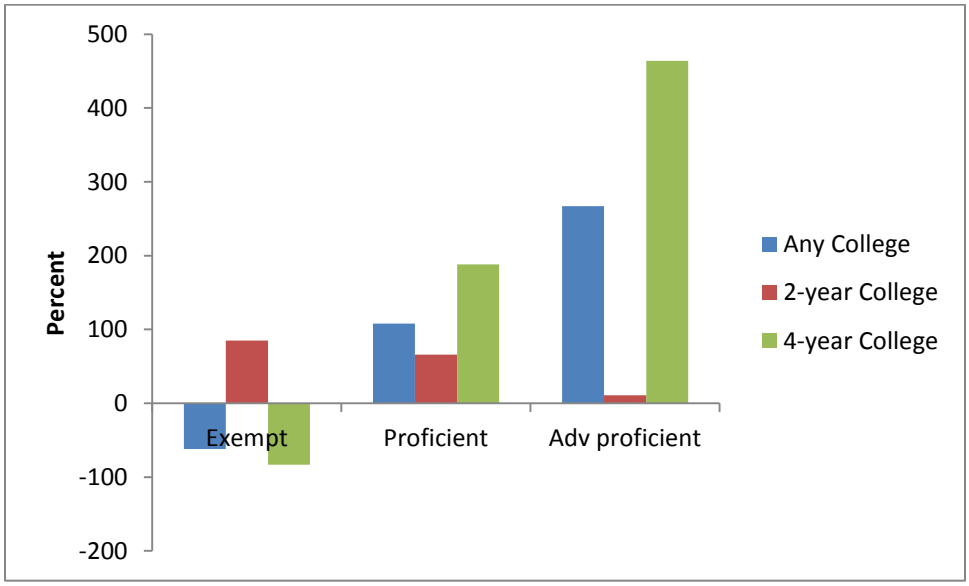
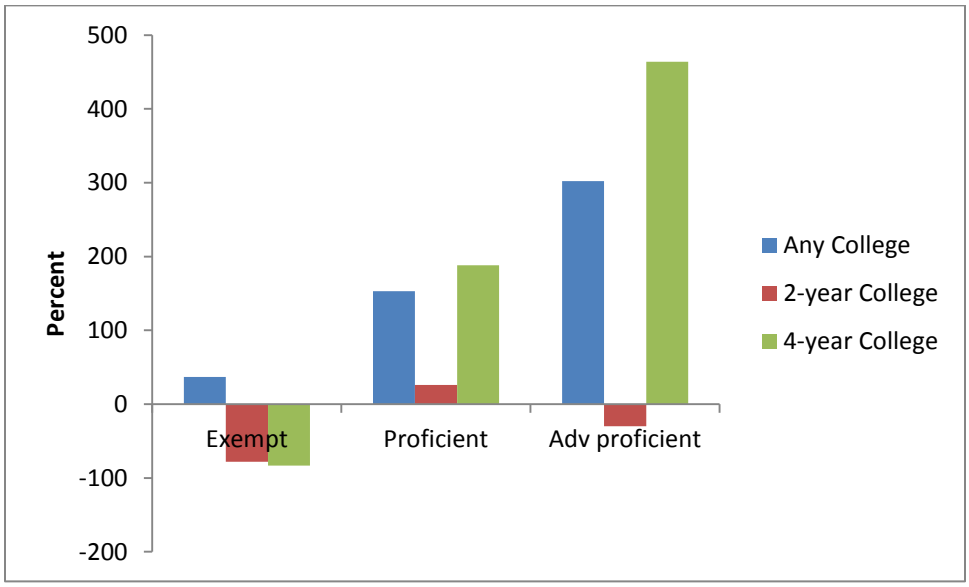


Figure 30. Proficiency on the mathematics portion of the HSPA examination and the adjusted likelihood of attending college or university as compared to partial proficient students.



Figures 29 and **30** (**Tables C.10** through **C.12**) provide a bit more detail by looking at proficient levels in language arts and mathematics. Students who were proficient in language arts were twice as likely to earn a college degree as a student who was partially proficient, and students who were advanced proficient in language arts were 3.7 times as likely to earn a college degree (**Figure 29**). The effect of mathematics proficiency was even greater (**Figure 30**). In the case of earning a 2-year degree, HSPA proficiency bears little relationship. However, the effects of HSPA proficiency on

earning a 4-year degree are considerable. If a student were proficient in both language arts and mathematics, the student would be nearly 6 times as likely to earn a 4-year degree as a student who was non-proficient in both. A student who was advanced proficient in both would be more than 11 times as likely to earn a 4-year degree.

In summary, a student's performance on the HSPA examination is a powerful predictor of earning a college degree.

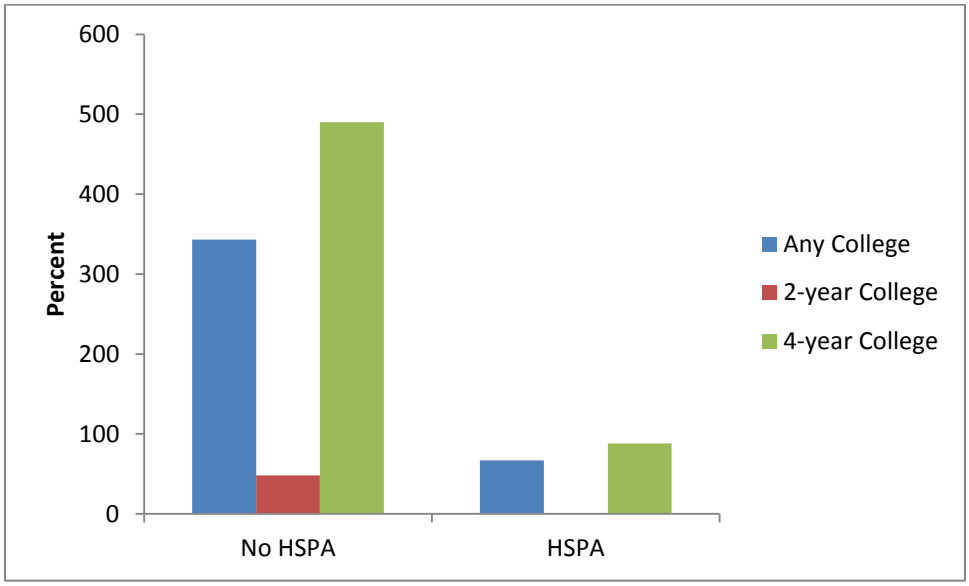
7.3.2 Multivariate Analyses: Factors that Influence Earning a College Degree

7.3.2.1 High School Type

The type of high school (comprehensive vs. magnet) that the student attended was a very strong predictor of earning a college degree. **Figure 31** (**Tables C.1** through **C.3** and **C.13** through **C.15**) shows the additional likelihood of earning a degree as compared to graduates of comprehensive high schools. First, the influence of magnet vs. comprehensive high school has a profound influence on whether a student earns a college degree. Students who attended a magnet high school were more than 4 times as likely to earn a college degree than those who attended a comprehensive high school. However, when the influence of HSPA scores is considered, this drops to a 67% increase. This means that the bulk of the effect of magnet schools on degree attainment is due to higher scoring on the HSPA examination. Nevertheless, having an attended a magnet school still confers a considerable advantage in earning a college degree, independent of HSPA scores, which is likely due to a range of factors, including educational "value added" (better instruction, peers, study habits, etc.), greater college orientation, reputation of the high school when applying to colleges, and also other unmeasured features of the student such as parental support and aspirations.

Figure 31 also provides the adjusted effect of high school type on 2-year and 4-year degrees. Unadjusted for HSPA scores, students who graduated from the magnet high schools were almost 50% more likely to earn a 2-year degree than comprehensive graduates, and nearly 500% more likely to earn a 4-year degree. However, with adjustment for HSPA scores, magnet and comprehensive high school students were not statistically different in their rates of earning a 2-year degree. The reader will note that the meaning of this result is complicated by the fact that many students transfer from 2-year to 4-year institutions before earning a 2-year degree. Lastly, magnet students were 88% more likely to earn a 4-year degree than comprehensive students when the effects of HSPA scores are considered.

Figure 31. The relationship of high school type to earning a college degree with adjustment for gender, ethnicity, economic disadvantage, special education, and graduation cohort. Additionally, one set of models adjusts for mathematics and language arts HSPA scores and the other does not.



7.3.2.2 Gender/Race/Ethnicity Categories

Figure 32 (**Tables C.1** through **C.3**) shows the gender/race/ethnicity disparities in earning a college degree. The analyses used black females as the reference group. The figure shows white females were much more than twice as likely to earn a college degree as black females. Hispanic females were also more likely to earn a 2-year degree, but were no more likely to earn a 4-year degree. And, white males were also more likely to earn a 2-year degree than Black females, but were no more likely to earn a 4-year college degree. Black and Hispanic males were no less likely that Black females to earn a 2-year college degree, but were much less likely than Black females to earn a 4-year college degree.

Figure 33 (**Tables C.16** through **C.18**) this time shows the gender/race/ethnicity results with adjustment for HSPA scores. The figure shows an important reduction in the size of the gender/race/ethnicity effects on earning a college degree. **Figure 33** can be interpreted as the effect of gender/race/ethnicity after "subtracting" the effect of academic achievement as measured by the HSPA. The results show white females were 55% more likely to earn any college degree, twice as likely to earn a 2-year degree, and 43% more likely to earn a 4-year degree than black female students. Hispanic females were also twice as likely as black female students to earn a 2-year degree. All the male groups were less likely to earn a 4-year degree—even with comparable HSPA scores, and black and Hispanic males were less likely than black females to earn any college degree.

Table 17. Gender/Race/Ethnicity categories and enrollment in college (not adjusted for HSPA scores)

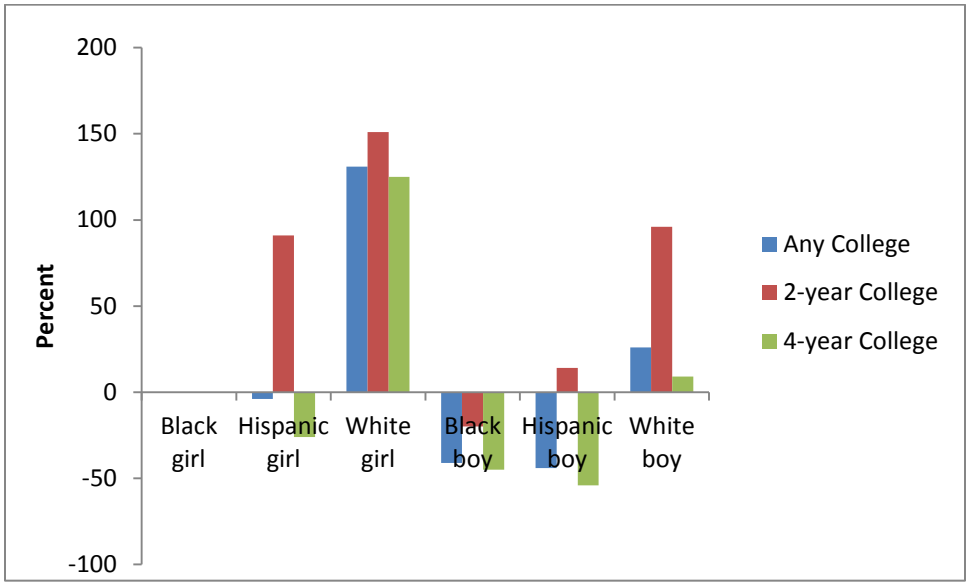
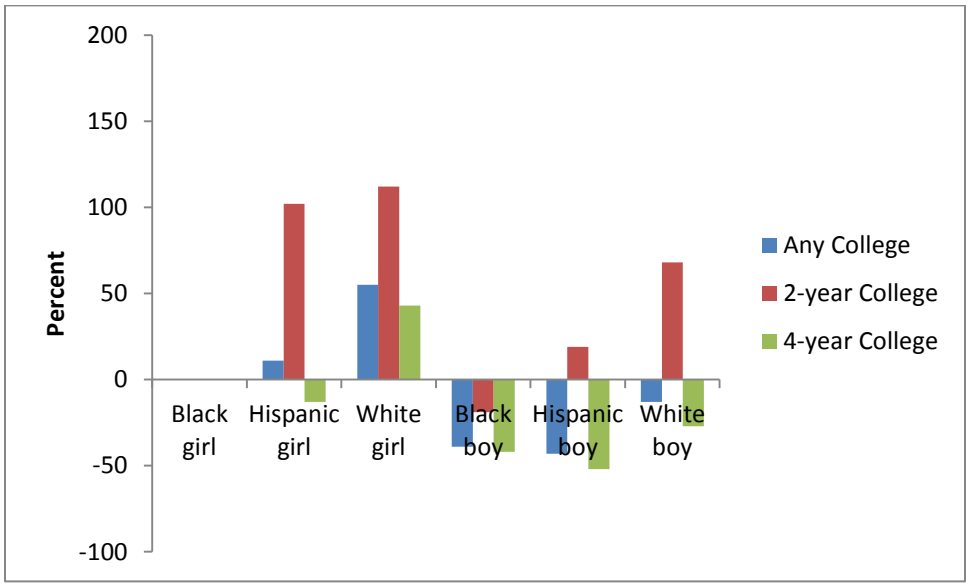


Table 18. Gender/Race/Ethnicity categories and enrollment in college (adjusted for HSPA scores)



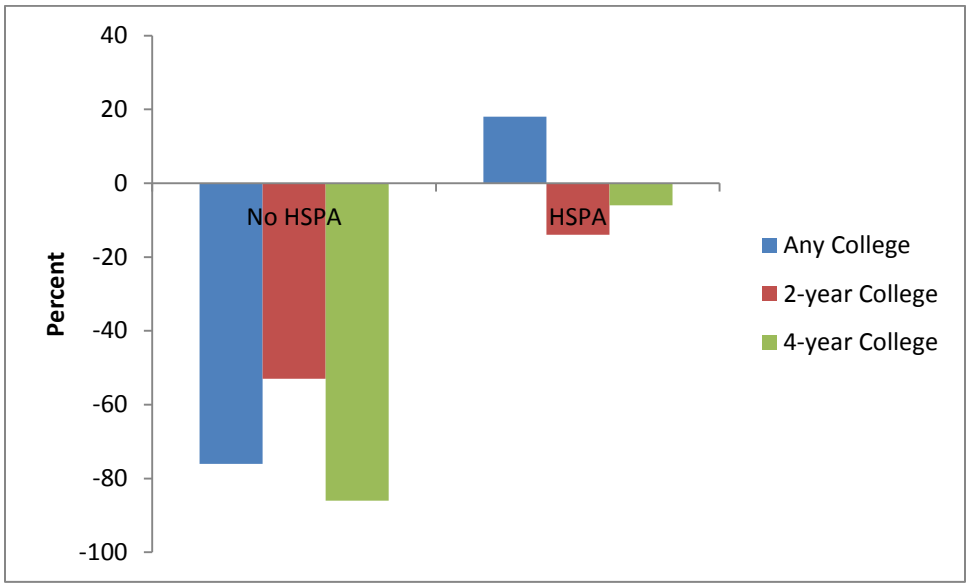
7.3.2.3 Economic Disadvantage

In the prior college enrollment analyses, we saw no statistical effect of "economic disadvantage" (eligibility for free or reduced school lunch) on rates of high school graduates earning a college degree. We again saw the same results (or lack of results): economic disadvantage was unrelated to earning a college degree.

7.3.2.4 Special Education

Figure 34 shows the adjusted increased risk of earning a college degree with and without controlling for HSPA scores. The figure shows special education graduates were much less likely to earn a college degree than regular students. When the models contained the HSPA scores, the rates at which special education students earned college degrees was no different than that of regular students. In other words, the lower rates at which special education students earned a college degree is entirely explained by lower HSPA scores.

Figure 32. Special education students and enrollment in college.



7.3.2.5 Year of High School Graduation

The analyses show no effect of graduation year (2004 through 2007) on earning any college degree, whether 2-year or 4-year.

8 Earning a College Degree: The Proportion of Students Who Went to College

The prior section described bachelor and associate degrees as a proportion of all NPS graduates, which provides a picture of NPS's performance in providing a springboard to higher education. However, the prior set of analyses also conflates the effects of two different processes: a) matriculation in college, and b) staying in college and earning a degree. In contrast, this section describes degree attainment as a proportion of those who matriculated in a college or university. In other words, the following analyses provide a picture of *progression* towards a degree once in enrolled college.

Table 19. The percent of matriculating NPS graduates who attained a degree or certificate (N is number of matriculating students).

	Any Degree		Associate		Bachelor's	
Cohort	N	%	N	%	N	%
2004	1,135	25.5	618	10.5	485	40.8
2005	1,189	23.3	655	7.6	496	40.3
2006	1,266	18.2	687	6.4	563	30.6
2007	1,278	12.5	660	5.2	606	18.8
2008	1,355	3.0	725	4.0	626	1.60
2009	1,323	1.8	709	3.0	614	0.5
2010	1,102	0.1	555	0.0	547	0.2
2011	1,050	0.1	511	0.2	538	0.0
All years	9,698	10.6	5,120	4.8	698	15.6

Table 19 shows one in four of 2004 NPS graduates who matriculated in college had earned a college degree by the spring of 2012. Approximately 1 in 10 of those 2004 graduates who enrolled in 2-year schools earned an associate degree.[2] And, 4 of 10 students who enrolled at a 4-year college earned a 4-year degree. In other words, students who enrolled in 4-year colleges were 4 times as likely to earn a college degree as those who enrolled in 2-year schools.

Table 20 shows the percent of matriculating comprehensive high school graduates who earned a degree from a college. Looking at the 2004 high school graduates, the analyses show 17.0% of matriculating comprehensive high school graduates earned a college degree **Table 20** also shows relatively few comprehensive students who matriculated in 2-year schools earned an associate degree (less than 1 in 10 students for the 2004 cohort). In contrast, 1 in 3 of the matriculating 2004

[2] The reader should note that 2-year figures are potentially misleading, since many students take courses at 2-year institutions with no intention of earning an associate degree.

graduates earned a bachelor's degree. Of the 238 college degrees earned by comprehensive graduates, 57.1% were bachelor's degrees.

Table 20. Percentage of matriculating NPS graduates who attained a degree or certificate: comprehensive high schools

Cohort	Any degree		Associate		Bachelor's	
	N	*%*	*N*	*%*	*N*	*%*
2004	740	17.0	468	8.1	251	29.1
2005	810	13.8	539	6.7	248	25.4
2006	819	10.9	543	5.2	265	19.2
2007	848	8.1	550	5.1	293	12.3
2008	925	2.5	597	3.0	325	1.2
2009	846	1.6	560	2.3	286	0.4
2010	667	0.2	424	0.0	243	0.4
2011	554	0.2	357	0.0	196	0.0
All years	6,209	7.0	4,038	4.0	2,107	10.9

Table 21 shows the percent of matriculating comprehensive high school graduates who earned a degree from a college. Looking at the 2004 high school graduates, the analyses show 17% of matriculating comprehensive high school graduates earned a college degree **Table 21** also shows relatively few students who matriculated in 2-year schools earned an associate degree (about 1 in 5 students for the 2004 cohort). In comparison, more than half (53.4%) of 2004 graduates who attended a 4-year college earned a bachelor's degree. Of the 328 college degrees earned by magnet high school graduates, 79.9% (262) were bachelor's degrees.

Table 21. Percentage of matriculating NPS graduates who attained a degree or certificate: magnet high schools

Cohort	Any degree		Associate		Bachelor's	
	N	*%*	*N*	*%*	*N*	*%*
2004	395	41.3	150	18.0	234	53.4
2005	379	43.5	116	12.1	248	55.2
2006	447	31.8	144	11.1	298	40.6
2007	430	21.2	110	5.4	313	24.9
2008	430	4.2	128	8.6	301	2.0
2009	423	2.4	119	6.7	304	0.7
2010	398	0.0	109	0.0	289	0.0
2011	425	0.0	101	0.0	324	0.0
All years	3,327	17.7	977	8.4	469	20.3

Table 22. Percentage of matriculating NPS graduates from combined graduating classes of 2004 and 2005 who attained a post-secondary degree

	Any Degree		Associate		Bachelor's	
High School	**N**	**%**	**N**	**%**	**N**	**%**
Comprehensive High Schools						
Barringer HS	312	10.6	226	6.6	81	21.0
Central HS	211	17.1	139	8.6	63	27.0
East Side HS	352	22.4	233	12.0	107	37.4
Shabazz HS	234	10.3	149	4.7	77	19.5
Weequahic HS	187	11.2	114	5.3	71	19.7
West Side HS	254	17.7	146	4.1	100	33.0
Magnet High Schools						
Arts HS	181	37.0	69	14.5	104	47.1
Science HS	226	59.3	46	17.4	171	68.4
Technology HS	191	28.8	111	16.2	73	42.5
University HS	176	40.9	40	12.5	134	48.5

Table 22 shows college degrees for the combined 2004 and 2005 cohorts by specific high school. Science High School, a magnet school, had the largest proportion of degrees (nearly 60%); this was followed by two other magnets, University and Arts High schools. Among the comprehensive high schools, students from East Side High School were most successful in attaining degrees, while Barringer and Shabazz High Schools had the smallest proportions of graduates who attained a college degree (around 10%).

8.1.1 Mode of Graduation and Performance on the HSPA Examination

Figure 33 shows the relationship of the HSPA mathematics score to attaining a degree at any college, at a 2-year school, and at a 4-year college or university. The figure shows the HSPA mathematics score had a very strong relationship with earning a 4-year degree once matriculated in college. Among the highest scoring students in mathematics, nearly 40% earned a 4-year degree—and this value likely under-represents the proportion that will ultimately earn a degree because the 2007 cohort has data for just five years post-graduation. The figure also shows a greater likelihood of earning a 2-year degree, but only up to a mathematics score of approximately 190, after which the rate of earning a 2-year degree remains fairly constant. The reader will recall that the New Jersey cutoff for "proficient" is 200.

Figure 34 shows the relationship of the HSPA language arts score to degree attainment. The relationship is very similar to that seen for mathematics except that there is an acceleration in the likelihood of degree attainment as language arts scores go from lower to higher.

Figure 35 (**Tables D.1** through **D.3** and **D.16** through **D.18**) shows the relationship of the mode of high school graduation to earning a college degree. The analyses show passing the HSPA examination was a powerful predictor of earning a college degree. Students who passed the HSPA examination were nearly 300% more likely to earn a college degree, and nearly 500% more likely to

earn a 4-year college degree as compared to those who failed to pass both parts of the HSPA examination. **Figure 35** also shows having passed one part of the HSPA substantially increased the likelihood of earning a college degree. When students passed one part of the HSPA examination, they were twice as likely to earn 2-year and 4-year degrees as those students who failed both parts of the HSPA examination.

Figure 33. The relationship of HSPA mathematics scores to degree attainment (n=7,638).

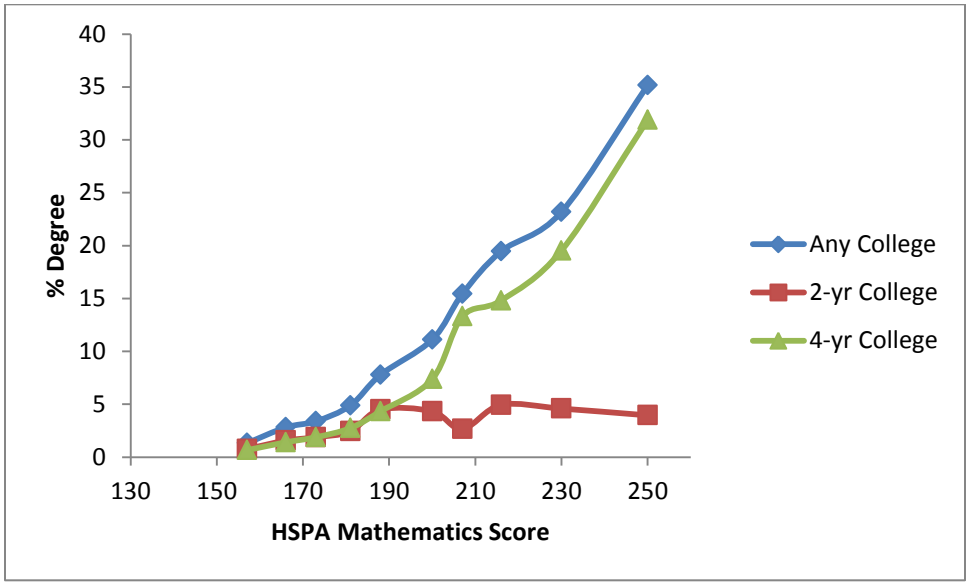


Figure 34. The relationship of HSPA language arts scores to degree attainment (n=7,638).

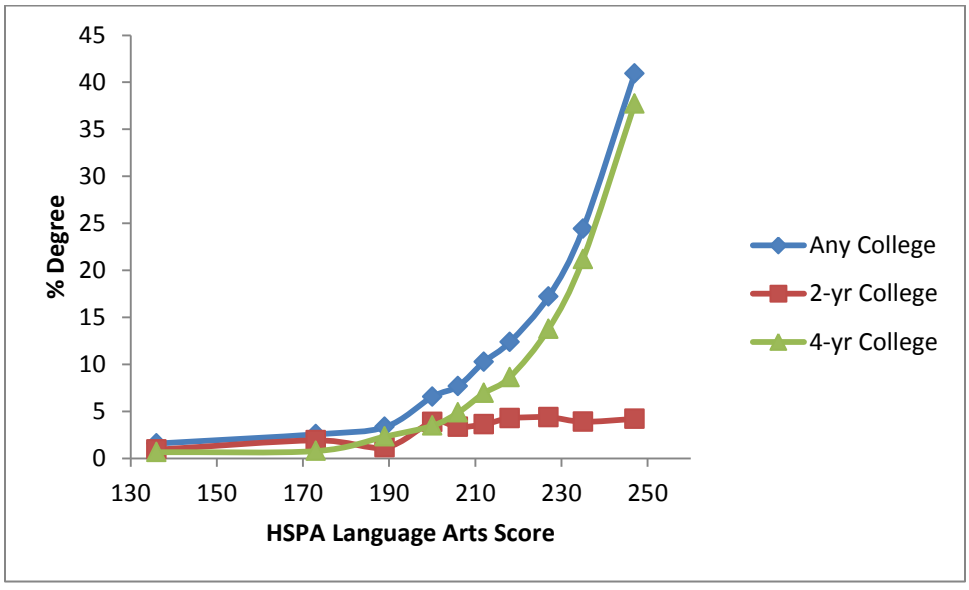
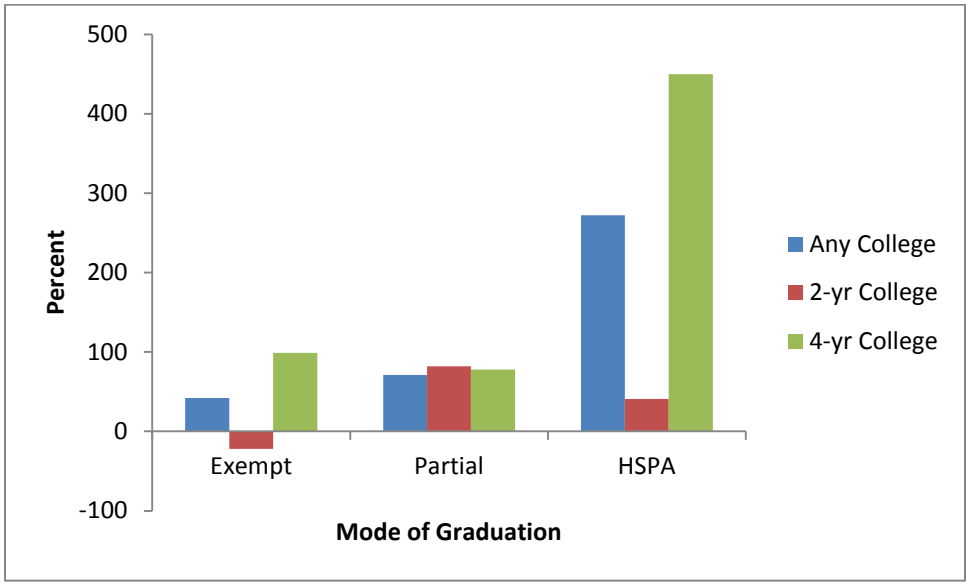


Figure 35. Mode of graduation and the adjusted likelihood of earning a college degree as compared to SRA only graduates.



Figures 36 and **37** (**Tables D.10** through **D.12**) provide more detail about HSPA performance by presenting degree attainment in relationship to levels of language arts and mathematics HSPA proficiency. **Table 36** shows the adjusted relationship of language arts proficiency to earning a college degree. The table shows language arts proficiency (in comparison to partially proficient) was associated with a 65% increase in persisting and earning a college degree, and a 118% increase in earning a 4-year degree. No such effect was seen for earning a 2-year degree. Advanced proficiency in language arts was an even more powerful predictor of success in earning a college degree: a 184% increase in the likelihood of earning a college degree, and a 341% increase in the chance of earning a 4-year degree as compared to partial proficiency in language arts.

Figure 36. Proficiency on the language arts portion of the HSPA examination and the adjusted likelihood of attending college or university as compared to partially proficient students.

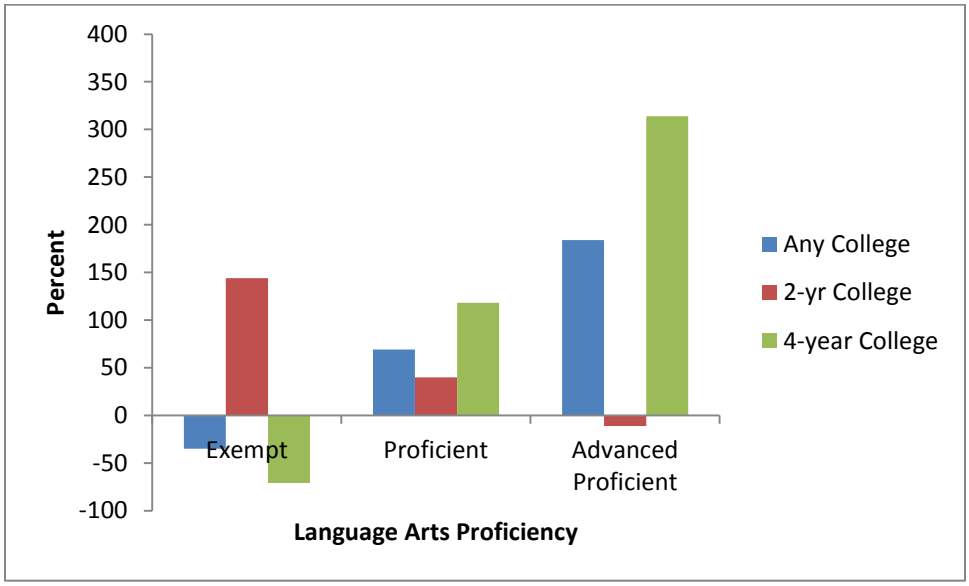


Figure 37. Proficiency on the mathematics portion of the HSPA examination and the adjusted likelihood of attending college or university as compared to partially proficient students.

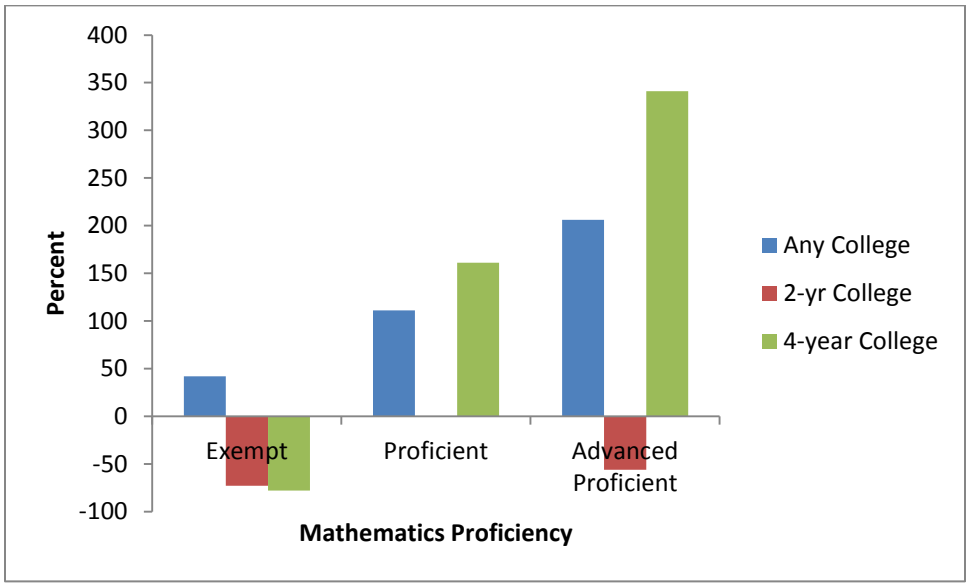


Figure 37 shows the relationship of mathematics proficiency to persisting in college and earning a college degree. The effects of mathematics proficiency were somewhat more powerful than those seen for language arts. In comparison to partial proficiency in mathematics, students who were proficient in language arts were 111% more likely to earn a college degree, and 161% more likely to earn a 4-year degree. As with language arts, proficiency in mathematics was unrelated to persisting and earning a 2-year degree.

Advanced proficiency in mathematics was an even more powerful predictor of earning a college degree. In comparison with students who were partially proficient in mathematics, advanced proficiency students were 206% more likely to earn any college degree and 341% more likely to earn a 4-year degree.

8.1.1 Type of High School

Figure 38 (**Tables D.1** through **D.3** and **D.13** through **D.15**) shows the relationship of type of high school to persisting in college and earning a college degree. The analyses show graduates of the magnet high schools were much more likely to stay in college and earn a college degree. Magnet graduates were 178% more likely to earn a college degree than comprehensive graduates. This effect was almost entirely due to the advantage in 4-year degrees: magnet high school graduates were no more likely to persist and earn a 2-year degree. The reader will bear in mind that some students transfer from 2-year schools to 4-year colleges where they earn degrees.

Figure 38. The relationship of high school type to earning a college degree with adjustment for gender, ethnicity, economic disadvantage, special education, and graduation cohort. Additionally, one set of models adjusts for mathematics and language arts HSPA scores and the other does not.

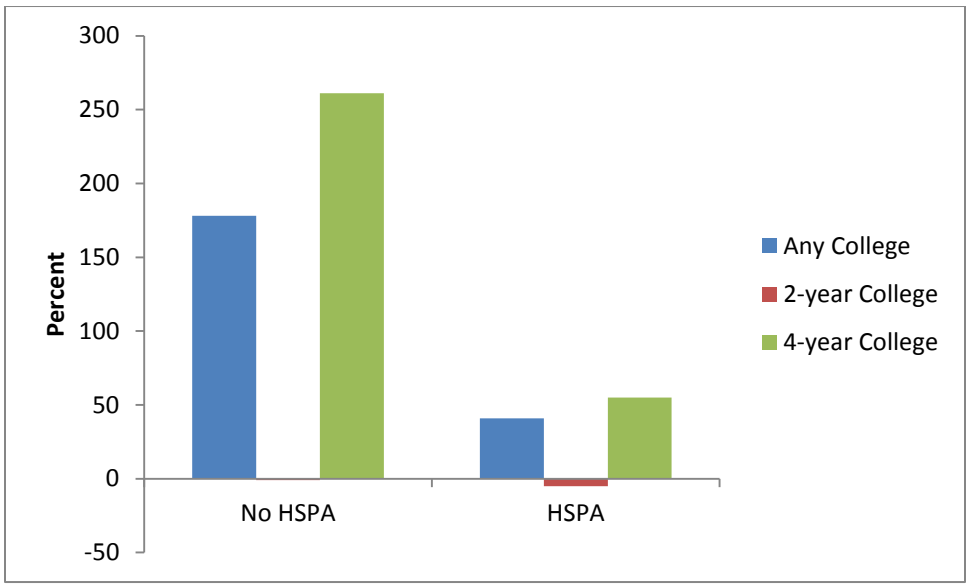


Figure 38 also shows the relationship between high school type and a college degree is substantially due to differences in HSPA scores: the effect of high school type is much weaker when adjusted for HSPA scores. Nevertheless, after adjustment for HSPA scores, graduates of magnet high schools were still 41% more likely than comprehensive graduates to earn a college degree, and 55% more likely to earn a 4-year degree. This suggests that magnet graduates may have acquired additional important academic skills while attending high school that supported their persistence in school. Additionally, magnet high school graduates may possess other unmeasured characteristics that were not acquired during high school, but which nevertheless enabled them to persist in college and earn a degree.

8.1.2 Gender/Race/Ethnicity Categories

Figures 39 (**Tables D.1** through **D.3**) and **40** (**Tables D.16** through **D.18**) show the relationship of the various gender/race/ethnic categories to persistence in college and the earning of a college degree. **Figure 39** shows white females were the most likely to persist in college and earn a degree: they were 145% more likely to earn a degree than black females (the reference group). White males were 52% more likely to earn a college degree than black female students. Hispanic females and black female students were essentially equivalent in persisting in college and earning degree. Unfortunately, black males and Hispanic males were 32% less likely than black females to earn a college degree.

Figure 39 also shows white females, Hispanic females, and white males were more likely to earn a 2-year college degree than black female students. Black males, Hispanic males, and black females were no different in their persistence in earning a 2-year degree. In the case of 4-year degrees, white females and white males were the most likely to persist and earn a 4-year college degree.

Figure 40 shows the results of the gender/race/ethnicity analyses with adjustment for the HSPA scores. Overall, the effects of gender/race/ethnicity are weakened with adjustment for HSPA performance. Nevertheless, white females were remained the most likely to persist and earn a college degree (83% more likely than black females). And, black and Hispanic males were more than 30% less likely than black female students to earn a college degree.

Figures 39 and **40** also summarize the results for earning a 2-year degree. Hispanic females, white females, and white males were much more likely to persist in college and earn a 2-year degree than black female students. Black males and Hispanic males were essentially the same as black female students in persisting and earning a 2-year degree. In the case of 4-year degrees, white females and white males were the most likely to persist and earn a 4-year degree. When adjusting for HSPA scores, white males were no different than black females in earning a 4-year college degree, but white females were 69% more likely to persist in college and earn a 4-year degree. Again, black males and Hispanic males were much less likely to stay in school and earn a 4-year degree than black female students.

Figure 39. Gender/Race/Ethnicity categories and enrollment in college (not adjusted for HSPA scores)

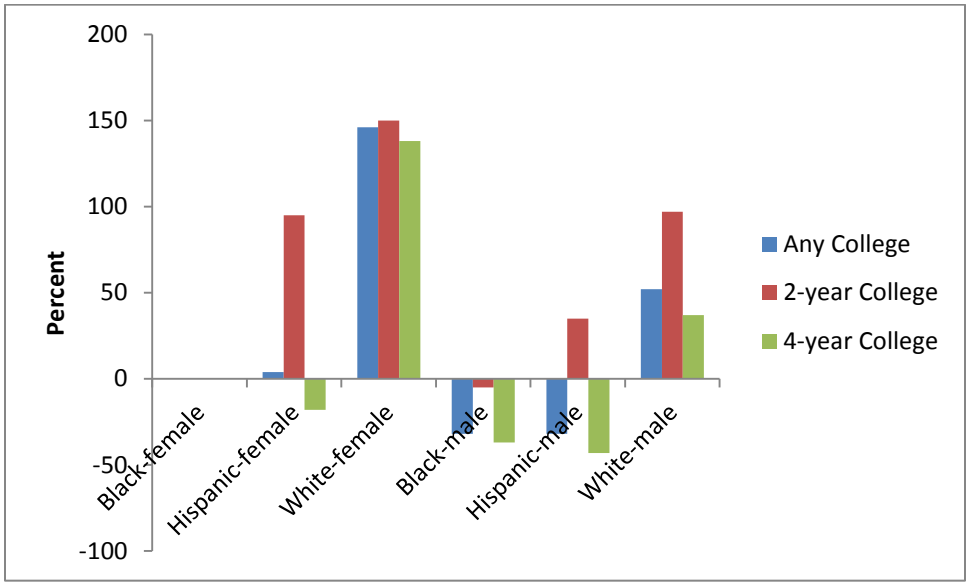
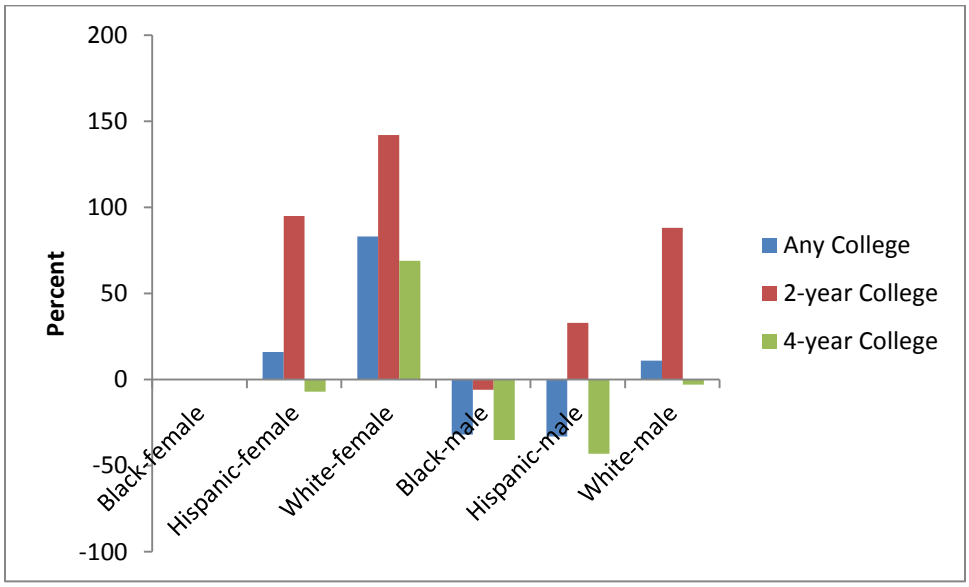


Figure 40. Gender/Race/Ethnicity categories and enrollment in college (adjusted for HSPA scores)



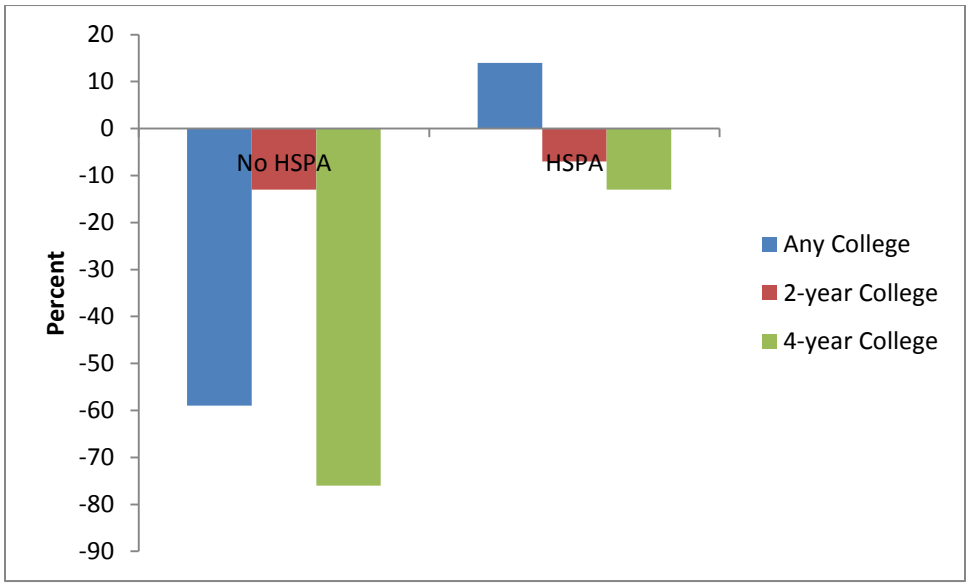
8.1.3 Economic Disadvantage

As in the prior analyses on matriculation in college and on earning a college degree among all high school graduates, we observed no relationship of "economic disadvantage to earning a college degree once enrolled in college (**Tables D.1** through **D.3** and **D.16** through **D.18**).

8.1.4 Special Education

Figure 41 (**Tables D.1** through **D.3** and **D.16** through **D.18**) presents the relationship of special education to persistence in college and the earning of a college degree. The result show high school graduates who took special education courses were much less likely to persist in college and earn a college degree than regular students. This result was largely because of less persistence among those who attended 4-year colleges. **Figure 41** also shows that most of this disadvantage was explained by lower HSPA performance by special education students.

Figure 41. Special education students and enrollment in college.



8.1.5 Year of Graduation

Figures 42 (**Tables D.1** through **D.3**) and **43** (**Tables D.16** through **D.18**) show the relationship of year of graduation to persistence in college and earning a college degree as compared to 2004 graduates. The analyses presented in **Figure 42** show the 2007 cohort was 27% more likely to persist and earn a college degree than the 2004 cohort (p=0.0322). However, with adjustment for the effects of HSPA scores, this advantage was eliminated (p=0.8722). Therefore, the analyses are consistent to increased perseverance in 2007 being due to better HSPA performance.

The analyses presented in the two figures also show no differences in persistence in earning a 2-year degree, but they do show that the 2007 cohort was 34% more likely than the 2004 cohort to persist in college and earn a 4-year degree. Again, this effect appears to be due to better HSPA performance in this cohort.

Figure 42. Graduation cohort and enrollment in college (not adjusted for HSPA scores)

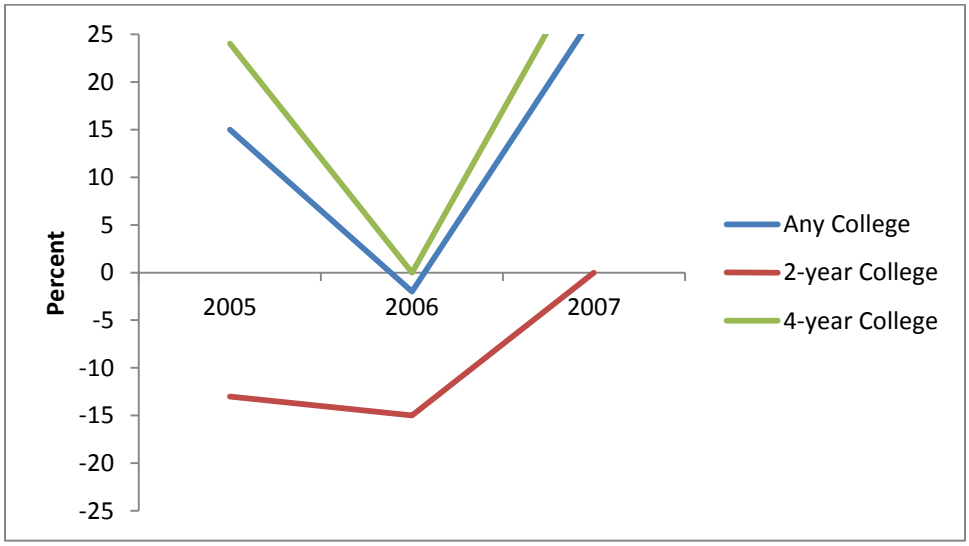
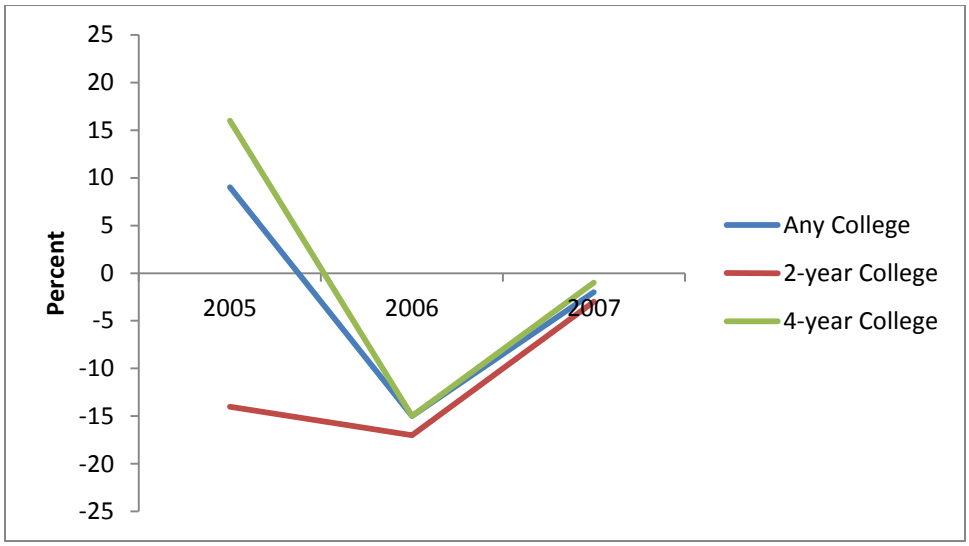


Figure 43. Graduation cohort and enrollment in college (adjusted for HSPA scores)



8.1.6 Summary of Findings About Persistence In Earning a College Degree

The analyses presented in this section examined persistence in college and the earning a degree once a student a student was enrolled in college. Our analyses show performance on the HSPA examination is a power predictor of whether a student persisted in college and earned a 4-year college degree. However, HSPA performance bore little relationship to whether a student earned a 2-year college degree—perhaps because better students often transfer from 2-year to 4-year schools. Students who passed the HSPA examination were much more likely to earn a 4-year degree than those who failed to pass both parts of the HSPA examination. The analyses presented here also show attendance at magnet high school was associated with a greater likelihood of persisting in

college and earning a 4-year college degree. Much of this effect was due to higher HSPA scores, but other factors associated with attending a magnet high school seem to have increased the odds of earning a 4-year college degree.

The analyses presented here also identify several demographic factors that are associated with lesser or greater chance of persisting in college and earning a degree. Gender and race/ethnicity are important predictors of earning a college degree. Although whites were less likely to matriculate in college, they were much more likely to earn a college degree if they attended college. And, black and Hispanic males were much less likely to earn a college degree than the reference group (black females).

Other analyses show no association between "economic disadvantage" and the likelihood of persisting in college and earning a college degree. We regard this as a reflection of the crudeness of the "economic disadvantage" measure, which lumps together households with a broad range of low incomes. Special education students were much less likely to earn a college degree, and most of this disadvantage was due to lower HSPA scores. Lastly, graduates from the 2007 cohort were more likely to persist in college and earn a college degree than 2004 high school graduates, and this appears to have been because of better performance on the HSPA examination.

9 Community colleges and pathways to earning a college degree

The question of degree attainment and matriculation at 2-year colleges is analytically complex because students enroll in community colleges for a range of reasons. The analyses presented here attempt to "tease out" the "modes" of attending a 2-year school. For these analyses, a transfer student is defined as one who started at one type of institution (a 2-year or 4-year) and whose last enrollment was at another type of institution. "Mixed" students are those that began and "ended" (last semester enrolled) at the same type of institution, but took some courses at an institution of the other type. For example, a "mixed 2-yr with some 4-yr" would be a student who began and "ended" at a 2-year school, but also took at least one course at a 4-year institution.

Table 23 shows the distribution of NPS graduates who attended a 2-year institution for at least one semester. The bulk of students attended only 2-year schools. As would be expected, this proportion goes up with each ensuing cohort because of less opportunity to have taken classes elsewhere. Focusing on the 2004 cohort, a significant number of graduates transferred from a 2-year school to a 4-year school (12.5%); a nearly equivalent number transferred from a 4-year school to a 2-year school (12.0%). A small proportion of students had "mixed" patterns in which they began and ended their college enrollment at one type of school, but took interim classes at a different type of school. For the 2004 cohort, almost 5% of students began and ended their coursework at a 4-year institution, but also took courses at 2-year institutions. Just 70% of those attending 2-year schools restricted their coursework to 2-year schools.

Table 23. Distribution of NPS graduates who tool at least one course at a 2-year institution by graduation cohort

Year	Any 2-year school (N)	2-year school Only (%)	Mixed		Transferred	
			2-year with some 4-yr	*4-year with some 2-yr*	*From 2-year to 4-yr*	*From 4-year to 2-yr*
2004	768	69.7	1.4	4.6	12.5	12.0
2005	784	74.0	2.0	3.4	10.7	10.0
2006	840	73.4	2.1	5.4	8.2	11.9
2007	798	72.4	1.1	4.5	10.3	11.9
2008	835	80.1	0.6	2.5	6.4	10.4
2009	813	80.8	0.4	1.7	4.6	12.6
2010	613	85.2	0.3	1.6	2.4	10.4
2011	497	95.4	0.4	0.2	0.8	3.2
Total	5,948	77.7	1.1	3.2	7.4	10.7

Table 24 shows the contribution of the different "pathways" to earning an associate degree. The table shows 80.9% of associate degrees were earned by students who only attended 2-year institutions. Another 14.5% of associate degrees were earned by students who transferred from a 4-year to a 2-year school. No associate degrees were earned by students who transferred from a 2-year to a 4-year institution. Students who matriculated at a 2-year school and also who also took 4-

year classes earned a small number of associate degrees. To summarize, students who only attend 2-year institutions earn the vast majority of associate degrees. [See **Tables E.1** through **E.4** for a different presentation of the distribution of degrees among different enrollment patterns for the 2004 and 2004 cohorts.]

Table 24. Distribution of 2-year degrees (associate degrees) among NPS graduates who took at least one course at a 2-year institution by graduation cohort

Year	2-year Degrees (N)	2-year only (%)	Mixed		Transferred	
			2-year with some 4-yr	*4-year with some 2-yr*	*From 2-year to 4-yr*	*From 4-year to 2-yr*
2004	81	80.2	3.7	0.0	0.0	16.0
2005	65	78.5	6.2	0.0	0.0	15.4
2006	56	71.4	10.7	0.0	0.0	17.9
2007	47	80.8	0.0	0.0	0.0	19.2
2008	33	93.9	0.0	0.0	0.0	6.1
2009	21	95.2	4.8	0.0	0.0	0.0
2010	0	0.0	0.0	0.0	0.0	0.0
2011	1	100.0	0.0	0.0	0.0	0.0
Total	304	80.9	4.6	0.0	0.0	14.5

Table 25 shows the contribution of the different 2-year school "pathways" to earning a bachelor's degree. Overall, half of bachelor's degrees were earned by students who transferred from a 2-year to a 4-year school, and the other half were earned by students who began and "ended" at a 4-year school, but took some 2-year courses. No students who primarily attended 2-year institutions but took 4-year coursework earned a bachelor's degree. As would be expected, no students who transferred from a 4-year to a 2-year school earned a bachelor's degree.

Table 25. Distribution of 4-year degrees (bachelor's degrees) among NPS graduates who took at least one course at a 2-year institution by graduation cohort

Year	4-year Degrees (N)	Mixed		Transferred	
		2-year with some 4-yr	*4-year with some 2-yr*	*From 2-year to 4-yr*	*From 4-year to 2-yr*
2004	38	0.0	52.6	47.4	0.0
2005	24	0.0	70.8	29.2	0.0
2006	20	0.0	30.0	70.0	0.0
2007	12	0.0	25.0	75.0	0.0
2008	1	0.0	0.0	100.0	0.0
2009	0	0.0	0.0	0.0	0.0
2010	0	0.0	0.0	0.0	0.0
2011	0	0.0	0.0	0.0	0.0
Total	95	0.0	48.4	51.6	0.0

Tables 26 and **27** show the results of analyses that examine the rates at which students in the different 2-year pathways earned degrees. **Table 26** shows the yield of associate degrees by pathway. The table also shows the long delay in earning an associate degree for some students—some students continue to work towards associate degrees 8 years after high school graduation. Looking at the 2004 cohort, students were most likely to earn an associate degree when they combined 2-year coursework with some 4-year classes. Students who only attended a 2-year school, and those who transferred from a 4-year school to a 2-year school, earned associate degrees approximately 14.1% of the time. Students who transferred from a 2-year to a 4-year school, and those who began at a 4-year school and took the occasional 2-year class earned no associate degrees.

Table 26. Percentage of NPS graduates who earned an associate degree through different 2-year pathways (percent of those matriculating in college)

Year	2-year school Only	Mixed		Transferred	
		2-year with some 4-yr	*4-year with some 2-yr*	*From 2-year to 4-yr*	*From 4-year to 2-yr*
2004	12.2	27.3	0.0	0.0	14.1
2005	8.8	25.0	0.0	0.0	12.8
2006	6.6	33.3	0.0	0.0	10.0
2007	6.6	0.0	0.0	0.0	9.5
2008	4.6	0.0	0.0	0.0	2.3
2009	3.0	33.0	0.0	0.0	0.0
2010	0.0	0.0	0.0	0.0	0.0
2011	0.2	0.0	0.0	0.0	0.0
Total	5.3	21.2	0.0	0.0	6.9

Table 27. Percentage of NPS graduates who earned a bachelor's degree through different 2-year pathways (percent of those matriculating in college)

Year	Mixed		Transferred	
	2-year with some 4-yr	*4-year with some 2-yr*	*From 2-year to 4-yr*	*From 4-year to 2-yr*
2004	0.0	51.4	20.8	0.0
2005	0.0	25.9	20.2	0.0
2006	0.0	31.1	8.7	0.0
2007	0.0	25.0	3.8	0.0
2008	0.0	4.8	0	0.0
2009	0.0	0.0	0	0.0
2010	0.0	0.0	0	0.0
2011	0.0	0.0	0	0.0
Total	0.0	25.9	10.5	0.0

Table 27 provides information on the yield of bachelor's degrees among students who attended 2-year schools. The table shows no bachelor's degrees were earned by students who attended 2-year schools with occasional 4-year coursework, and no bachelor's degrees were earned by those who transferred from a 4-year to a 2-year school. The most likely to earn a bachelor's degree were those who attended a 4-year institution, but who also took some 2-year coursework. Transfers from 2-year to 4-year institutions were less successful in attaining a degree (20.8% of the 2004 cohort).

9.1 Matriculation and Degree Completion at Essex County College

Essex County College (ECC) is the most commonly attended college by NPS high school graduates: half of NPS graduates matriculated at ECC (see **Table 8**). **Table 28** shows that approximately 80% of those NPS high school graduates who attended a community college matriculated at ECC. However, about 1 in 4 students attend other community colleges—either in addition to ECC or instead of ECC. The table shows transfers from 4-year to 2-year schools, and the reverse, is an important component of those attending community college. For the 2004 graduation cohort, transfers were 27.6% of students who attended ECC.

Table 29 shows the percent of those NPS graduates who attended Essex County College (ECC) and earned an associate degree. The table includes information on those graduates who attended another 2-year college, but not ECC. The table omits information on "mixed" students because of small numbers (both in terms of attending multiple community colleges and in mixing 2- and 4-yearclasses). The table also does not provide information on transfers to 4-year schools because these students never earn associate degrees.

Table 28. Percentage of NPS students who attended a community college, by students who attended ECC only and other 2-year and 4-year schools (including transfers)

		Essex CC			Essex and Other CC			Other CC		
		2-year only	Transfer		2-year only	Transfer		2-year only	Transfer	
Year	N		2-year to 4-yr	4-year to 2-yr		2-year to 4-yr	4-year to 2-yr		2-year to 4-yr	4-year to 2-yr
2004	733	51.7	7.2	7.1	9.0	1.8	1.4	13.6	4.1	4.1
2005	757	58.4	6.6	6.6	7.7	1.1	0.5	12.6	3.4	3.2
2006	795	59.2	5.9	8.9	7.0	0.8	1.3	12.4	2.0	2.4
2007	762	57.2	7.2	9.4	7.4	1.2	0.9	12.5	2.1	2.1
2008	814	64.1	4.6	7.1	4.2	0.4	0.9	14.5	1.6	2.7
2009	799	63.8	3.2	8.9	5.1	0.1	0.0	13.6	1.2	3.9
2010	603	67.7	1.2	7.5	3.6	0.7	0.0	15.6	1.3	2.5
2011	496	76.0	0.6	1.8	1.0	0.2	0.0	19.0	0.2	1.2
Total	5,759	61.6	4.8	7.4	5.9	0.7	0.8	14.0	2.1	2.8

Table 29. Percentage of NPS graduates who earned an associate degree by students who attended ECC only and those who attended other CC's

Year	Essex CC		Other CC	
	Essex CC Only	*4-year to 2-yr*	*Other CC Only*	*4-year to 2-yr*
2004	14.0	17.3	11.0	10.0
2005	9.5	10.0	10.5	20.8
2006	8.3	12.7	6.1	5.3
2007	6.9	9.7	6.3	6.2
2008	5.2	3.4	3.4	0.0
2009	3.3	0.0	3.7	0.0
2010	0.0	0.0	0.0	0.0
2011	0.0	0.0	1.1	0.0
Total	5.9	7.5	5.2	6.1

Table 29 reflects how very long it can take for NPS graduates to earn an associate degree (at ECC and at other 2-year colleges). This is indicated by the increasing proportions of associate degrees conferred as we move from the most recent to the oldest graduation cohorts. Data for the 2004 cohort show 14.0% of those who exclusively attended ECC had earned an associate degree by the end of the research period.

Figures 44 and **45** examine the number of terms enrolled at ECC, and other community colleges, that it took NPS high school graduates to earn an associate degree. The reader should note that these two figures reveal flaws in the National Student Clearinghouse (NSC) data. In both figures, some students appear to have attained an associate degree after one term of enrollment, which is clearly impossible. If the data behaved as expected, one would expect the cumulative percentages to begin at zero. Therefore, it appears that the NSC is missing enrollment terms for some students.

Figures 44 and **45** show the rate at which NPS high school graduates earned an associate degree was highest in the 2004 cohort. This was the case for students who attended ECC and for those who attended other community colleges. Among those students who attended ECC only, each graduation cohort since 2004 saw students attaining the associate degree at a slower pace than the prior cohort, and it appears that the number of associate degrees among recent cohorts will ultimately be far lower than seen in the 2004 graduation cohort.[3] The reasons for this are not clear. Certainly, the economic downturn of 2007 might have adversely influenced persistence. A second explanation may be stricter academic criteria at ECC and the other community colleges. A third explanation might be more poorly academically prepared NPS students. The NPS graduates who more recently attended the 2-year colleges may be different in important ways than earlier cohorts.

[3] The reader should note that the more recent cohorts in **Figures 45** and **46** do not contain information on students who were yet to enroll in college, or were continuing their studies would be taking coursework in the future. Therefore, the different cohorts are not strictly comparable.

Figure 44. Number of terms that a student enrolled and the cumulative percent who earned an associate degree: students who only enrolled at Essex County College

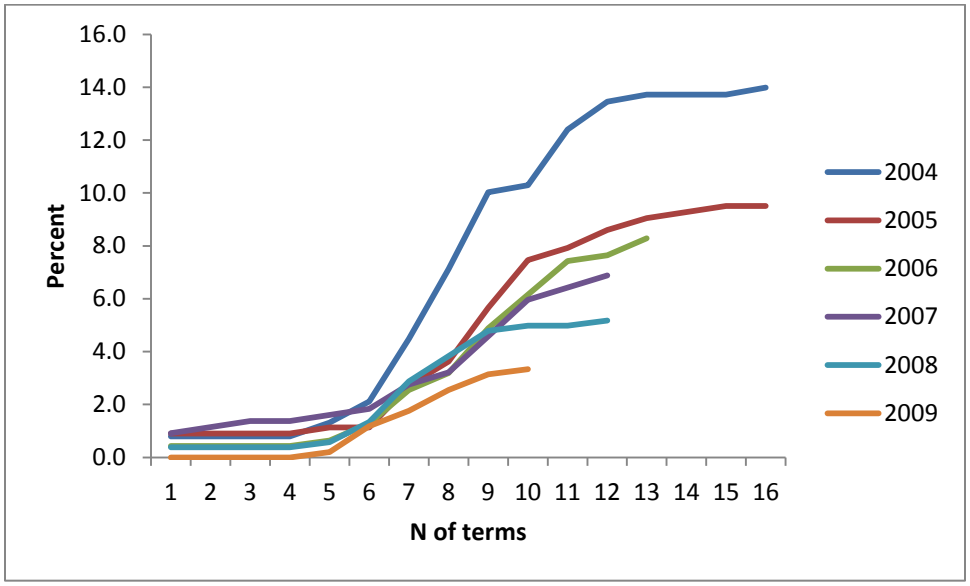


Figure 45. Number of terms that a student enrolled and the cumulative percent who earned an associate degree: students who only enrolled at other community colleges (not Essex County College)

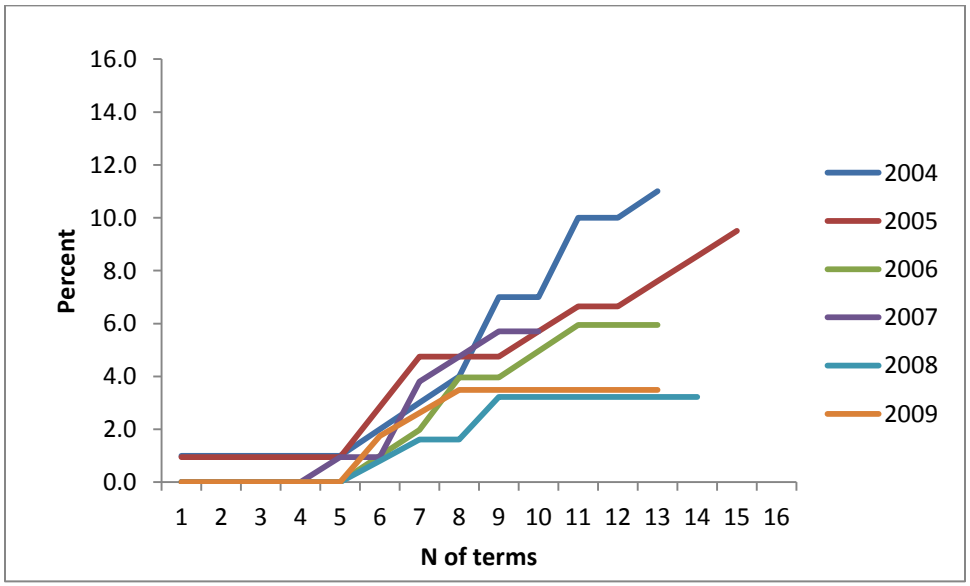
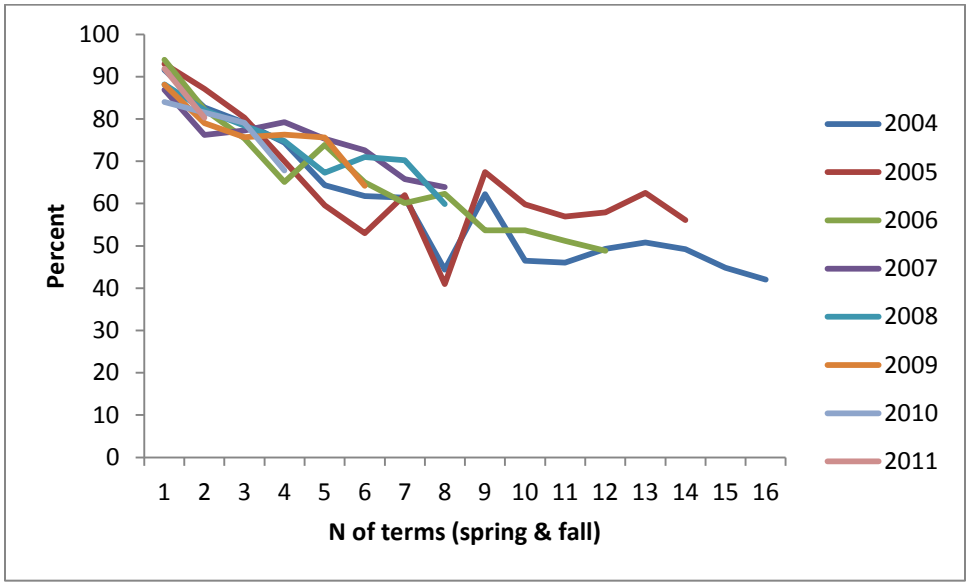


Figure 46 shows the percent of students attending ECC full time since high school graduation. This figure, together with **Figure 47**, shows the majority NPS graduates persist at ECC for multiple years in seeking a college degree.

Figure 46. The percentage of students attending ECC full time and the number of spring and fall semesters since high school graduation.



Tables 30, **31**, and **32** show the distribution of associate degrees, "drop-outs," and continuing students for NPS graduates whom exclusively attended ECC. "Drop-outs" are students who had not earned an associate degree, had not transferred, and who had not taken a course during the last two years of the follow-up period. **Table 30** shows approximately 2/3 of the 2004 cohort had dropped out, another 19.3% were by this liberal definition still potentially continuing their studies, and 14.0% had earned an associate degree. Using a more restrictive definition of "drop-out" (no class within the last year of follow-up), 72.8% of the 2004 cohort was "drop-outs" and 13.2% were "continuing" students.

Table 30. Post-secondary outcomes of those NPS graduates who first matriculated at Essex County College within 2 years of high school graduation

Year	N	No Degree		Associate Degree
		"Drop Out"	*"Continuing"*	
2004	379	66.8	19.3	14.0
2005	442	70.4	20.1	9.5
2006	471	70.1	21.7	8.3
2007	436	61.9	31.2	6.9
2008	522	49.4	45.4	5.2
2009	510	31.0	65.7	3.3

Table 31. Post-secondary outcomes of those NPS graduates who first matriculated at Essex County College within 2-years of high school graduation: comprehensive high schools

Year	N	No Degree		Associate Degree
		"Drop Out"	*"Continuing"*	
2004	281	71.2	18.5	10.3
2005	366	72.4	19.4	8.2
2006	378	73.0	20.1	6.9
2007	371	63.1	29.6	7.3
2008	443	50.1	46.0	3.8
2009	410	32.0	65.4	2.7

Table 31 shows associate degrees, "drop-outs," and "continuing" students among the graduates of the comprehensive high schools. For the 2004 cohort, the table shows 7 in 10 students at ECC having dropped out. Even higher dropout rates were seen for the 2005 and 2006 graduation cohorts, which suggests higher ultimate dropout rates for these two groups. **Table 32** shows the same information for graduates of the magnet high schools. The table shows the graduates of the magnet high schools were much more likely to earn an associate degree than comprehensive graduates. For the 2004 cohort, magnet graduates were 2.4 times as likely to earn an associate degree as graduates from the comprehensive high schools. Despite the better academic performance of the magnet graduates, large numbers failed to earn an associate degree. More than half of the 2004 cohort failed to earn an associate degree.

9.2 Summary of the Community College Pathways Analyses

In summary, NPS graduates attended 2-year colleges with a range of goals. Some attended community colleges with the goal of earning an associate degree. Others use 2-year schools as an inexpensive way of pursuing a bachelor's degree. For these NPS high school graduates, approximately 70% of those attending a 2-year college will only attend a 2-year school. The remaining 30% of students will be largely comprised of transfer students: approximately equal numbers of whom transfer from 2-year community colleges to a 4-year college and vice versa. A small number of students "mix" 2-year and 4-year classes. Primarily those students who only attend 2-year schools earn associate degrees. Unfortunately, a small percentage of these students earn an associate degree. For the 2004 cohort, just 12.2% of those students who only attended a 2-year community college earned an associate degree; those who transferred from a 4-year to a 2-year school essentially matched this figure. With respect to bachelor's degrees, about 20% of 2-year students who transferred to 4-year schools earned a bachelor's degree.

The Essex Community College analyses show 14% of the 2004 cohort who exclusively attended ECC earned an associate degree. The analyses also show it can take a very long time for this to occur. Therefore, a very large proportion of 2004 high school graduates dropped out of ECC, and most will likely never earn an associate degree.

Table 32. Post-secondary outcomes of those NPS graduates who first matriculated at Essex County College within 2 years of high school graduation: magnet high schools

Year	N	No Degree		Associate Degree
		"Drop Out"	*"Continuing"*	
2004	98	54.1	21.4	24.5
2005	76	60.5	23.7	15.8
2006	93	58.1	28.0	14.0
2007	65	55.4	40.0	4.6
2008	79	45.6	41.8	12.7
2009	83	24.1	68.7	7.2

10 Discussion and Policy Recommendations

This report presents a detailed picture of "college going" by NPS high school graduates from the years 2004 through 2011. And, hopefully provide information that can lead to improving the future lives of Newark's high school graduates.

Our research shows that about 60% of NPS high school graduates go on to college, and about 25% of student who enroll in college earn a degree. In some ways, these figures may seem positive: many students do go on to college. However, relatively low graduation rates change this picture. For this study, our data were restricted to NPS graduates. However, the most recent State of New Jersey data suggest that about 40% of NPS 9th grade students fail to graduate from high school. Based on this figure and the results of our analyses, this means that just over a third of Newark students who begin high school go on to college. And, only 1 in 10 students who begin high school go on to earn a college degree. These estimates are very dispiriting and underline the magnitude of the challenge that faces the Newark Public Schools to in preparing its students for success in the 21st Century economy.

When we compare these Newark results with data from the United States and other cities (see *Literature Review*), NPS rates of going to college and earning a degree are fall below the national rates of 70% of graduates going to college and 58% earning a degree within six years. However, rates of college going are higher than reported in Baltimore (~48%) and Philadelphia (56%), and lower than in Boston (75%) (Durham and Olson, 2013; Sum et al, 2013). In terms of earning a college degree, six year Baltimore rates (~30%) are bit higher than the rate for Newark (25%). In Boston, the six year college degree rate for 2005 was considerably higher (47%)(Sum et al., 2013). In other words, Newark is more similar to Baltimore than Boston.

Our analyses identify three factors that play a prominent role in the likelihood of NPS students both matriculating into college and completing an associate or bachelor's degree. These factors are high school type, demographic background, and enrollment in a 2-year versus 4-year post-secondary educational program. In terms of high school type, the analyses document an enormous gap in post-secondary success between the magnet high schools and the comprehensive high schools in

Newark. As we outlined above, graduates of the magnet high schools are 60-70% more likely to attend college or university than comprehensive high school graduates. Graduates of magnet high schools are also 2-3 times more likely, depending on the cohort, to attend a 4-year college than graduates of comprehensive high schools.

We know from previous studies that students who start at a 4-year institution directly after high school are more likely to complete a degree, compared to students who start at a 2-year college (See Long & Kurlaender, 2009). Thus, one reason magnet school graduates may be more successful at earning a degree is because they are more likely to get accepted into 4-year colleges after graduation, as opposed to enrolling at a 2-year college first. Furthermore, the analyses show graduates of the magnet high schools are approximately twice as likely to earn bachelor's degrees as comprehensive graduates. Therefore, magnet graduates are not only more likely to attend a 4-year college than graduates of comprehensive high schools, but are also more likely to persist after matriculation and earn a degree.

Thus, the choice to enroll in a 2-year or 4-year college or university matters in the likelihood that NPS graduates will go on to earn an associate or bachelor's degree. Overall, NPS graduates were much more likely to earn a bachelor's degree. We found that primarily those students who only attend 2-year schools earn associate degrees. Unfortunately, a small percentage of these students actually go on to earn an associate degree. For the 2004 cohort, just 12.2% of those students who only attended a 2-year community college earned an associate degree; those who transferred from a 4-year to a 2-year school essentially matched this figure.

We also found that certain demographic characteristics of NPS graduates were important predictors of attending college and earning a degree. For instance, we found that white females were twice as likely to earn a college degree (whether an associate or bachelor's degree) compared to black females. This was the case despite these young women being less likely to enroll in college. Hispanic females were much more likely to earn an associate degree than black females, but were less likely than black females to earn a bachelor's degree. Both black and Hispanic men were much less likely than black females to earn a bachelor's degree, but were essentially equivalent to black females in earning an associate degree. Economic disadvantage reduced the rate of degree attainment for both associate and bachelor degrees, probably because of the cost of attendance. Special education graduates were very unlikely to earn a bachelor's degree (85% lower rate than regular students), and were 50% less likely to earn an associate degree.

10.1 Recommendations

Given the results that are presented in this report, we have the following recommendations:

- *Take steps to improve academic performance.* This is a rather obvious and commonplace recommendation. However, the data analyses show that by far the strongest predictor of going to college and earning degree is performance on the HSPA exam. The higher the HSPA scores, the more likely students are to enroll in college and to earn a degree. Students who were unable to pass the HSPA exam were very unlikely to earn a college degree.

- *Provide pathways to good jobs that do not require a college degree.* Our analyses show the likelihood of earning a college degree is very low for students who cannot pass the HSPA exam. Not all NPS graduates want to attend college, or are prepared to do so. NPS needs to create pathways to well-paying jobs with futures in the evolving global economy. The district might investigate creating partnerships with locally based companies like United Airlines, based in Newark Airport, or PSE&G, Verizon, Comcast, etc. to provide student training programs leading to good-paying jobs that do not require a college degree, but do require technical skill.
- *Create a "college going culture" at every high school,* particularly at the comprehensive high schools. This recommendation has an "upside" and a "downside." Our analyses show students who attended a magnet high school were 62% more likely to attend a 4-year college—even when mathematics and language arts HSPA scores were equivalent to those of comprehensive high school graduates. The results suggest that magnet students are more college oriented, or that they may have greater knowledge about the college process. On the downside, although a "college going culture" is important, the reality is that many NPS students are not ready for college and that encouraging lower performing students to attend college may create false hopes that can be painful and expensive. Our analyses show students who were unable to pass both parts of the HSPA exam were exceedingly unlikely to earn a college degree. Therefore, pathways to good jobs must be created as recommended above. However, no student should be discouraged from attending college; even some college is economically and educationally beneficial.
- *Make clear to NPS students that going to college is hard work and challenging.* Our analyses show earning a college degree is an uncommon event for low performing students from the comprehensive high schools. NPS graduates must not have a rosy view of their academic capabilities, but instead must realize that college will be challenging and will require hard work and perseverance, and that they must work hard in high school to prepare for college. Although we support Attewell and Lavin's (2008) belief in "College for All", consistent with Rosenbaum's cautions (2001; 2011), NPS should avoid promoting a "College for All" philosophy unless it is clear to students that they must work hard in high school to have the skills to attain a college degree.
- *Educate NPS guidance counselors* and other school administrators and staff about the low college degree completion rates, the financial challenges that this pathway may produce, and the length of time that it often takes to earn a degree for students enrolling in 2-year institutions.
- *Foster the development of "soft" skills* that may enable NPS graduates to persist in college and earn a degree. The analyses presented here show students who attended magnet high schools were 41% more likely to earn a college degree even after adjustment for mathematics and language arts HSPA scores. This suggests that "soft skills" (such as study skills, "grit" and academic self-concept, etc.) may have been gained at the magnet high schools and have increased the likelihood of earning a degree.
- *Encourage students to attend a 4-year college if possible.* Not all students are prepared to attend a 4-year college. Essex Community College and other 2-year colleges play a very important role

in providing affordable, high quality, and locally-based education. However, when NPS graduates are capable of attending a 4-year college, then they should do so as their likelihood of earning a degree is much greater than at 2-year colleges.

- *Support students who are college capable, but who are at risk of not attending college.*
    - white students: The analyses show Newark's white females and males were much less likely to attend college than others of equivalent mathematics and language arts performance. Although these mostly immigrant children may have other economic opportunities via family businesses and other social connections, in the long term most these students would greatly benefit from a college education. Also, many immigrant students (and their families) have concerns about their immigration status and the potential negative fallout that may occur from enrollment in college. Programs are needed ensure that these NPS graduates go to college.
    - Hispanic students: Hispanic students were much less likely to attend a 4-year college than black females, even when equally college capable. Instead, Hispanic students were more likely to attend 2-year colleges, where students are less likely to earn a degree. Talented Hispanic students need to be made aware of the 4-year college opportunities that are open to them. Again, concerns about immigration status are an issue for some families.
    - black students: In Newark, black students are the most likely to attend college. While black males are less likely to attend college than black females, but they do attend college at higher rates than either Hispanic males or white males. Unfortunately, black males were a third less likely to earn a college degree as black females. As recommended below, programs must be developed to provide male students with the tools needed to remain in college and earn a college degree.
    - male students: male students of all ethnic backgrounds were less likely to attend college than female students. Programs must be developed to promote college enrollment among college capable young men.
- *Develop a tracking system to assess and monitor college readiness throughout high school.* Students should be followed throughout high school, and rigorous college prep coursework and enrollment in 4-year colleges should promoted among those who are college capable.
- *Identify 2-year and 4- year post-secondary school options* where NPS graduates are successful, that are reasonably affordable, and that can meet the needs of first generation college-students, and economically disadvantaged, black and Latino, and male students.
- *Provide intensive and sustained college guidance and support for all NPS high school students* , but particularly for comprehensive high school students, on appropriate post-secondary options, the college application process, financial aid options and procedures, and other potential obstacles to college enrollment and retention. Students need to be thinking about and preparing for school during their freshman year.
- *Offer "college knowledge" workshops* for NPS students (and their parents) who are interested in applying to college (Roderick et al., 2009). At the workshops, counselors and staff can teach students and their parents about college selection, the college application process, and

deadlines for financial aid, etc. In particular, students and parents need to learn about the economics of 4-year colleges, including of those schools that are relatively inexpensive and those that provide larger and more generous financial aid packages. Given the large and growing population of Spanish speakers in Newark, Spanish language college information programs should be offered to parents. Transportation and food should be provided and targeted advertising should take place in Spanish and Portuguese owned businesses and Spanish and Portuguese language churches.

- *Provide after school programs and activities at every high school* so that students can safely study and socialize after school hours. A study by Harper et al. (2014) found that urban school students who were successful in school had a safe place to go after school where they could study and spend time with their friends.
- *Investigate the establishment of a supplemental, non-profit organization* through a public-private partnership that aims at increasing the number of students applying to and attending college through a multidimensional approach. This organization might be modeled on Yonkers Partners in Education in Yonkers, NY (see Kronen 2014).
- *Establish a college-going orientation before high school.* Traditionally students do not start thinking about or planning for college until the 10th or 11th grade. Research indicates that all students, but especially low income students, need access to information about college well before they start high school- preferably by the 8th grade or earlier (Levine & Nidiffer, 1996). A program that targets middle school students, meeting with them during the regular school day and talking about college, careers, etc would help students start to think about college sooner.
- *Advocate for limits on the number of remedial courses* that are required by colleges before students are permitted to take credit-bearing courses. Students who fail to meet minimal requirements on academic examinations can become "stuck" in remedial courses for several years before being allowed to take credit-bearing courses. Connecticut and Florida have passed legislation to limit the number of remedial courses that students can be required to take and the State University of New York has announced plans to phase out remedial courses over the next ten years. Instead, programs are being established to meet students' needs while taking credit-bearing courses. A similar program in New Jersey might help students persist and graduate at higher rates.
- *Strengthen existing collaborations and develop new ones with local higher education institutions* (Essex County College, New Jersey Institute of Technology, Rutgers University-Newark and Rutgers Biomedical and Heath Sciences) to promote college readiness and more effective transitions to college.

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Appendices

Appendix A. School Specific Matriculation Rates

Table A.1. Number of graduates and percent who matriculated in a college or other institution of higher learning: comprehensive and magnet schools (total graduates, n=17,503).

Year	School	N	%	School	N	%	School	N	%
2004	American History HS	0	---	Central HS	194	51.6	Technology HS	122	76.2
2005		0	---		206	53.9		136	72.1
2006		0	---		224	53.6		117	72.7
2007		0	---		172	50.0		144	67.4
2008		0	---		188	53.7		118	76.3
2009		0	---		218	49.1		109	75.2
2010		71	71.8		181	49.2		100	57.0
2011		55	70.9		191	49.7		106	66.0
2004	Arts HS	116	87.1	Shabazz HS	212	45.3	Weequahic HS	155	55.5
2005		99	80.8		276	50.0		188	53.7
2006		124	84.7		276	44.2		197	61.9
2007		148	85.1		282	54.6		241	51.9
2008		145	85.5		281	49.1		239	51.1
2009		176	74.4		245	49.8		253	49.8
2010		122	64.8		259	39.8		209	40.2
2011		108	66.7		205	44.4		154	35.7
2004	Barringer HS	320	49.7	Science HS	130	91.5	West Side HS	234	47.4
2005		307	51.1		118	92.4		248	57.7
2006		337	46.0		153	88.9		250	54.8
2007		324	48.8		134	86.6		317	49.2
2008		374	47.3		135	87.4		365	51.2
2009		373	40.5		128	91.4		338	39.9
2010		334	38.0		193	66.8		280	43.9

2011		202	46.0		185	83.2		228	44.7
2004	East Side HS	367	52.6	University HS	97	85.6			
2005		322	51.6		101	92.1			
2006		327	50.5		138	87.7			
2007		336	51.5		109	83.5			
2008		384	52.6		113	86.7			
2009		413	49.6		108	86.1			
2010		336	42.0		106	77.4			
2011		273	43.2		113	79.7			

Table A.2. Number of graduates and percent who matriculated in a college or other institution of higher learning: other high schools (total graduates, n=491).

Year	School	N	%	School	N	%	School	N	%
2009	Academy of Vocational Careers	44	34.1	NJ Regional Day School	62	62.9	Newark Vocational High School	0	---
2010		52	32.7		61	32.8		7	---
2011		0	---		126	28.6		1	0.0
2009	Fast Track Success Academy	0	---	Newark Innovation Academy	0	---			
2010		0	---		0	---			
2011		31	22.6		107	26.2			

Table A.3. Percent of graduates who matriculated in a college or other institution of higher learning: comprehensive and magnet schools (total graduates, n=17,503).

Year	School	% 2-yr	% 4-yr	School	% 2-yr	% 4-yr	School	% 2-yr	% 4-yr
2004	American History HS	0.0	---	Central HS	41.3	27.3	Technology HS	59.0	37.7
2005		0.0	---		43.2	19.9		44.1	41.9
2006		0.0	---		39.7	22.8		47.9	37.6
2007		0.0	---		36.6	21.5		31.9	47.9
2008		0.0	---		38.8	22.3		42.4	44.1
2009		0.0	---		37.6	19.3		33.0	50.5
2010		25.4	52.1		33.1	22.7		29.0	35.0
2011		27.3	47.3		29.8	21.5		21.7	46.2
2004	Arts HS	50.0	61.2	Shabazz HS	32.1	19.8	Weequahic HS	40.0	29.7
2005		41.4	61.6		37.0	21.0		39.3	25.5
2006		42.7	61.3		30.4	21.7		50.3	25.4
2007		42.6	62.8		36.5	27.7		36.1	27.0
2008		38.6	63.5		32.7	23.1		36.8	22.2
2009		38.6	45.5		36.3	20.4		34.8	21.3
2010		23.0	45.1		25.1	17.0		25.4	19.6
2011		27.8	40.7		28.3	17.1		20.1	16.2
2004	Barringer HS	41.3	20.3	Science HS	40	75.4	West Side HS	34.6	26.5
2005		40.7	19.9		33.1	80.5		39.1	31.5
2006		37.1	16.6		31.4	77.8		40.8	27.6
2007		40.4	15.4		27.9	76.9		34.4	22.4
2008		34.2	19.0		24.4	79.3		34.8	21.4
2009		30.6	15.0		21.1	83.6		28.7	17.2
2010		28.1	11.4		21.2	54.9		30.0	16.7
2011		31.2	15.8		11.9	72.4		34.7	11.0
2004	East Side HS	37.1	26.2	University HS	38.1	69.1			
2005		40.7	18.0		34.7	79.2			

2006		40.1	20.8		44.2	68.1	
2007		38.4	24.4		28.4	72.5	
2008		40.4	17.7		30.1	69.9	
2009		38.7	15.3		25.9	72.2	
2010		30.7	13.1		29.3	57.6	
2011		28.6	15.0		16.8	64.6	

Table A.4. Percent of graduates who matriculated at a 2- or 4-year institution of higher learning (total graduates, n=491).

Year	School	% 2-yr	% 4-yr	School	% 2-yr	% 4-yr	School	% 2-yr	% 4-yr
2009	Academy of Vocational Careers	27.2	9.1	NJ Regional Day School	38.7	35.5	Newark Vocational High School	---	---
2010		25.0	7.7		16.4	18.0		---	---
2011		---	---		17.5	11.9		---	---
2009	Fast Track Success Academy	---	---	Newark Innovation Academy	0.0	0.0			
2010		---	---		0.0	0.0			
2011		19.4	3.2		23.4	2.8			

Appendix B. Cox Proportional Hazards Models of Time Since High School Graduation to Enrollment in College or University.

The following tables provide the results of a series of Cox proportional hazards models of time since high school graduation to enrollment in college. All models adjust for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort. One set of models also adjusts for HSPA scores in mathematics and language arts.

1.1 Models of College Enrollment That Do Not Adjust for HSPA scores

Table B.1. Cox proportional hazards model of time since high school graduation to first matriculation in any college (n=7,465).

Variable	Value	hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	0.80	0.73-0.88	<0.0001
	White-female	0.86	0.75-0.99	0.0327
	Black-male	0.75	0.70-0.82	<0.0001
	Hispanic-male	0.64	0.58-0.71	<0.0001
	White-male	0.63	0.54-0.74	<0.0001
	Other-male or female	0.97	0.76-1.25	0.8321
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	0.96	0.90-1.02	0.2203
Special Education	No (ref)	1.00	---	---
	Yes	0.50	0.45-0.56	<0.0001
Magnet High School	Comprehensive (ref)	1.00	---	---
	Magnet	2.41	2.26-2.57	<0.0001
Grad year	2004	1.00	---	---
	2005	0.99	0.91-1.08	0.7922
	2006	1.06	0.97-1.15	0.2000
	2007	1.28	1.17-1.40	<0.0001

Table B.2. Cox proportional hazards model of time since high school graduation to first matriculation in a 2-year college (n=7,465).

Variable	Value	hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	1.22	1.08-1.37	0.0010
	White-female	0.80	0.65-0.99	0.0406
	Black-male	0.88	0.79-0.98	0.0161
	Hispanic-male	1.01	0.89-1.15	0.8901
	White-male	0.78	0.62-0.97	0.0257
	Other-male or female	1.26	0.89-1.78	0.1882
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	1.01	0.93-1.10	0.7867
Special Education	No (ref)	1.00	---	---
	Yes	0.86	0.76-0.99	0.0306
Magnet High School	Comprehensive (ref)	1.00	---	---
	Magnet	0.69	0.62-0.76	<0.0001
Grad year	2004 (ref)	1.00	---	---
	2005	1.03	0.92-1.16	0.5922
	2006	1.08	0.96-1.20	0.2145
	2007	1.07	0.95-1.20	0.2936

Table B.3. Cox proportional hazards model of time since high school graduation to first matriculation in a 4-year college (n=7,465).

Variable	Value	hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	0.60	0.52-0.68	<0.0001
	White-female	0.95	0.79-1.14	0.5781
	Black-male	0.75	0.67-0.84	<0.0001
	Hispanic-male	0.49	0.42-0.57	<0.0001
	White-male	0.65	0.52-0.82	0.0002
	Other-male or female	0.81	0.57-1.14	0.2305
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	0.96	0.88-1.05	0.4066
Special Education	No (ref)	1.00	---	---
	Yes	0.23	0.18-0.30	<0.0001
Magnet High School	Comprehensive (ref)	1.00	---	---
	Magnet	4.34	3.96-4.74	<0.0001
Grad Year	2004 (ref)	1.00	---	---
	2005	0.99	0.87-1.13	0.8940
	2006	1.05	0.93-1.19	0.4255
	2007	1.38	1.22-1.57	<0.0001

Table B.4. Cox proportional hazards model of time since high school graduation to first matriculation in any college: by specific high schools (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	1.03	0.90-1.18	0.6417
	Central HS	1.02	0.88-1.17	0.8138
	East Side HS	1.06	0.92-1.22	0.4451
	Weequahic HS	1.10	0.95-1.26	0.1952
	West Side HS	1.04	0.91-1.18	0.5502
Magnet	Arts HS	2.46	2.14-2.84	<0.0001
	Science HS	3.21	2.78-3.70	<0.0001
	Technology HS	1.91	1.64-2.22	<0.0001
	University HS	2.63	2.28-3.02	<0.0001

Table B.5. Cox proportional hazard model of time since high school graduation to first matriculation in a 2-year college: by specific high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	1.02	1.01-1.42	0.0380
	Central HS	1.12	0.94-1.34	0.1874
	East Side HS	1.18	0.99-1.42	0.0632
	Weequahic HS	1.17	0.99-1.40	0.0716
	West Side HS	1.06	0.90-1.25	0.4987
Magnet	Arts HS	0.98	0.80-1.20	0.8143
	Science HS	0.48	0.38-0.62	<0.0001
	Technology HS	1.21	0.99-1.48	0.0615
	University HS	0.54	0.42-0.69	<0.0001

Table B.6. Cox proportional hazard model of time since high school graduation to matriculation in a 4-year college: by specific high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS	1.00	---	---
	Barringer HS	0.76	0.60-0.97	0.0250
	Central HS	0.90	0.71-1.14	0.3753
	East Side HS	0.93	0.74-1.17	0.5273
	Weequahic HS	1.03	0.82-1.29	0.8198
	West Side HS	1.07	0.87-1.32	0.5121
Magnet	Arts HS	3.36	2.75-4.11	<0.0001
	Science HS	5.83	4.79-7.09	<0.0001
	Technology HS	2.44	1.94-3.06	<0.0001
	University HS	4.90	4.05-5.94	<0.0001

2.1 Models of the Influence of HSPA Scores on Attending College

The following models examine the relationship of HSPA performance, high school type, and demographic variables to attending college or university.

Table B.7. Cox proportional hazard model of time since high school graduation to matriculation in any college: by high school type and method of graduation from high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.71	1.59-1.84	<0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	0.78	0.60-1.03	0.0797
	Partial SRA	1.34	1.22-1.47	<0.0001
	HSPA	2.17	1.99-2.36	<0.0001

Table B.8. Cox proportional hazard model of time since high school graduation to matriculation in a 2-year college: by high school type and method of graduation from high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	0.80	0.71-0.90	0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	0.72	0.52-0.97	0.0330
	Partial SRA	1.22	1.10-1.37	0.0003
	HSPA	0.81	0.72-0.90	0.0002

Table B.9. Cox proportional hazard model of time since high school graduation to matriculation in a 4-year college: by type of high school and method of high school graduation (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.28	2.06-2.51	<0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	0.83	0.47-1.47	0.5238
	Partial SRA	1.73	1.44-2.09	<0.0001
	HSPA	5.22	4.45-6.14	<0.0001

Table B.10. Cox proportional hazard model of time since high school graduation to matriculation in any college: by high school type and proficiency on the HSPA exams (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, and special education.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.61	1.50-1.74	<0.0001
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.62	0.43-0.90	0.0120
	Proficient	1.49	1.36-1.62	<0.0001
	Adv proficient	1.91	1.62-2.25	<0.0001
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	1.12	0.75-1.67	0.5814
	Proficient	1.46	1.34-1.58	<0.0001
	Adv proficient	1.87	1.62-2.17	<0.0001

Table B.11. Cox proportional hazard model of time since high school graduation to matriculation in a 2-year college: by high school type and performance on the HSPA exam (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, and special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	0.88	0.78-0.99	0.0274
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.64	0.41-1.00	0.0527
	Proficient	1.22	1.10-1.36	0.0002
	Adv proficient	0.52	0.37-0.74	0.0003
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	0.96	0.59-1.58	0.8854
	Proficient	0.72	0.64-0.80	<0.0001
	Adv proficient	0.34	0.25-0.46	<0.0001

Table B.12. Cox proportional hazard model of time since high school graduation to matriculation in a 4-year college: by high school type and performance on the HSPA exam (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.01	1.81-2.22	<0.0001
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.70	0.34-1.44	0.3357
	Proficient	2.03	1.72-2.39	<0.0001
	Adv proficient	3.12	2.50-3.91	<0.0001
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	1.09	0.52-2.29	0.8279
	Proficient	2.64	2.31-3.01	<0.0001
	Adv proficient	4.29	3.54-5.19	<0.0001

Table B.13. Cox proportional hazard model of time since high school graduation to matriculation in any college: by high school type and per 10 unit increase in HSPA scores (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, and special education.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.40	1.30-1.52	<0.0001
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.13	1.11-1.15	<0.0001
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.08	1.06-1.09	<0.0001

Table B.14. Cox proportional hazard model of time since high school graduation to matriculation in a 2-year college: by high school type and per 10 unit increase in HSPA language arts (linear, quadratic and cubic terms) and mathematics scores (linear and quadratic terms)(n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Parameter Estimate	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	---	1.00	---	---
	Yes	-0.04	0.96	0.85-1.08	0.4884
HSPA Lang	Linear	-1.186	---	---	0.0048
	Quadratic	0.085	---	---	0.0003
	Cubic	-0.002	---	---	<0.0001
HSPA Math	Linear	0.647	---	---	<0.0001
	Quadratic	-0.18	---	---	<0.0001

Table B.15. Cox proportional hazard model of time since high school graduation to matriculation in a 4-year college: by high school type and per 10 unit increase in HSPA Language Arts and Mathematics scores (n=7,433). Parameters are adjusted for gender, race/ethnicity, economic disadvantage, and special education.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.62	1.45-1.81	<0.0001
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.21	1.18-1.25	<0.0001
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.19	1.16-1.22	<0.0001

Table B.16. Cox proportional hazard model of time since high school graduation to matriculation in any college (n=7,433). Parameters are adjusted for HSPA scores used as continuous variables and type of high school.

Variable	Value	Hazard Ratio	95% CI	p-value
Gender/Ethnicity	Black female (ref)	1.00	---	---
	Hispanic Female	0.87	0.79-0.95	0.0022
	White Female	0.66	0.58-0.77	<0.0001
	Black male	0.77	0.71-0.84	<0.0001
	Hispanic male	0.68	0.61-0.75	<0.0001
	White male	0.51	0.43-0.60	<0.0001
	Other (male or female)	0.90	0.70-1.16	0.4322
Economically disadvantaged	No (ref)	1.00	---	---
	Yes	1.02	0.96-1.09	0.5141
Special Education	No (ref)	1.00	---	---
	Yes	1.23	1.07-1.41	0.0037
HS Grad Year	2004	1.00	---	---
	2005	0.97	0.89-1.06	0.5224
	2006	1.01	0.93-1.10	0.7580
	2007	1.19	1.09-1.30	0.0001

Table B.17. Cox proportional hazard model of time since high school graduation to matriculation in a 2-year college (n=7,433). Parameters are adjusted for HSPA scores used as continuous variables (including quadratic and cubic terms as in Table B.14) and type of high school.

Variable	Value	Hazard Ratio	95% CI	p-value
Gender/Ethnicity	Black female (ref)	1.00	---	---
	Hispanic Female	1.24	1.10-1.40	0.0005
	White Female	0.99	0.80-1.22	0.9110
	Black male	0.90	0.81-1.00	0.0480
	Hispanic male	1.08	0.95-1.24	0.2321
	White male	0.92	0.73-1.16	0.4725
	Other male or female	1.44	1.02-2.04	0.0376
Economically disadvantaged	No (ref)	1.00	---	---
	Yes	1.00	0.92-1.08	0.9130
Special Education	No (ref)	1.00	---	---
	Yes	1.32	1.11-1.57	0.0013
HS grad year	2004	1.00	---	---
	2005	1.04	0.93-1.17	0.4811
	2006	1.12	1.00-1.26	0.0566
	2007	1.14	1.01-1.28	0.0359

Table B.18. Cox proportional hazard model of time since high school graduation to matriculation in a 4-year college (n=7,433). Parameters are adjusted for HSPA scores used as continuous variables, and type of high school.

Variable	Value	Hazard Ratio	95% CI	p-value
Gender/Ethnicity	Black female (ref)	1.00	---	---
	Hispanic Female	0.70	0.60-0.81	<0.0001
	White Female	0.60	0.49-0.74	<0.0001
	Black male	0.75	0.67-0.85	<0.0001
	Hispanic male	0.52	0.43-0.62	<0.0001
	White male	0.45	0.35-0.58	<0.0001
	Other male or female	0.67	0.47-0.95	0.0252
Economically disadvantaged	No (ref)	1.00	---	---
	Yes	1.04	0.95-1.14	0.3962
Special Education	No (ref)	1.00	---	---
	Yes	1.05	0.78-1.41	0.7435
HS grad year	2004	1.00	---	---
	2005	0.91	0.80-1.04	0.1639
	2006	0.90	0.79-1.02	0.0964
	2007	1.12	0.98-1.28	0.0907

Table B.19. Cox proportional hazard model of time since high school graduation to matriculation in any college: by specific high school (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, graduation cohort, and HSPA scores used as continuous variables.

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	1.08	0.94-1.24	0.2555
	Central HS	1.10	0.96-1.26	0.1919
	East Side HS	1.02	0.89-1.18	0.7586
	Weequahic HS	1.03	0.90-1.18	0.6685
	West Side HS	0.94	0.83-1.07	0.3512
Magnet High School	Arts HS	1.53	1.32-1.77	<0.0001
	Science HS	1.52	1.30-1.78	<0.0001
	Technology HS	1.38	1.18-1.61	<0.0001
	University HS	1.31	1.12-1.53	0.0006

Table B.20. Cox proportional hazard model of time since high school graduation to matriculation in a 2-year college: by specific high school (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, graduation cohort, and HSPA scores used as continuous variables (including quadratic and cubic terms as used in Table B.14).

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	1.18	1.00-1.41	0.0513
	Central HS	1.16	0.98-1.38	0.0878
	East Side HS	1.23	1.02-1.47	0.0257
	Weequahic HS	1.17	0.98-1.39	0.0773
	West Side HS	1.06	0.90-1.25	0.4842
Magnet High School	Arts HS	1.14	0.92-1.41	0.2179
	Science HS	0.89	0.67-1.17	0.3907
	Technology HS	1.27	1.04-1.57	0.0211
	University HS	0.84	0.64-1.09	0.1854

Table B.21. Cox proportional hazard model of time since high school graduation to matriculation in a 4-year college: by specific high school (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and HSPA scores used as continuous variables.

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	0.82	0.65-1.04	0.1006
	Central HS	0.99	0.78-1.25	0.9191
	East Side HS	0.78	0.62-0.99	0.0374
	Weequahic HS	0.89	0.71-1.12	0.3100
	West Side HS	0.89	0.72-1.09	0.2668
Magnet High School	Arts HS	1.46	1.18-1.80	0.0004
	Science HS	1.50	1.20-1.86	0.0003
	Technology HS	1.34	1.06-1.69	0.0133
	University HS	1.34	1.08-1.66	0.0074

Appendix C. Multivariate Models of Time Since High School Graduation to Earning a College Degree (all high school graduates)

The following tables provide the results of a series of Cox proportional hazards models of time since high school graduation to earning a college degree. All models adjust for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort. One set of models also adjusts for HSPA scores in mathematics and language arts.

3.1 Models of Earning a College Degree That Do Not Adjust for HSPA Scores

Table C.1. Cox proportional hazards model of time since high school graduation to earning any college degree (n=7,465).

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	0.96	0.80-1.15	0.6388
	White-female	2.31	1.87-2.86	<0.0001
	Black-male	0.59	0.49-0.72	<0.0001
	Hispanic-male	0.56	0.44-0.71	<0.0001
	White-male	1.26	0.96-1.66	0.0990
	Other-male or female	1.08	0.68-1.69	0.7546
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	0.96	0.84-1.09	0.7546
Special Education	No (ref)	1.00	---	---
	Yes	0.24	0.15-0.37	0.5297
Magnet High School	No (ref)	1.00	---	---
	Yes	4.43	3.88-5.05	<0.0001
Grad Year	2004 (ref)	1.00	---	---
	2005	1.05	0.88-1.24	0.5919
	2006	0.91	0.76-1.10	0.3365
	2007	1.13	0.91-1.40	0.2705

Table C.2. Cox proportional hazards model of time since high school graduation to earning a 2-year college degree (n=7,465).

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	1.91	1.34-2.72	0.0003
	White-female	2.51	1.58-3.98	<0.0001
	Black-male	0.80	0.54-1.19	0.2734
	Hispanic-male	1.14	0.74-1.77	0.5454
	White-male	1.96	1.15-3.36	0.0139
	Other-male or female	0.69	0.17-2.83	0.6068
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	1.10	0.85-1.44	0.4653
Special Education	No (ref)	1.00	---	---
	Yes	0.47	0.25-0.86	0.0151
Magnet High School	No (ref)	1.00	---	---
	Yes	1.48	1.13-1.93	0.0044
Grad Year	2004 (ref)	1.00	---	---
	2005	0.85	0.60-1.20	0.3541
	2006	0.83	0.58-1.20	0.3240
	2007	1.03	0.69-1.55	0.8792

Table C.3. Cox proportional hazards model of time since high school graduation to earning a 4-year college degree (n=7,465).

Variable	Value	Hazard ratio	95% CI	p-value
Race/ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	0.74	0.60-0.92	0.0061
	White-female	2.25	1.78-2.84	<0.0001
	Black-male	0.55	0.44-0.69	<0.0001
	Hispanic-male	0.46	0.34-0.61	<0.0001
	White-male	1.09	0.80-1.49	0.5811
	Other-male or female	1.09	0.67-1.76	0.7290
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	0.93	0.80-1.08	0.3515
Special Education	No (ref)	1.00	---	---
	Yes	0.14	0.08-0.28	<0.0001
Magnet High School	No (ref)	1.00	---	---
	Yes	5.90	5.07-6.88	<0.0001
Grad Year	2004	1.00	---	---
	2005	1.11	0.92-1.34	0.2821
	2006	0.92	0.75-1.14	0.4470
	2007	1.14	0.89-1.46	0.2979

Table C.4. Cox proportional hazard model of time since high school graduation to earning any college degree: by specific high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	Hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	1.03	0.69-1.54	0.8826
	Central HS	1.17	0.78-1.77	0.4475
	East Side	1.71	1.19-2.47	0.0039
	Weequahic HS	0.96	0.61-1.50	0.8599
	West Side HS	1.35	0.93-1.98	0.1170
Magnet	Arts HS	4.53	3.20-6.41	<0.0001
	Science HS	8.64	6.18-12.09	<0.0001
	Technology HS	3.43	2.35-5.00	<0.0001
	University HS	5.82	4.15-8.17	<0.0001

Table C.5. Cox proportional hazard model of time since high school graduation to earning a 2-year degree: by specific high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	Hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	1.41	0.71-2.80	0.3237
	Central HS	1.52	0.76-3.05	0.2397
	East Side	2.16	1.11-4.18	0.0226
	Weequahic HS	0.98	0.43-2.20	0.9540
	West Side HS	1.12	0.55-2.30	0.7491
Magnet	Arts HS	2.54	0.29-5.02	0.0073
	Science HS	2.10	1.04-4.24	0.0393
	Technology HS	2.46	1.22-5.00	0.0124
	University HS	1.97	0.95-4.09	0.0702

Table C.6. Cox proportional hazard model of time since high school graduation to earning a 4-year college degree: by specific high school (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	Hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS	1.00	---	---
	Barringer HS	0.77	0.46-1.29	0.3207
	Central HS	1.11	0.68-1.80	0.6869
	East Side	1.55	1.01-2.39	0.0464
	Weequahic HS	0.97	0.57-1.64	0.8991
	West Side HS	1.46	0.94-2.27	0.0901
Magnet	Arts HS	5.19	3.47-7.76	<0.0001
	Science HS	11.32	7.69-16.66	<0.0001
	Technology HS	3.94	2.54-6.12	<0.0001
	University HS	7.30	4.95-10.76	<0.0001

4.1 Models of the Influence of HSPA Scores on Earning a College Degree

The following models examine the relationship of HSPA performance, high school type, and demographic variables to earning a college degree.

Table C.7. Cox proportion hazard model of time since high school graduation to earning any college degree: high school type and method of high school graduation (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.42	2.09-2.79	<0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	0.89	0.33-2.37	0.8123
	Partial SRA	1.91	1.41-2.60	<0.0001
	HSPA	5.25	4.03-6.84	<0.0001

Table C.8. Cox proportion hazard model of time since high school graduation to earning a 2-year college degree: by high school type and method of high school graduation (n=7,465). Parameters are adjusted for gender/ race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.16	0.86-1.58	0.3347
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	0.54	0.15-2.00	0.3591
	Partial SRA	2.05	1.36-3.09	0.0006
	HSPA	2.10	1.41-3.11	0.0002

Table C.9. Cox proportion hazard model of time since high school graduation to earning a 4-year college degree: by high school type and method high school graduation (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.90	2.46-3.42	<0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	1.32	0.30-5.81	0.7100
	Partial SRA	2.08	1.36-3.17	0.0007
	HSPA	8.12	5.65-11.68	<0.0001

Table C.10. Cox proportion hazard model of time since high school graduation to earning any college degree: by high school type and performance on the HSPA exam (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.05	1.76-2.39	<0.0001
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.38	0.13-1.17	0.0926
	Proficient	2.08	1.59-2.73	<0.0001
	Adv proficient	3.67	2.63-5.12	<0.0001
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	1.37	0.43-4.32	0.5954
	Proficient	2.53	2.04-3.12	<0.0001
	Adv proficient	4.02	3.03-5.34	<0.0001

Table C.11. Cox proportion hazard model of time since high school graduation to earning a 2-year college degree: by high school type and performance on the HSPA exam (n=7,465). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.23	0.91-1.68	0.1827
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	1.85	0.22-15.26	0.5676
	Proficient	1.66	1.13-2.43	0.0104
	Adv proficient	1.11	0.51-2.41	0.7878
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	0.22	0.03-1.79	0.1572
	Proficient	1.26	0.90-1.78	0.1817
	Adv proficient	0.70	0.33-1.46	0.3370

Table C.12. Cox proportion hazard model of time since high school graduation to earning a 4-year: by high school type and performance on the HSPA exam (n=7,465). Parameters are adjusted for gender/ race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.36	1.98-2.80	<0.0001
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.17	0.04-0.80	0.0242
	Proficient	2.88	1.98-4.19	<0.0001
	Adv proficient	5.64	3.68-8.64	<0.0001
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	3.43	0.78-15.07	0.1027
	Proficient	3.11	2.39-4.04	<0.0001
	Adv proficient	5.70	4.11-7.92	<0.0001

Table C.13. Cox proportion hazard model of time since high school graduation to earning any college degree: high school type and per 10 unit increase in HSPA language arts and mathematics scores (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, and special education.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.67	1.42-1.97	<0.0001
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.21	1.16-1.27	<0.0001
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.19	1.15-1.23	<0.0001

Table C.14. Cox proportion hazard model of time since high school graduation to earning a 2-year college degree: high school type and per 10 unit increase in HSPA language arts and mathematics scores (n=7,433). Parameters are adjusted for gender, race/ethnicity, economic disadvantage, and special education.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.01	0.72-1.41	0.9553
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.07	1.00-1.15	0.0662
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.06	1.00-1.14	0.0699

Table C.15. Cox proportion hazard model of time since high school graduation to earning a 4-year college degree: high school type and per 10 unit increase in HSPA language arts and mathematics scores (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, and special education.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.88	1.56-2.27	<0.0001
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.29	1.23-1.36	<0.0001
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.21	1.16-1.26	<0.0001

Table C.16. Cox proportional hazards model of time since high school graduation to earning any college degree (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, school type, graduation cohort, and HSPA scores used as continuous variables.

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	1.11	0.92-1.33	0.2822
	White-female	1.55	1.24-1.92	<0.0001
	Black-male	0.61	0.50-0.74	<0.0001
	Hispanic-male	0.57	0.45-0.74	<0.0001
	White-male	0.87	0.66-1.15	0.3298
	Other-male or female	0.91	0.57-1.43	0.6728
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	1.03	0.90-1.18	0.6279
Special Education	No (ref)	1.00	---	---
	Yes	1.18	0.73-1.88	0.5023
Magnet High School	No (ref)	1.00	---	---
	Yes	1.67	1.42-1.97	<0.0001
HS Grad Year	2004 (ref)	1.00	---	---
	2005	0.99	0.84-1.18	0.9471
	2006	0.79	0.66-0.96	0.0151
	2007	0.87	0.70-1.09	0.2195

Table C.17. Cox proportional hazards model of time since high school graduation to earning a 2-year college degree (n=7,433). Parameters are adjusted for gender/ race/ethnicity, economic disadvantage, special education, school type, graduation cohort, and HSPA scores used as continuous variables.

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	2.02	1.42-2.89	0.0001
	White-female	2.12	1.32-3.40	0.0019
	Black-male	0.81	0.54-1.22	0.3162
	Hispanic-male	1.19	0.76-1.86	0.4422
	White-male	1.68	0.96-2.92	0.0665
	Other-male or female	0.66	0.16-2.72	0.5681
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	1.14	0.87-1.48	0.3502
Special Education	No (ref)	1.00	---	---
	Yes	0.86	0.43-1.70	0.6592
Magnet High School	No (ref)	1.00	---	---
	Yes	1.01	0.72-1.41	0.9553
HS Grad Year	2004 (ref)	1.00	---	---
	2005	0.84	0.60-1.19	0.3369
	2006	0.80	0.55-1.16	0.2337
	2007	0.94	0.62-1.42	0.7813

Table C.18. Cox proportional hazards model of time since high school graduation to earning a 4-year college degree (n=7,433). Parameters are adjusted for gender/ race/ethnicity, economic disadvantage, special education, school type, graduation cohort, and HSPA scores used as continuous variables.

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	0.87	0.70	0.2168
	White-female	1.43	1.13	0.0029
	Black-male	0.58	0.46	<0.0001
	Hispanic-male	0.48	0.36	<0.0001
	White-male	0.73	0.53	0.0571
	Other-male or female	0.89	0.55	0.6367
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	1.03	0.88	0.7335
Special Education	No (ref)	1.00	---	---
	Yes	0.94	0.47	0.8449
Magnet High School	No (ref)	1.00	---	---
	Yes	1.88	1.56	<0.0001
HS Grad Year	2004 (ref)	1.00	---	---
	2005	1.04	0.86	0.7147
	2006	0.79	0.64	0.0270
	2007	0.85	0.66	0.2006

Table C.19. Cox proportion hazard model time since high school graduation to earning any college degree: by specific high school type: (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, graduation cohort, and HSPA scores used as continuous variables.

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	1.08	0.94-1.24	0.2555
	Central HS	1.10	0.96-1.26	0.1919
	East Side HS	1.02	0.89-1.18	0.7586
	Weequahic HS	1.03	0.90-1.18	0.6685
	West Side HS	0.94	0.83-1.07	0.3512
Magnet High School	Arts HS	1.53	1.32-1.77	<0.0001
	Science HS	1.52	1.30-1.78	<0.0001
	Technology HS	1.38	1.18-1.61	<0.0001
	University HS	1.31	1.12-1.53	0.0006

Table C.20. Cox proportion hazard model time since high school graduation to earning a 2-year college degree: by specific high school: (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, graduation cohort, and HSPA scores used as continuous variables.

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	1.18	1.00-1.41	0.0513
	Central HS	1.16	0.98-1.38	0.0878
	East Side HS	1.23	1.02-1.47	0.0257
	Weequahic HS	1.17	0.98-1.39	0.0773
	West Side HS	1.06	0.90-1.25	0.4842
Magnet High School	Arts HS	1.14	0.92-1.41	0.2179
	Science HS	0.89	0.67-1.17	0.3907
	Technology HS	1.27	1.04-1.57	0.0211
	University HS	0.84	0.64-1.09	0.1854

Table C.21. Cox proportion hazard model time since high school graduation to earning a 4-year college degree: by specific high school (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and HSPA scores used as continuous variables.

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	0.82	0.65-1.04	0.1006
	Central HS	0.99	0.78-1.25	0.9191
	East Side HS	0.78	0.62-0.99	0.0374
	Weequahic HS	0.89	0.71-1.12	0.3100
	West Side HS	0.89	0.72-1.09	0.2668
Magnet High School	Arts HS	1.46	1.18-1.80	0.0004
	Science HS	1.50	1.20-1.86	0.0003
	Technology HS	1.34	1.06-1.69	0.0133
	University HS	1.34	1.08-1.66	0.0074

Appendix D. Multivariate Models of the Time from College Matriculation to Earning a College Degree (Students Who Went to College or University)

The following tables provide the results of a series of Cox proportional hazards models of time since matriculation in college to earning a college degree. All models adjust for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort. One set of models also adjusts for HSPA scores in mathematics and language arts.

5.1 Models of Earning a College Degree That Do Not Adjust for HSPA scores

Table D.1. Cox proportional hazards model of time since matriculation in college to earning any college degree (students who matriculated in any college)(n=4,540).

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	1.04	0.87-1.26	0.6426
	White-female	2.46	1.98-3.05	<0.0001
	Black-male	0.68	0.56-0.83	0.0001
	Hispanic-male	0.68	0.53-0.87	0.0024
	White-male	1.52	1.14-2.02	0.0038
	Other-male or female	1.10	0.70-1.72	0.6941
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	0.97	0.85-1.11	0.7005
Special Education	No (ref)	1.00	---	---
	Yes	0.41	0.26-0.64	<0.0001
Magnet High School	No (ref)	1.00	---	---
	Yes	2.78	2.44-3.18	<0.0001
HS Grad Year	2004 (ref)	1.00	---	---
	2005	1.15	0.97-1.37	0.1016
	2006	0.98	0.81-1.18	0.8122
	2007	1.27	1.02-1.57	0.0322

Table D.2. Cox proportional hazards model of time since matriculation in college to earning a 2-year college degree (students who matriculated in a 2-year college)(n=4,541).

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	1.95	1.36-2.80	0.0003
	White-female	2.50	1.55-4.04	0.0002
	Black-male	0.95	0.64-1.42	0.8060
	Hispanic-male	1.35	0.86-2.13	0.1950
	White-male	1.97	1.08-3.60	0.0263
	Other-male or female	0.64	0.16-2.60	0.5298
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	1.11	0.84-1.46	0.4731
Special Education	No (ref)	1.00	---	---
	Yes	0.87	0.47-1.60	0.6554
Magnet High School	No (ref)	1.00	---	---
	Yes	0.99	0.76-1.31	0.9595
HS Grad Year	2004 (ref)	1.00	---	---
	2005	0.87	0.61-1.24	0.4468
	2006	0.85	0.59-1.24	0.4001
	2007	1.00	0.66-1.51	0.9876

Table D.3. Cox proportional hazards model of time since matriculation in college to earning a 4-year college degree (students who matriculated in a 4-year college)(n=4,540).

Variable	Value	Hazard ratio	95% CI	p-value
Race/Ethnicity-Gender	Black-female (ref)	1.00	---	---
	Hispanic-female	0.82	0.66-1.02	0.0708
	White-female	2.38	1.89-3.01	<0.0001
	Black-male	0.63	0.50-0.78	<0.0001
	Hispanic-male	0.57	0.43-0.76	0.0001
	White-male	1.37	1.00-1.88	0.0505
	Other-male or female	1.15	0.71-1.85	0.5754
Economic Disadvantage	No (ref)	1.00	---	---
	Yes	0.95	0.82-1.10	0.4797
Special Education	No (ref)	1.00	---	---
	Yes	0.24	0.12-0.46	<0.0001
Magnet High School	No (ref)	1.00	---	---
	Yes	3.61	3.09-4.20	<0.0001
HS Grad Year	2004	1.00	---	---
	2005	1.24	1.02-1.50	0.0275
	2006	1.00	0.81-1.23	0.9758
	2007	1.34	1.04-1.71	0.0215

Table D.4. Cox proportional hazard model of time since matriculation in college to earning any college degree: by specific high school (n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	Hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	0.98	0.65-1.48	0.9234
	Central HS	1.12	0.74-1.69	0.5867
	East Side	1.78	1.21-2.52	0.0029
	Weequahic HS	0.88	0.56-1.38	0.5808
	West Side HS	1.32	0.90-1.93	0.1529
Magnet	Arts HS	2.84	2.01-4.02	<0.0001
	Science HS	4.83	3.45-6.76	<0.0001
	Technology HS	2.40	1.64-3.50	<0.0001
	University HS	3.52	2.51-4.93	<0.0001

Table D.5. Cox proportional hazard model of time since matriculation in college to earning a 2-year college degree: by specific high school (n=4,541). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	Hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	1.16	0.57-2.35	0.6888
	Central HS	1.48	0.74-2.97	0.2726
	East Side	1.98	1.02-3.87	0.0450
	Weequahic HS	0.90	0.40-2.03	0.8035
	West Side HS	1.07	0.52-2.19	0.8578
Magnet	Arts HS	1.56	0.79-3.09	0.2019
	Science HS	1.18	0.58-2.39	0.6508
	Technology HS	1.68	0.83-3.41	0.1510
	University HS	1.18	0.57-2.45	0.6591

Table D.6. Cox proportional hazard model of time since matriculation in college to earning a 4-year college degree: by specific high school (n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Type of High School	Value	Hazard ratio	95% CI	p-value
Comprehensive	Shabazz HS (ref)	1.00	---	---
	Barringer HS	0.82	0.49-1.37	0.4494
	Central HS	1.05	0.64-1.72	0.8442
	East Side	1.64	1.07-2.53	0.0239
	Weequahic HS	0.89	0.53-1.51	0.6636
	West Side HS	1.43	0.92-2.22	0.1116
Magnet	Arts HS	3.28	2.19-4.90	<0.0001
	Science HS	6.38	4.34-9.40	<0.0001
	Technology HS	2.74	1.77-4.25	<0.0001
	University HS	4.45	3.02-6.56	<0.0001

6.1 Models That Adjust for HSPA Performance

The following models examine the relationship of HSPA performance, high school type, and demographic variables to earning a college degree.

Table D.7. Cox proportional hazard model of time since matriculation in college to earning any degree: by high school type and method of high school graduation (students who matriculated in college)(n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.82	1.57-2.10	<0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	1.42	0.54-3.69	0.4764
	Partial SRA	1.71	1.25-2.34	0.0008
	HSPA	3.72	2.83-4.88	<0.0001

Table D.8. Cox proportional hazard model of time since matriculation in college to earning a 2-year college degree: by high school type and method of high school graduation (students who matriculated in a 2-year college)(n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	0.94	0.69-1.28	0.7044
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	0.78	0.21-2.89	0.7090
	Partial SRA	1.82	1.18-2.80	0.0064
	HSPA	1.41	0.93-2.14	0.1050

Table D.9. Cox proportional hazard model of time since matriculation in college to earning a 4-year college degree: by high school type and method of high school graduation (students who matriculated in a 4-year college)(n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	2.14	1.82-2.52	<0.0001
Graduation Type	SRA (ref)	1.00	---	---
	Exempt	1.99	0.49-8.12	0.3369
	Partial SRA	1.78	1.16-2.72	0.0078
	HSPA	5.50	3.82-7.90	<0.0001

Table D.10. Cox proportional hazard model of time since matriculation in college to earning any degree: by high school graduation and HSPA language arts and mathematics proficiency (students who matriculated in college)(n=7,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.59	1.36-1.85	<0.0001
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.65	0.22-1.90	0.4302
	Proficient	1.69	1.27-2.25	0.0003
	Adv proficient	2.84	2.02-4.01	<0.0001
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	1.42	0.48-4.18	0.5268
	Proficient	2.11	1.70-2.63	<0.0001
	Adv proficient	3.06	2.30-4.07	<0.0001

Table D.11. Cox proportional hazard model of time since matriculation in college to earning a 2-year college degree: by high school type and HSPA language arts and mathematics proficiency (students who matriculated in a 2-year college)(n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.02	0.75-1.40	0.8801
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	2.44	0.39-15.42	0.3427
	Proficient	1.40	0.93-2.11	0.1093
	Adv proficient	0.89	0.41-1.95	0.7746
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	0.27	0.04-1.67	0.1594
	Proficient	1.00	0.70-1.43	0.9911
	Adv proficient	0.44	0.20-0.96	0.0390

Table D.12. Cox proportional hazard model of time since matriculation in college to earning a 4-year college degree: by high school type and HSPA language arts and mathematics proficiency)(students who matriculated in a 4-year college (n=4,540). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.79	1.51-2.13	<0.0001
HSPA Lang	Partially proficient (ref)	1.00	---	---
	Exempt	0.29	0.06-1.31	0.1065
	Proficient	2.18	1.49-3.18	<0.0001
	Adv proficient	4.14	2.69-6.37	<0.0001
HSPA Math	Partially proficient (ref)	1.00	---	---
	Exempt	3.22	0.82-12.62	0.0925
	Proficient	2.61	2.00-3.41	<0.0001
	Adv proficient	4.41	3.17-6.13	<0.0001

Table D.13. Cox proportional hazard model of time since matriculation in college to earning any college degree: high school type and per 10 unit increase in HSPA language arts and mathematics scores (high school graduates who matriculated in any college)(n=7,430). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.41	1.20-1.66	<0.0001
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.14	1.09-1.19	<0.0001
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.16	1.12-1.20	<0.0001

Table D.14. Cox proportional hazard model of time since matriculation in college to earning a 2-year college degree: high school type and per 10 unit increase in HSPA language arts and mathematics scores (high school graduates who matriculated in a 2-year college)(n=4,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	0.95	0.68-1.66	0.7525
HSPA Lang	Per 10 unit increase	0.99	0.92-1.07	0.8114
HSPA Math	Per 10 unit increase	1.02	0.95-1.10	0.5188

Table D.15. Cox proportional hazard model of time since matriculation in college to earning a 4-year college degree: high school type and per 10 unit increase in HSPA language arts and mathematics scores (high school graduates who matriculated in a 4-year college) per 10 unit increase in HSPA language arts and mathematics scores (n=4,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and graduation cohort.

Variable	Value	Hazard Ratio	95% CI	p-value
Magnet High School	No (ref)	1.00	---	---
	Yes	1.55	1.29-1.86	<0.0001
HSPA Lang	Reference	1.00	---	---
	Per 10 unit increase	1.23	1.16-1.29	<0.0001
HSPA Math	Reference	1.00	---	---
	Per 10 unit increase	1.18	1.13-1.22	<0.0001

Table D.16. Cox proportional hazard model of time since matriculation in college to earning any college degree (high school graduates who matriculated in a any college) (n=7,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, school type, graduation cohort, and HSPA scores used as continuous variables.

Variable	Value	Hazard Ratio	95% CI	p-value
Gender/Ethnicity	Black female (ref)	1.00	---	---
	Hispanic Female	1.16	0.97-1.40	0.1085
	White Female	1.83	1.46-2.28	<0.0001
	Black male	0.68	0.56-0.84	0.0002
	Hispanic male	0.67	0.52-0.86	0.0015
	White male	1.11	0.83-1.49	0.4666
	Other (male or female)	1.01	0.64-1.59	0.9689
Economically disadvantaged	No (ref)	1.00	---	---
	Yes	1.02	0.89-1.16	0.8139
Special Education	No (ref)	1.00	---	---
	Yes	1.14	0.71-1.80	0.5939
HS grad year	2004	---	---	---
	2005	1.09	0.92-1.30	0.3140
	2006	0.85	0.70-1.02	0.0843
	2007	0.98	0.79-1.22	0.8722

Table D.17. Cox proportional hazard model of time since matriculation in college to earning a 2-year college degree (high school graduates who matriculated in a 2-year college) (n=4,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, school type, graduation cohort, and HSPA scores used as continuous variables.

Variable	Value	Hazard Ratio	95% CI	p-value
Gender/Ethnicity	Black female (ref)	1.00	---	---
	Hispanic Female	1.95	1.35-2.82	0.0003
	White Female	2.42	1.48-3.96	0.0004
	Black male	0.94	0.63-1.41	0.7637
	Hispanic male	1.33	0.83-2.11	0.2323
	White male	1.88	1.02-3.49	0.0444
	Other (male or female)	0.62	0.15-2.55	0.5096
Economically disadvantaged	No (ref)	1.00	---	---
	Yes	1.11	0.84-1.46	0.4691
Special Education	No (ref)	1.00	---	---
	Yes	0.93	0.47-1.82	0.8282
HS grad year	2004	---	---	---
	2005	0.86	0.60-1.23	0.4144
	2006	0.83	0.57-1.21	0.3375
	2007	0.97	0.63-1.48	0.8794

Table D.18. Cox proportional hazard model of time from matriculation to earning a 4-year degree (graduates who matriculated in a 4-year college)(n=4,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, school type, graduation cohort, and HSPA scores used as continuous variables.

Variable	Value	Hazard Ratio	95% CI	p-value
Gender/Ethnicity	Black female (ref)	1.00	---	---
	Hispanic Female	0.93	0.75-1.16	0.5258
	White Female	1.69	1.33-2.14	<0.0001
	Black male	0.65	0.52-0.81	0.0001
	Hispanic male	0.57	0.43-0.76	0.0002
	White male	0.97	0.70-1.34	0.8600
	Other male or female	1.04	0.64-1.69	0.8595
Economically disadvantaged	No (ref)	1.00	---	---
	Yes	1.00	0.86-1.16	0.9715
Special Education	No (ref)	1.00	---	---
	Yes	0.87	0.44-1.70	0.6756
HS grad year	2004	1.00	---	---
	2005	1.16	0.96-1.41	0.1275
	2006	0.85	0.69-1.05	0.1408
	2007	0.99	0.76-1.27	0.9167

Table D.19. Cox proportional hazard model of time since matriculation in college to earning any college degree: by specific high school (graduates who matriculated in any college) (n=7,433). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and HSPA scores used as continuous variables

Variable	Value	Hazard Ratio	95% CI	p-value
Comprehensive High Schools	Shabazz HS	1.00	---	---
	Barringer HS	1.11	0.74-1.68	0.6072
	Central HS	1.24	0.82-1.88	0.3007
	East Side HS	1.58	1.09-2.28	0.0157
	Weequahic HS	0.83	0.53-1.30	0.4141
	West Side HS	1.26	0.86-1.83	0.2415
Magnet High Schools	Arts HS	1.69	1.18-2.42	0.0038
	Science HS	2.07	1.45-2.96	<0.0001
	Technology HS	1.68	1.15-2.46	0.0079
	University HS	1.57	1.09-2.24	0.0142

Table D.20. Cox proportional hazard model of time since matriculation in college to earning a 2-year college degree: by specific high school (graduates who matriculated in a 2-year college)(n=4,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and HSPA scores used as continuous variables

Variable	Value	Hazard Ratio	95% CI	p-value
Comprehensive High Schools	Shabazz HS	1.00	---	---
	Barringer HS	1.17	0.58-2.39	0.6604
	Central HS	1.49	0.74-3.01	0.2622
	East Side HS	1.96	1.00-3.82	0.0501
	Weequahic HS	0.90	0.40-2.02	0.7900
	West Side HS	1.06	0.52-2.17	0.8745
Magnet High Schools	Arts HS	1.47	0.73-2.96	0.2847
	Science HS	1.05	0.50-2.24	0.8904
	Technology HS	1.61	0.79-3.30	0.1913
	University HS	1.06	0.49-2.80	0.8868

Table D.21. Cox proportional hazard model of time since matriculation in college to earning a 4-year degree: by specific high school (graduates who matriculated in a 4-year college) (n=4,530). Parameters are adjusted for gender/race/ethnicity, economic disadvantage, special education, and HSPA scores used as continuous variables

Type of School	Value	Hazard Ratio	95% CI	p-value
Comprehensive High School	Shabazz HS	1.00	---	---
	Barringer HS	0.96	0.57-1.60	0.8593
	Central HS	1.20	0.74-1.97	0.4582
	East Side HS	1.43	0.92-2.21	0.1110
	Weequahic HS	0.82	0.49-1.40	0.4706
	West Side HS	1.35	0.87-2.10	0.1833
Magnet High School	Arts HS	1.72	1.14-2.60	0.0095
	Science HS	2.21	1.47-3.34	0.0001
	Technology HS	1.78	1.14-2.77	0.0111
	University HS	1.61	1.07-2.43	0.0226

Appendix E. Permutations of Having Attended 2-year and 4-year Colleges and Universities

The following tables show the percent of students who earned a college degree by different permutations of attending 2-year and 4-year schools. **Table E.1** is for the 2004 cohort, and shows 41.7% of high school graduates did not matriculate in college. The table shows 9.8% of graduates attended a 4-year college and earned no degree; another 8.5% attended a 4-year college and earned a 4-year degree. In other words, 46.5% of graduates who only attended a 4-year college earned a 4-year degree. Table E.1 shows graduates who attended both 2-year and 4-year colleges and earned college degrees were 8.4% of graduates.

Table E.1. Cohort 2004. All high schools

	Matriculated College		*Received Degree*			
Group	2-year	4-year	2-year	4-year	*N*	*%*
1	No	No	No	No	812	41.7
2	No	Yes	No	No	191	9.8
3	No	Yes	No	Yes	166	8.5
4	Yes	No	No	No	470	24.1
5	Yes	No	Yes	No	19	1.0
6	Yes	Yes	No	No	179	9.2
7	Yes	Yes	No	Yes	47	2.4
8	Yes	Yes	Yes	No	38	2.0
9	Yes	Yes	Yes	Yes	25	1.3
				TOTAL	1947	100.0

Table E.2 provides the same information as broken out by high school type. The table shows half of 2004 comprehensive high school graduates not attending college or earning a college degree. And, a quarter of comprehensive high school graduates attended a 2-year college only and did not earn a degree. Another 12.8% of comprehensive graduates attended a 4-year college and failed to earn a degree.

Table E.2 shows the situation for 2004 magnet high school graduates was considerable better: only 14.8% of students did not attend college. And, 35% of magnet graduates earned a college degree of some sort.

Tables E.3 and **E.4** provide the results of the same analysis for the 2005 graduation cohort.

Table E.2. Cohort 2004. Magnet and Comprehensive High Schools

Group	*Matriculated College*		*Received Degree*		*N*	*%*
	2-year	4-year	2-year	4-year		
Comprehensive High Schools						
1	No	No	No	No	743	50.1
2	No	Yes	No	No	118	8.0
3	No	Yes	No	Yes	62	4.2
4	Yes	No	No	No	363	24.5
5	Yes	No	Yes	No	12	0.8
6	Yes	Yes	No	No	127	8.6
7	Yes	Yes	No	Yes	23	1.6
8	Yes	Yes	Yes	No	21	1.4
9	Yes	Yes	Yes	Yes	13	0.9
				TOTAL	1,482	100.0
Magnet High Schools						
1	No	No	No	No	69	14.8
2	No	Yes	No	No	73	15.7
3	No	Yes	No	Yes	104	22.4
4	Yes	No	No	No	107	23.0
5	Yes	No	Yes	No	7	1.5
6	Yes	Yes	No	No	52	11.2
7	Yes	Yes	No	Yes	24	5.2
8	Yes	Yes	Yes	No	17	3.7
9	Yes	Yes	Yes	Yes	12	2.6
				TOTAL	465	100.0

Table E.3. 2005 Cohort. All High Schools

Group	Matriculated College		Received Degree		N	%
	2-year	4-year	2-year	4-year		
1	No	No	No	No	813	40.6
2	No	Yes	No	No	209	10.4
3	No	Yes	No	Yes	186	9.3
4	Yes	No	No	No	529	26.4
5	Yes	No	Yes	No	22	1.1
6	Yes	Yes	No	No	166	8.3
7	Yes	Yes	No	Yes	33	1.6
8	Yes	Yes	Yes	No	35	1.8
9	Yes	Yes	Yes	Yes	8	0.4
				TOTAL	2,001	100.0

Table E.4. Cohort 2005. Magnet and Comprehensive High Schools

Group	*Matriculated College*		*Received Degree*		*N*	*%*
	2-year	4-year	2-year	4-year		
Comprehensive High Schools						
1	No	No	No	No	738	47.7
2	No	Yes	No	No	133	8.6
3	No	Yes	No	Yes	58	3.8
4	Yes	No	No	No	446	28.8
5	Yes	No	Yes	No	19	1.2
6	Yes	Yes	No	No	112	7.2
7	Yes	Yes	No	Yes	15	1.0
8	Yes	Yes	Yes	No	20	1.3
9	Yes	Yes	Yes	Yes	6	0.4
				TOTAL	1,547	100.0
Magnet High Schools						
1	No	No	No	No	75	16.5
2	No	Yes	No	No	76	16.7
3	No	Yes	No	Yes	128	28.2
4	Yes	No	No	No	83	18.3
5	Yes	No	Yes	No	3	0.7
6	Yes	Yes	No	No	54	11.9
7	Yes	Yes	No	Yes	18	4.0
8	Yes	Yes	Yes	No	15	3.3
9	Yes	Yes	Yes	Yes	2	0.4
				TOTAL	454	100.0

Appendix F. Cumulative proportion of NPS graduates (June & August) who enrolled in college or university by term or year of graduation

Table 33. Cumulative percent of students who had enrolled had in college by the number of terms (3 per year) since high school graduation (see Figure 7).

Year	Term	Graduation Cohort						
		2004	2005	2006	2007	2008	2009	2010
0	0	0	0	0	0	0	0	0
1	1	2.2	1.8	2.7	1.6	1.3	1.6	3.4
	2	38.5	40.6	42.6	41.4	40.2	40.7	38.2
	3	45.1	44.5	48.6	45.8	46.6	46.2	44.4
2	4	45.4	44.7	48.9	46.2	47.3	46.7	45.2
	5	48.4	48.8	51.7	49.6	51.3	49.1	47.1
	6	49.8	50.3	52.6	51.5	53.8	50.9	48.8
3	7	49.9	50.4	52.8	51.9	53.9	51.1	
	8	51.5	51.8	53.5	53.5	55.3	53.0	
	9	52.3	52.2	54.3	54.8	56.5	54.0	
4	10	52.5	52.3	54.5	54.9	56.7		
	11	53.5	53.5	55.5	55.6	57.4		
	12	54.0	54.4	56.2	56.4	57.9		
5	13	54.1	54.6	56.4	56.6			
	14	54.9	55.7	57.2	57.5			
	15	55.3	56.4	57.6	57.9			
6	16	55.4	56.6	58.1				
	17	56.1	57.4	58.7				
	18	56.5	58.2	59.2				
7	19	56.6	58.5					
	20	57.4	59.2					
	21	57.6	59.4					
8	22	57.7						
	23	58.1						
	24	58.3						

Table 34. The annual increment in the proportion of NPS graduates who first enrolled in college (see Figure 8).

	Graduation Cohort							
Year	2004	2005	2006	2007	2008	2009	2010	2011
1	38.4	40.6	42.6	41.4	40.2	40.6	38.2	46.2
2	10.1	8.2	9.1	8.1	11.0	8.6	8.9	
3	3.1	3.1	1.8	3.8	4.1	3.9		
4	2.00	1.6	2.1	2.2	2.1			
5	1.3	2.2	1.6	2.00				
6	1.3	1.7	1.5					
7	1.4	1.7						
8	0.7							

Table 35. The annual increment in the proportion of NPS comprehensive high school graduates who first enrolled in college (see Figure 9).

Year	Term	Graduation Cohort							
		2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*
1	1	1.7	1.8	2.1	0.8	1.3	1.1	2.2	3.5
	2	29.6	33.3	34.0	33.6	32.3	32.3	30.6	36.8
	3	36.2	37.4	40.4	38.4	38.7	38.1	37.9	44.2
2	4	36.4	37.8	40.9	38.8	39.6	38.5	38.8	
	5	39.5	41.6	43.5	42.0	43.5	41.1	41.1	
	6	40.9	43.2	44.4	44.3	46.0	42.8	42.6	
3	7	41.0	43.3	44.6	44.7	46.2	43.1		
	8	42.4	44.9	45.2	46.4	47.5	45.0		
	9	43.3	45.2	45.9	48.0	48.9	46.0		
4	10	43.5	45.2	46.2	48.1	49.1			
	11	44.6	46.2	47.4	48.7	50.0			
	12	45.1	47.0	48.1	49.4	50.5			
5	13	45.3	47.2	48.4	49.6				
	14	46.1	48.3	49.0	50.4				
	15	46.6	49.1	49.5	50.7				
6	16	46.8	49.4	49.8					
	17	47.5	50.2	50.3					
	18	48.0	51.1	51.0					
7	19	48.1	51.3						
	20	48.9	52.0						
	21	49.3	52.4						
8	22	49.3							
	23	49.7							
	24	49.9							

Table 36. The annual increment in the proportion of NPS magnet high school graduates who first enrolled in college (see Figure 10).

Year	Term	Graduation Cohort							
		2004	2005	2006	2007	2008	2009	2010	2011
1	1	3.9	1.8	4.5	4.1	1.2	3.3	6.8	8.8
	2	66.5	65.4	68.6	65.6	68.5	68.1	60.0	71.6
	3	73.8	68.5	73.3	69.2	74.8	74.0	63.9	75.0
2	4	74.0	68.5	73.3	69.2	75.0	74.5	64.2	
	5	76.8	73.1	76.3	72.7	79.0	76.2	65.2	
	6	78.1	74.4	77.4	74.0	81.4	77.9	67.2	
3	7	78.5	74.7	77.6	74.4	81.6	77.9		
	8	80.6	75.6	78.4	75.1	83.2	79.8		
	9	81.1	76.0	79.5	76.1	83.2	81.2		
4	10	81.3	76.2	79.5	76.1	83.8			
	11	81.7	78.4	80.1	77.0	84.1			
	12	82.2	79.7	80.6	78.1				
5	13	82.2	80.0	80.8	78.5				
	14	82.4	80.6	81.8	79.6				
	15	82.8	81.1	82.3	80.4				
6	16	82.8	81.1	83.1					
	17	83.4	81.7	83.8					
	18	83.7	82.4	84.0					
7	19	83.7	82.8						
	20	84.3	83.0						
	21	84.3	83.5						
8	22	84.5							
	23	84.9							
	24	84.9							