

The Research Alliance for
New York City Schools

New York City Goes to College

A First Look at Patterns of College Enrollment, Persistence, and Degree Attainment for NYC High School Students



Vanessa Coca

November 2014

New York City Goes to College: A First Look

Over the past 15 years, in New York City and across the country, expectations for high schools—and high school students—have changed dramatically. Prior to the turn of the century, the City had seen almost 30 years of graduation rates hovering at or below 50 percent. Throughout the 1980s and 1990s, policymakers and educators responded with a near singular focus on reducing dropout rates and increasing the proportion of students who earned a high school diploma. In the early 2000s, the City began to make headway on these seemingly intractable problems. But educators were also confronting a new reality: A high school diploma, once seen as the key to a stable career, could no longer be counted on to open doors in the labor market. In recent years, numerous analyses have underscored this point. One 2013 study, for instance, predicted that, by 2020, 69 percent of jobs in New York State will require some form of post-secondary education.¹

As a result of these changes, high schools are now being called on not only to increase graduation rates, but also to impart knowledge, skills, and experiences that will prepare students to succeed in college. Furthermore, here in New York City and in other districts, public K-12 and post-secondary systems are starting to work together in ways that are largely unprecedented. Where there were once two distinct systems, many now envision a seamless education pipeline that begins in kindergarten and extends through college and a career.

But what does this “pipeline” look like today? As policymakers, educators, and families embrace a post-secondary degree as the new standard for success, there is a clear need to learn more about students’ pathways into and through college. In *New York City Goes to College: A First Look*, we describe patterns of college enrollment, persistence, and completion for students coming out of New York City public schools.² We also begin to explore two sets of factors that may affect college outcomes for these students—their academic preparation while in high school and the type of post-secondary institution they attend.

By presenting these findings, this brief provides a reference point by which to measure citywide progress over time, and also aims to help practitioners and policymakers develop strategies for improvement. In addition, we hope it will stimulate dialogue among local stakeholders about barriers that may help explain the patterns we have documented. For more details about these findings, please see our full report, *New York City Goes to College: A First Look at Patterns of College Enrollment, Persistence, and Degree Attainment for New York City High School Students*.

College Enrollment

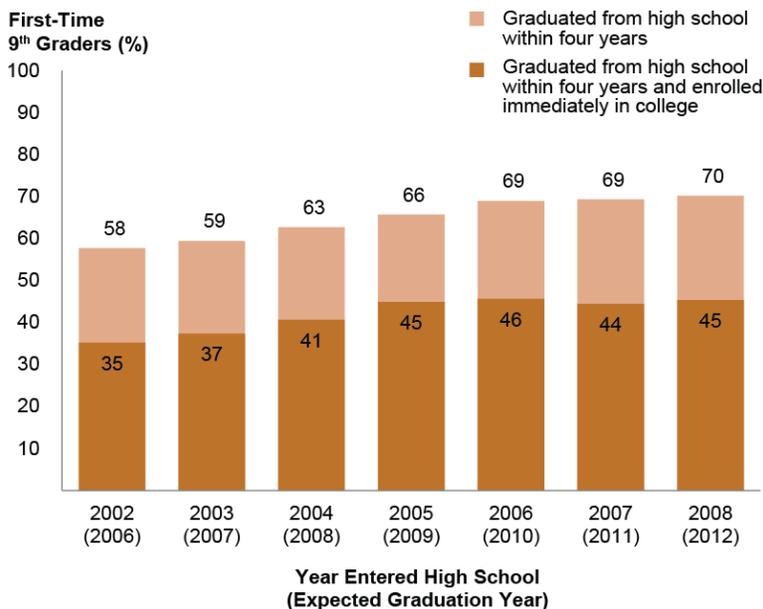
In recent years, New York City's high school graduation rates have improved substantially. We conducted analyses to explore whether college-going has increased in tandem. The short answer is yes.

- **Rates of immediate college enrollment have gone up.**

Figure A shows that 70 percent of students who entered high school in 2008 graduated within four years³ and that 45 percent of that 9th grade cohort enrolled immediately⁴ in a two- or four-year college. By comparison, among students who entered high school in 2002, only 58 percent graduated within four years, and 35 percent enrolled in college right away. Thus, the odds that an entering 9th grader would finish high school and proceed to post-secondary education grew by 10 percentage points during the period we studied.

Figure A also shows that, after several years of continued growth, college enrollment flattened out and remained at roughly that same rate for recent cohorts of students. A complex array of overlapping factors may have contributed to both

Figure A: College Enrollment Has Increased Along with High School Graduation Rates (First-Time 9th Graders, 2002-2008)



Source: Research Alliance calculations using data from the NYC Department of Education, including National Student Clearinghouse data.

Notes: Our graduation rates differ from those reported by the New York State Education Department and the NYC DOE because we do not include students who transferred into or out of a NYC high school after 9th grade. Our rates are typically 4-5 percent higher. See Appendix A of the full report for a detailed explanation of our sample, methods, and definition of key outcomes.

the overall growth in enrollment, and to the apparent leveling off in recent years. First, the composition of potential college entrants was changing during this time, as students who might otherwise have dropped out of high school were now graduating and in a position to consider college enrollment. The landscape of New York City high schools was also undergoing major changes, as large struggling high schools

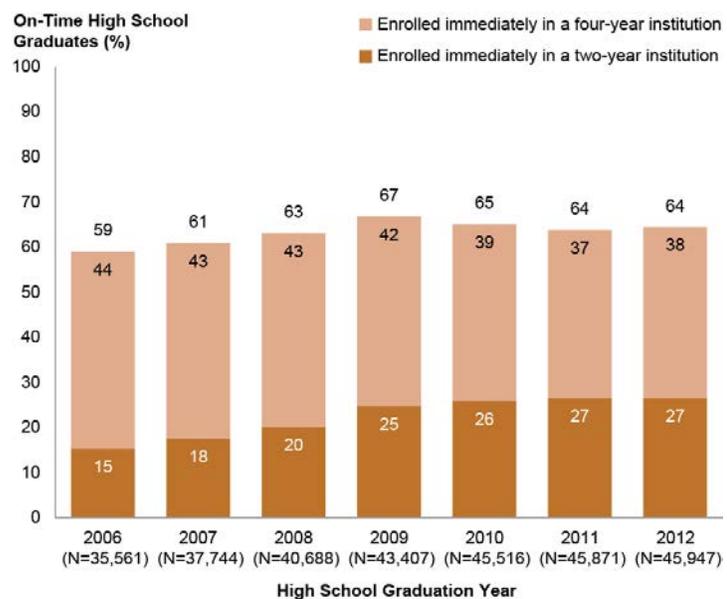
were being closed and hundreds of new smaller schools were being opened.⁵ Economic forces, particularly the recession that began in 2007, may have influenced the options available to students in any number of ways (e.g., by making college more attractive because jobs were harder to find, or conversely by making it more difficult for families to pay college tuition). Finally, it is possible that the leveling off of enrollment reflects challenges post-secondary institutions faced in keeping up with growing demand.

While questions about what has driven changes in enrollment must await future research, the current study did yield valuable insights about several other aspects of the enrollment picture. In the next section, we look at the types of post-secondary institutions that NYC students attended and the extent to which students' academic preparation in high school was linked with their odds of attending college. For these analyses, we focus on the proportion of *on-time high school graduates* who enrolled immediately in a post-secondary institution (rather than the proportion of entering 9th graders who enrolled).

- **Growth in enrollment has been driven by students attending two-year institutions, particularly CUNY community colleges.**

Figure B shows that in 2006, 44 percent of NYC's on-time high school graduates immediately enrolled in a four-year institution, and 15 percent in a two-year institution. By 2012, the share of high school graduates who enrolled in a four-year institution had actually dropped, to 38 percent, while the share enrolled in a two-year college nearly doubled, to 27 percent. Many of these students were in City University of New York (CUNY)⁶

Figure B: The Proportion of Students in Two-Year Colleges Has Increased (Immediate Enrollment by College Level, for High School Graduates, 2006-2012)



Source: Research Alliance calculations using data from the NYC Department of Education, including National Student Clearinghouse data.

Notes: Calculations for this figure included all students who enrolled in NYC public schools as first-time 9th graders and graduated in four years. See Appendix A of the full report for a detailed explanation of our sample, methods, and definition of key outcomes.

community colleges: Rates of immediate enrollment into a CUNY community college grew from 13 percent in 2006 to 24 percent in 2012. This finding is consistent with national trends that show increasing proportions of high school graduates attending community colleges.⁷ On page 8, we examine how NYC students' persistence and degree completion rates have varied, depending on whether they enrolled in a two- or four-year school.

- **Academically prepared students were much more likely to enroll in college.**

For instance, among 2006 high school graduates, 80 percent of students who earned the more rigorous Advanced Regents diploma enrolled in college, compared with just 60 percent of students with a regular Regents diploma and 40 percent of students with the (now-phased-out) Local diploma.⁸ While it is unclear if academic preparation alone can boost students' enrollment rates (or if these statistics reflect confounding factors, like student motivation), these findings suggest a strong link between academic preparation in high school and students' subsequent odds of attending college.

- **Still, about one in five well-qualified students did not enroll in any post-secondary institution.**

In 2006, a full 20 percent of NYC students who graduated from high school with an Advanced Regents diploma either delayed enrollment into college or decided to forgo it altogether. This suggests that even the most academically prepared high school graduates are vulnerable to non-academic barriers, such as cost, limited knowledge about post-secondary options, and difficulty navigating the college application and financial aid processes. While this is a small group of students overall, we believe there may be valuable lessons to be learned from their experience, which could inform initiatives designed to enhance college access for a variety of students.

College Persistence and Completion

Looking at New York City students' matriculation into post-secondary institutions provides only a partial account of their transition to college. Knowing whether students stay enrolled and whether they attain a post-secondary degree is perhaps even more critical. Thus, to understand more about students' progression through college, we examined rates of persistence⁹ and degree attainment, zeroing in on

students who graduated high school in 2006, the cohort for whom we have the most complete information. We found:

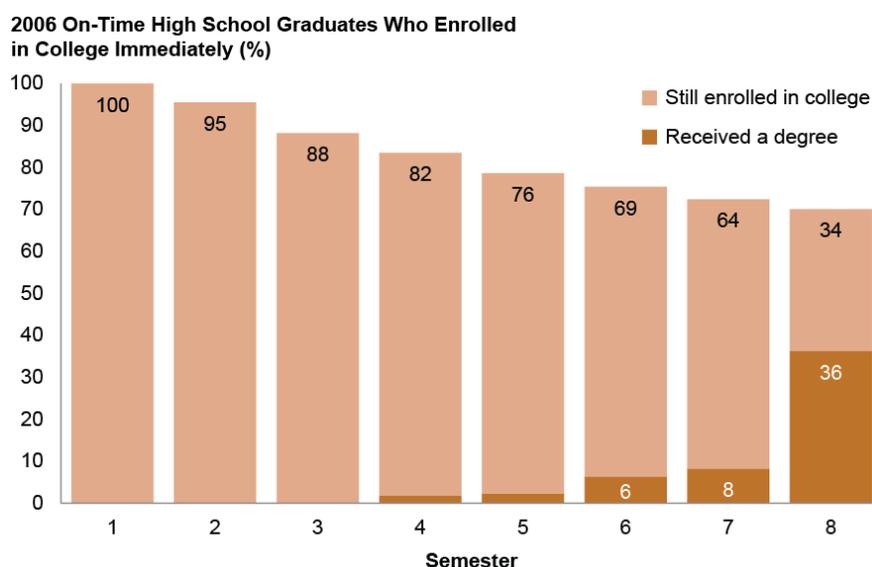
- **There was slow and steady attrition from college, across eight semesters.**

Among 2006 high school graduates who enrolled in college directly after high school, 88 percent stayed continuously enrolled for three semesters, 76 percent for five semesters, and 64 percent for seven semesters (see Figure C). This translates into a small but continuous loss of students each semester.

Many post-secondary institutions have invested in programs designed to help students stay in enrolled in the first two years of college. But our findings suggest that students may actually need support *throughout* their college career—not just early on. More research will be needed to determine if existing programs are effective and what types of support (e.g., academic, financial, social) are most valuable for students during different parts of their college experience.

It is notable that, among more recent cohorts of high school graduates, persistence has declined somewhat. For example, while almost nine out of ten students who enrolled in college in 2006 remained enrolled in their third semester, that number dropped to about eight of ten for students who started college in 2011. These drops

Figure C: There Was Slow and Steady Attrition from College Over Eight Semesters (Persistence and Degree Attainment, for First-Time College Enrollees, 2006)



Source: Research Alliance calculations using data from the NYC Department of Education, including National Student Clearinghouse data. Notes: Figure includes all students who enrolled in NYC public schools as first-time 9th graders in 2002, graduated in 2006, and enrolled in a two-year or four-year college in the fall of 2006 (N=20,982). See Appendix A of the full report for a detailed explanation of our sample, methods, and definition of key outcomes.

in persistence may point to differences in NYC high school graduates over time, but it may also be that changes in the local context—for example, the economic climate—have influenced students’ ability or desire to stay enrolled. Nationally, there has also been a slight decline in rates of persistence since 2009.¹⁰

- **Few students earned a college degree within four years.**

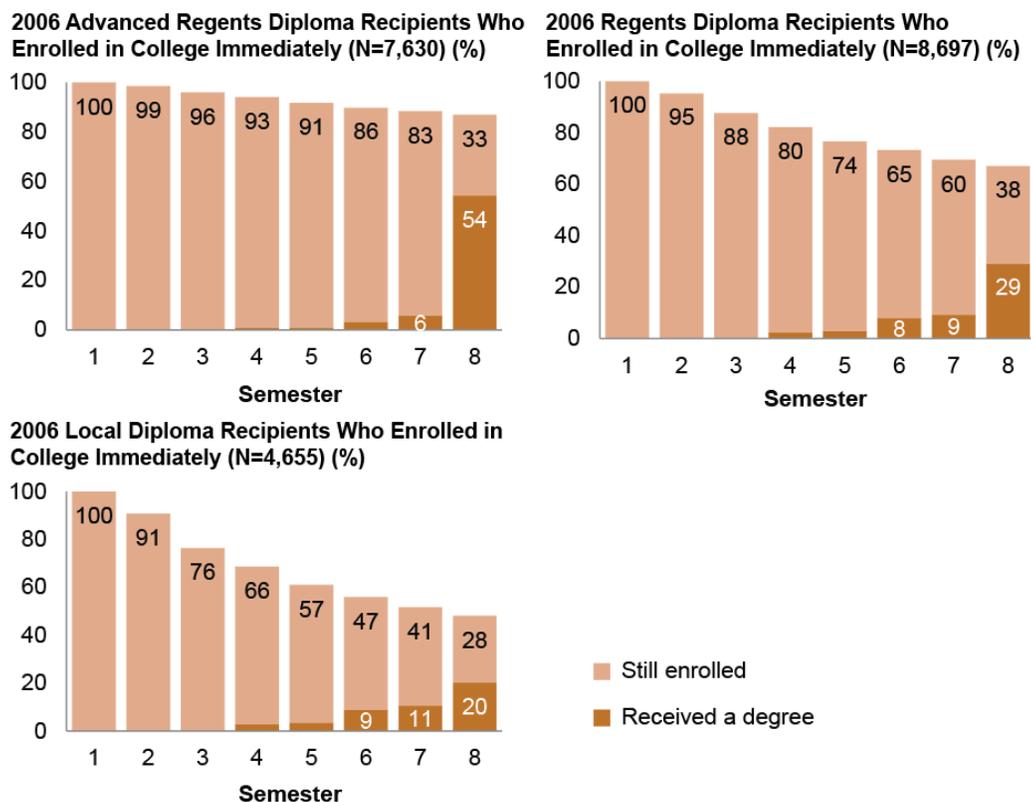
Our findings show that high levels of early persistence did not translate into similarly high rates of college completion within four years. Just 36 percent of students who started college in the fall of 2006 had received a post-secondary degree (two- or four-year) by the end of the summer of 2010 (see Figure C).¹¹ Because many students now take five years or more to complete a bachelor’s degree, the degree attainment rate for this cohort of students will surely go up as additional years of data become available. Nonetheless, the small proportion of students completing college within four years is striking, particularly because a large number of these students were in two-year programs. Delays in college completion come at a cost to individual students and the broader economy. A recent report by the Center for an Urban Future found that a 10 percentage point increase in the proportion of students graduating from community colleges in NYC could result in a \$71-million boost to the City and State in tax revenues, economic activity and public investment, in the first year alone.¹² Other studies have found that improving on-time college completion has the potential to reduce costs in government spending on public health, criminal justice, and public assistance.¹³

Given these possible benefits, it is essential that we identify levers to increase college graduation rates. Policy discussions typically focus on one of two broad areas: 1) students’ academic preparation while still in high school, and 2) the supports and resources available to students once they arrive in college. We conducted analyses to explore both sets of factors.

- **Students with stronger high school credentials were more likely to stay enrolled and complete college on time.**

Figure D shows that 96 percent of students who earned an Advanced Regents diploma and enrolled immediately in college stayed enrolled through the third semester, compared with 88 percent of students who had a regular Regents diploma and 76 percent of students with a Local diploma. Differences across the three groups in college completion are even more remarkable: While more than half of

Figure D: Patterns of College Persistence and Completion Varied by High School Diploma Type



Source: Research Alliance calculations using data from the NYC Department of Education, including National Student Clearinghouse data.

Notes: Figure includes all students who enrolled in NYC public schools as first-time 9th graders in 2002, graduated in 2006, and enrolled in college in the fall of 2006. See Appendix A of the full report for a detailed explanation of our sample, methods, and definition of key outcomes.

college enrollees (54 percent) with an Advanced Regents diploma earned a post-secondary degree within four years, only 29 percent of those with a Regents diploma and 20 percent of those with a Local diploma did so.

Thus, there appears to be a strong correlation between students' academic preparation while in high school and their likelihood of obtaining a college degree. However, it is somewhat surprising that even among students with an Advanced Regents diploma a large proportion did not attain a post-secondary degree within four years. Additional research will help discern whether this group faces similar or different obstacles to graduation as their less academically prepared peers.

- **Students at four-year colleges were more likely to stay enrolled and earn a degree, as were students who attended more selective four-year institutions.**

Students' trajectories diverged sharply based on the type of college they attended. Among students who enrolled directly in a four-year institution in the fall of 2006, 91 percent were still enrolled in the third semester, compared to 79 percent of students who started at a two-year institution. Students who enrolled in four-year institutions were also much more likely to earn a post-secondary degree: 42 percent earned a degree within four years, compared to only 26 percent of those who started at a two-year college. This is particularly startling, given that four years is traditionally the minimum time required to earn a bachelor's degree but twice the conventional amount of time required to earn an associate's degree.

The selectivity¹⁴ of the four-year institution students attended was also highly correlated with persistence and completion. Fully 72 percent of students who initially attended a very selective institution attained a degree within four years, compared to only 42 percent of those who started at selective institutions, 29 percent of those who attended somewhat selective institutions and 25 percent of those who started at non-selective institutions.

- **Among students with similarly strong academic qualifications, those who attended more selective schools had better outcomes.**

Students who graduated high school with an Advanced Regents diploma and attended a very selective institution had much higher rates of persistence and post-secondary degree attainment, compared to their similarly qualified peers who attended other institutions. Among high school graduates with an Advanced Regents diploma, 76 percent who started at a very selective institution received a degree within four years, compared to 50 percent of students who attended a selective college and 39 percent who attended a somewhat selective college.

Summary and Next Steps

Tracking students' trajectories from high school into and through college is challenging, in part because the data needed for these kinds of analyses are rarely available from a single source. Assembling the *NYC Goes to College* dataset represents a major milestone, but this report is truly a *first look* at system-wide patterns of

college enrollment, persistence and completion. As outlined below, our findings raise many important questions that we hope to address in future work.

Between 2006 and 2012, NYC's high school graduation rates improved considerably, as did the proportion of students who enrolled in college. This is welcome news, but our analyses point to several aspects of the college enrollment picture that deserve further attention. First, growth in enrollment rates tapered off during the last few years. Is this a temporary plateau, or does it signal larger challenges in continuing to improve college access for more New Yorkers? Does the post-secondary system have the capacity to serve growing numbers of students—now and into the future?

Second, our analysis revealed that the proportion of high school graduates enrolled in two-year institutions has increased sharply. What are the reasons for this? Do these students lack the academic credentials needed to attend a four-year school? Are they choosing two-year institutions because of cost? Do they hope to transfer to a four-year institution? It will be important to learn more about the conditions and aspirations that underlie NYC students' decisions about where to go college.

Third, it is noteworthy that in spite of generally high rates of college enrollment, about one in every five of the best prepared students (i.e., those with an Advanced Regents diploma) is not enrolling in any type of post-secondary institution. What barriers are preventing these well qualified students from proceeding to the next level of their education? And what can be done to dismantle those barriers, or at least help more students work around them?

Finally, what do we know about the larger population of students who are not enrolling in college? What are they doing instead? What are their labor market outcomes? Are there viable alternatives to traditional post-secondary pathways that are helping young people prepare for and get good jobs?

Among NYC students who do enroll in college, our analysis showed fairly high rates of persistence, although there has been a slight decline in persistence for recent cohorts of college enrollees. We did not find that any one semester was particularly problematic for students. Rather, we documented slow and steady attrition over the course of eight semesters. This suggests that college students may benefit from support that extends throughout their college career. Tailoring that support to

effectively meet students' needs will require better information about which students drop out and why.

Perhaps most worrisome, we found that few students graduated from college within four years—just over a third of those who started in 2006 received a degree of any kind by 2010. Much more research is needed to identify and address bottlenecks on the path to college graduation. Are students failing to attain a degree because of time spent in remediation, low credit accumulation, or not completing required coursework? Are students who transfer between colleges losing ground because some credits are not transferable? Are students switching to part-time enrollment because they cannot afford to go to school full-time and/or have to work?

While much is still unknown, our analysis strongly suggests that *both* high school preparation *and* supports offered in college make a difference for students' outcomes. We found that students who left high school with strong academic credentials were much more likely to stay enrolled in college and obtain a degree. Likewise, students who attended a four-year college, particularly those who attended a more selective institution, had higher persistence and completion rates. How is it possible that similarly qualified students could have such disparate outcomes based on the selectivity of their college? Is this finding a reflection of the students who seek out and are accepted to these more selective institutions, or of the favorable conditions at these schools, or both?

The Research Alliance will explore many of these unanswered questions in future studies. We recently embarked on a formal partnership with CUNY and the NYC DOE, with support from the U.S. Department of Education's Institute of Education Sciences, which will allow us to extend the analyses presented here in important ways. Moving forward, we will look more closely at variation between different groups of students, including more detailed information about students who attend CUNY, and follow new cohorts of students to learn more about the factors that influence their ability to reach—and succeed in—college.

Endnotes

- ¹ Carnevale, Smith, & Strohl (2013).
- ² Our college enrollment and persistence rates may differ from those reported by the New York City Department of Education (DOE) because we rely solely on information from the NSC, whereas the DOE supplements NSC data with information received directly from CUNY (Wilkes et al., 2012). Also, NYC high schools can appeal their college enrollment rates based on formal evidence of their students' enrollment in college. As a result of these two factors, the DOE may report higher rates than we do in this report.
- ³ Throughout this brief, the term “high school graduates” refers only to students classified as “on-time high school graduates,” meaning that they graduated by October following their expected fourth year of high school. Unlike the NYC DOE and NYSED, our calculations focus on incoming 9th graders and do not include students who transferred into or out of a New York City high school after their 9th grade year. Thus, we report different graduation rates (typically 4-5 percentage points higher) than the NY State Education Department and the NYC DOE.
- ⁴ “Immediate enrollment” is defined as enrolling in a post-secondary institution between August 1st and December 31st of the calendar year that a student graduated from high school. Our report focuses on enrollment in the fall following high school graduation, because the vast majority of NYC high school graduates enter college in the fall.
- ⁵ Kemple (2013).
- ⁶ CUNY is one of the largest public higher education systems in the country. It includes 11 senior colleges and 7 community colleges across all five boroughs.
- ⁷ Dunbar et al. (2011); Kena et al. (2014).
- ⁸ As of 2012, to earn a Regents diploma, a student must earn at least 44 course credits and score a 65 or higher on five required Regents exams (English, U.S. history, global history, a math, and a science). To earn an Advanced Regents diploma, a student must meet all the requirements for a Regents diploma, and also score a 65 or higher on an additional science exam, two additional math exams, and an exam on a language other than English. The requirements for the Local diploma changed for recent 9th grade cohorts, and the diploma was ultimately phased out for students entering 9th grade in September 2008. See NYC DOE (2014).
- ⁹ We define “persistence” as continuous enrollment—in any post-secondary institution—for a given number of semesters.
- ¹⁰ National Student Clearinghouse (2014).
- ¹¹ An additional 1.4 percent of high school graduates who enrolled in college immediately received a post-secondary degree, but are not included in this college completion rate because they had left college for a period of time prior to degree attainment (see full report and Appendix A for more information).
- ¹² Hilliard (2011).
- ¹³ Belfield & Levin (2007).
- ¹⁴ We determined selectivity ratings using a modified version of those used in Barron's Profiles of American Colleges, which has been also used by other researchers (Bowen, Chingos, & McPherson, 2009; Roderick et al., 2008, 2009, & 2011; Smith, Pender, & Howell, 2013). Barron's rates four-year institutions using a combination of the average incoming students' SAT/ACT scores, GPAs, and class rankings as well as the percentage of applicants admitted.

References

- Belfield, C. & Levin, H. (2007).** *The Price We Pay. Economic and Social Consequences of Inadequate Education.* Washington, D.C.: Brookings Institution Press.
- Bowen, W.G., Chingos, M.M., & McPherson, M.S. (2009).** *Crossing the Finish Line: Completing College at America's Public Universities.* Princeton, NJ: Princeton University Press.
- Carnevale, A.P., Smith, N., & Strohl, J. (2013).** *Recovery: Job Growth and Education Requirements Through 2020.* Washington, DC: George Washington University Center on Education and the Workforce.
- Dunbar, A., Hossler, D., Shapiro, D., Chen, J., Martin, S., Torres, V., Zerquera, D., & Ziskin, M. (2011).** *National Postsecondary Enrollment Trends: Before, During, and After the Great Recession (Signature Report No. 1).* Herndon, VA: National Student Clearinghouse.
- Hilliard, T. (2011).** *Mobility Makers.* New York, NY: Center for an Urban Future.
- Kemple, J.J. (2013).** *The Condition of New York City High Schools: Examining Trends and Looking Toward the Future.* New York: The Research Alliance for New York City Schools.
www.steinhardt.nyu.edu/research_alliance/publications/ConditionsofNYCHS_March2013
- Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., Wilkinson-Flicker, S., & Kristapovich, P. (2014).** *The Condition of Education 2014.* NCES 2014-083. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- National Student Clearinghouse (2014).** "First-Year Persistence and Retention Rates by Starting Enrollment Intensity: 2009-2012." Retrieved from nscresearchcenter.org/snapshotreport-persistence/retention14/
- New York City Department of Education (2014).** "Graduation Requirements." Retrieved from <http://schools.nyc.gov/nr/rdonlyres/215ff06b-dca3-442b-89df-18e674dc867e/0/acpolicygened.pdf>
- Roderick, M., Nagaoka, J., Coca, V., Moeller, E., Roddie, K., Gilliam, J., & Patton, D. (2008).** *From High School to the Future: Potholes on the Road to College.* Chicago, IL: University of Chicago Consortium on Chicago School Research.
- Roderick, M., Nagaoka, J., Coca, V., & Moeller, E. (2009).** *From High School to the Future: Making Hard Work Pay Off.* Chicago, IL: University of Chicago Consortium on Chicago School Research.
- Roderick, M., Coca, V., & Nagaoka, J. (2011).** "Potholes on the Road to College: High School Effects of Shaping Urban Students' Participation in College Application, Four-Year College Enrollment, and College Match." *Sociology of Education*, 84(3), 0178-211.
- Smith, J., Pender, M., & Howell, J. (2013).** "The Full Extent of Student-College Academic Undermatch." *Economics of Education Review*, 32, 247-261.
- Wilkes, S., Brohawn, K., Mevs, P., & Lee, J. (2012).** *Data Collaboration in New York City: The Challenges of Linking High School and Post-Secondary Data.* Providence, RI: Annenberg Institute for School Reform. Retrieved from http://annenberginstitute.org/sites/default/files/CRIS_Brief2_0.pdf

Acknowledgements

This report would not have been possible without critical feedback and support from a number of individuals. In particular, I would like to thank the staff at the Research Alliance for New York City Schools. A very special thanks goes to James Kemple for providing instrumental support, advice, and guidance on the direction of the report, as well as the larger body of work we are developing in this area. I am also grateful to my colleagues Lisa Merrill, Kristen Black, and Molly Alter, who participated in reviews of this report, and to the Research Alliance communications team, Chelsea Farley and Shifra Goldenberg, for their invaluable support, meticulous feedback, and expert efforts throughout the report's production. In addition, I would like to acknowledge the key contributions of former Research Alliance staff, Micha Segeritz and Dyuti Bhattacharya, to the early stages of this research and report. Thanks also to the members of Research Alliance's Steering Committee, who shared their comments on early versions of these findings.

We are indebted to current and former staff at the New York City Department of Education who provided significant feedback and guidance at various stages of this work, particularly Simone D'Souza, Ailish Brady and Michelle Paladino. Thanks also to our new thought partners at the Office of Institutional Research at the City University of New York, David Crook, Colin Chellman, and Sarah Truelsch, for their constructive commentary.

In addition, I would like to thank our external reviewers, Elizabeth Kahn (Cypress Hills Local Development Corporation), Eliza Moeller (University of Chicago Consortium on Chicago School Research), and Gregory Wolniak (NYU), for their thoughtful comments and suggestions on an early draft of this report.

Special thanks goes to the staff of the Chicago Postsecondary Transition Project at the University of Chicago Consortium on Chicago School Research for their feedback and substantive guidance on this emerging line of work at the Research Alliance. In many ways, the work in Chicago on students' transitions to college provided a standard for the quality of work we strive to produce.

© 2014 Research Alliance for New York City Schools. All rights reserved. You may make copies of and distribute this work for non-commercial educational and scholarly purposes. For any other uses, including the making of derivative works, permission must be obtained from the Research Alliance for New York City Schools, unless fair use exceptions to copyright law apply.

This study was funded by the University of Chicago Consortium on Chicago School Research, through a grant from The Bill & Melinda Gates Foundation. Vanessa Coca's time on the project was also supported by the Institute of Education Sciences, U.S. Department of Education (Grant R305B080019 to New York University).

This paper reflects the interpretations and opinions of the author. Readers should not infer any endorsement of the findings or interpretations on the part of the New York City Department of Education, or any of the funders of our work, or on the part of those who kindly reviewed earlier drafts and provided guidance to the author.

The **Research Alliance** for
New York City Schools

285 Mercer Street, 3rd Floor | New York, New York 10003-9502
212 992 7697 | 212 995 4910 fax
research.alliance@nyu.edu | www.steinhardt.nyu.edu/research_alliance

The Research Alliance for
New York City Schools conducts
rigorous studies on topics that
matter to the city's public schools.
We strive to advance equity and
excellence in education by
providing non-partisan evidence
about policies and practices that
promote students' development
and academic success.