



Report - December 2017

Degrees of Difficulty: Boosting College Success in New York City

New York City has a college success problem. Today, far too few New Yorkers who graduate high school are succeeding in college, with serious consequences for their economic mobility. To lift more of its residents into the middle class, the city will need to make dramatic improvements to its college completion rates.

by Tom Hilliard

- The following is the introduction to *Degrees of Difficulty*
- [Read the full report \(PDF\)](#)
- [View the recommendations from this report](#)

New York City's high school graduation rate hit an all-time high of 76 percent in 2016, up from 50 percent in 2000.¹ This is a tremendous accomplishment, and a credit to the educational reforms put in place over the past 15 years by Mayors Michael Bloomberg and Bill de Blasio. But if New York City is going to lift more of its residents into the middle class, it will need to go beyond getting New Yorkers to the high school finish line. To expand opportunity in today's economy, policymakers and education officials in New York will need to make similarly dramatic improvements to the rate at which New Yorkers earn a college credential.

Today, far too few New Yorkers who receive a high school diploma are succeeding in college. Only 22 percent of students who enter community college associate's degree programs at the City University of New York (CUNY) earn a degree in three years.² In some communities, the completion rate is even lower: 16 percent at Bronx Community College and 19 percent at Borough of Manhattan Community College.³

The graduation rates are also alarmingly low at many of CUNY's four-year colleges, hovering at 55 percent after six years.⁴ Just 27 percent of students enrolling in baccalaureate programs at Medgar Evers College earned a bachelor's degree in that time.⁵ The completion rates were only marginally higher at the New York City College of Technology (32 percent) and York

College (41 percent). Even at City College, the six-year graduation rate is only 55 percent.⁶

These low college completion rates are particularly troubling at a time when a college credential has become the floor to achieving economic success. Indeed, 20 of the 25 fastest-growing occupations in the city that pay over \$50,000 annually require a college degree.⁷ Citywide, the average working adult with only a high school diploma earns 32 percent less annually than a worker with an associate's degree (\$27,259 a year versus \$36,101) and less than half the earnings of a New Yorker with a bachelor's degree (\$54,939).⁸

Fortunately, New York City is moving in the right direction. Graduation rates at CUNY's community colleges have steadily improved over the past eight years—from 13 percent to 22 percent. Meanwhile, CUNY has put in place innovative initiatives aimed at boosting student success, including the nationally renowned Accelerated Study in Associate Programs (ASAP) initiative, and Mayor de Blasio has scaled up a promising effort to boost postsecondary readiness among the city's public school students.

But with nearly 8 in 10 students at the city's community colleges failing to earn an on-time credential—along with nearly half of students at CUNY's senior colleges—New York needs to make significantly more progress in tackling its college success problem. This report identifies the multiple barriers to student success and advances practical strategies to get more New Yorkers to graduation day.

This report, the latest in a series of studies by the Center for an Urban Future examining opportunities to expand economic mobility in New York City, takes an in-depth look at college readiness and success among the city's public high school students. It explores opportunities to dramatically boost the rate at which New York City's students enter a best-fit college and graduate with a degree or other credential.

Funded by The Clark Foundation, this report draws on data furnished by the New York City Department of Education (DOE) and CUNY, as well as data prepared by the New York State Education Department (NYSED), the Higher Education Services Corporation, Graduate NYC, and the Research Alliance for New York City Schools. In addition, our research included dozens of interviews and focus groups with officials at DOE, CUNY, high schools and colleges, affinity groups, and community-based organizations, as well as leading academic researchers, policy advocates, and high school and college students from across the five boroughs.

It may come as a surprise to many that New York City has a college degree attainment problem. After all, New York is home to an almost unparalleled concentration of highly educated people.⁹ However, more than 3.3 million city residents over age 25 lack an associate's degree or higher level of college attainment.¹⁰ The result is that, while New York City boasts large numbers of highly educated residents, the share of residents with a college degree is lower than that of many other U.S. cities—behind Washington, San Francisco, Boston, and Denver, among others—and the distribution of degree-holders is wildly uneven across the five boroughs.

Although 60 percent of Manhattan residents over age 25 have a bachelor's degree or higher, the rate is just 19 percent in the Bronx—the second-lowest rate among the nation's 100 largest counties. The college attainment rate is particularly low in several of the city's lowest-income neighborhoods, including Soundview, where just 12 percent of adults have a bachelor's degree, Brownsville (11 percent), and Mott Haven (9 percent).¹¹

The good news is that a growing number of New Yorkers are graduating high school and enrolling in college. In fact, New York City provides college access to more high school graduates than most other major cities. In 2014, 77 percent of the city's on-time high school graduates enrolled in college the following September, compared to 62 percent in Chicago.¹²

Unfortunately, too few students in New York are succeeding once they set foot on a college campus.

The Research Alliance for New York City Schools tracked the entire population of students who entered public high schools

in 2003—some 64,000 ninth graders—for ten years to learn more about their college trajectories.¹³ The data set included all of the city’s high school graduates, including those attending top performing public high schools such as Stuyvesant, Bronx Science, and Brooklyn Tech. Yet only 44 percent of students who graduated from high school on time obtained a college degree by spring 2013, six years later, and another 13 percent were still enrolled.¹⁴

The rates of college success are significantly worse for the city’s low-income students.¹⁵ Just 33 percent of on-time high school graduates in the bottom quarter of family income (\$30,424 or lower) obtained a college degree, compared to 52 percent of students in the top quarter (\$56,492 or higher).¹⁶

An educational pipeline in which only four in ten on-time high school graduates achieve a college degree is failing young adults, employers, and the city’s economy. “It’s not acceptable to have such low completion rates at our colleges and universities,” says Stanley Litow, former president of the IBM International Foundation and the city’s deputy chancellor for schools during the Dinkins administration. “This is a serious crisis. If we can’t improve college readiness and college completion, a large number of students—and particularly low income students—are not going to be successful.”

The biggest opportunity to move the needle on college success in New York lies with CUNY. More than 240,000 students are pursuing their associate’s or bachelor’s degrees at CUNY, the largest urban higher education system in the United States. Six out of every ten New York City high school graduates entering college attend CUNY institutions, and roughly half of all incoming CUNY first-year students attend community colleges.¹⁷

CUNY arguably provides New York City’s most reliable springboard to the middle class, and is far more effective in that role than colleges in most states. A national study by the economist Raj Chetty and colleagues, which analyzed the impact on economic mobility across generations of virtually every higher education institution in the United States, found that CUNY colleges accounted for six of the ten colleges with the highest rates of inter-generational economic mobility.¹⁸

CUNY has also showed more innovative spirit than most college networks in seeking to boost college success, launching path-breaking programs like ASAP, CUNY Start, and College Now. Yet, even with these important efforts, an alarming share of New Yorkers who enroll in CUNY institutions never receive a credential.

Of the seven CUNY community colleges, none has a three-year graduation rate higher than 30 percent, save for Guttman Community College, which was established in 2012 to serve as a laboratory for innovative student success strategies and, with fewer than 1,000 full-time students, is by far the smallest in the system. At five of the seven, the graduation rate is under 23 percent.

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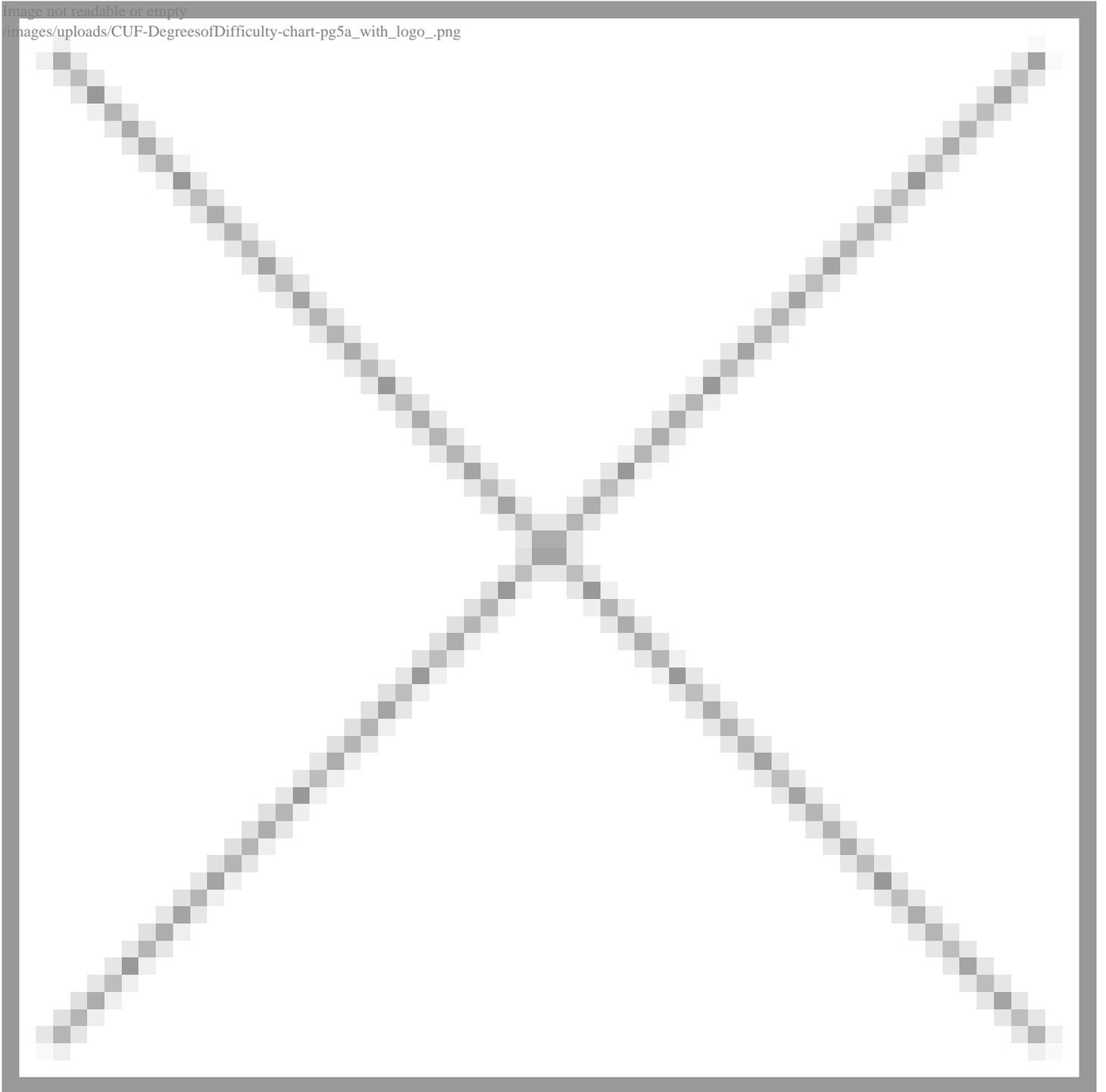


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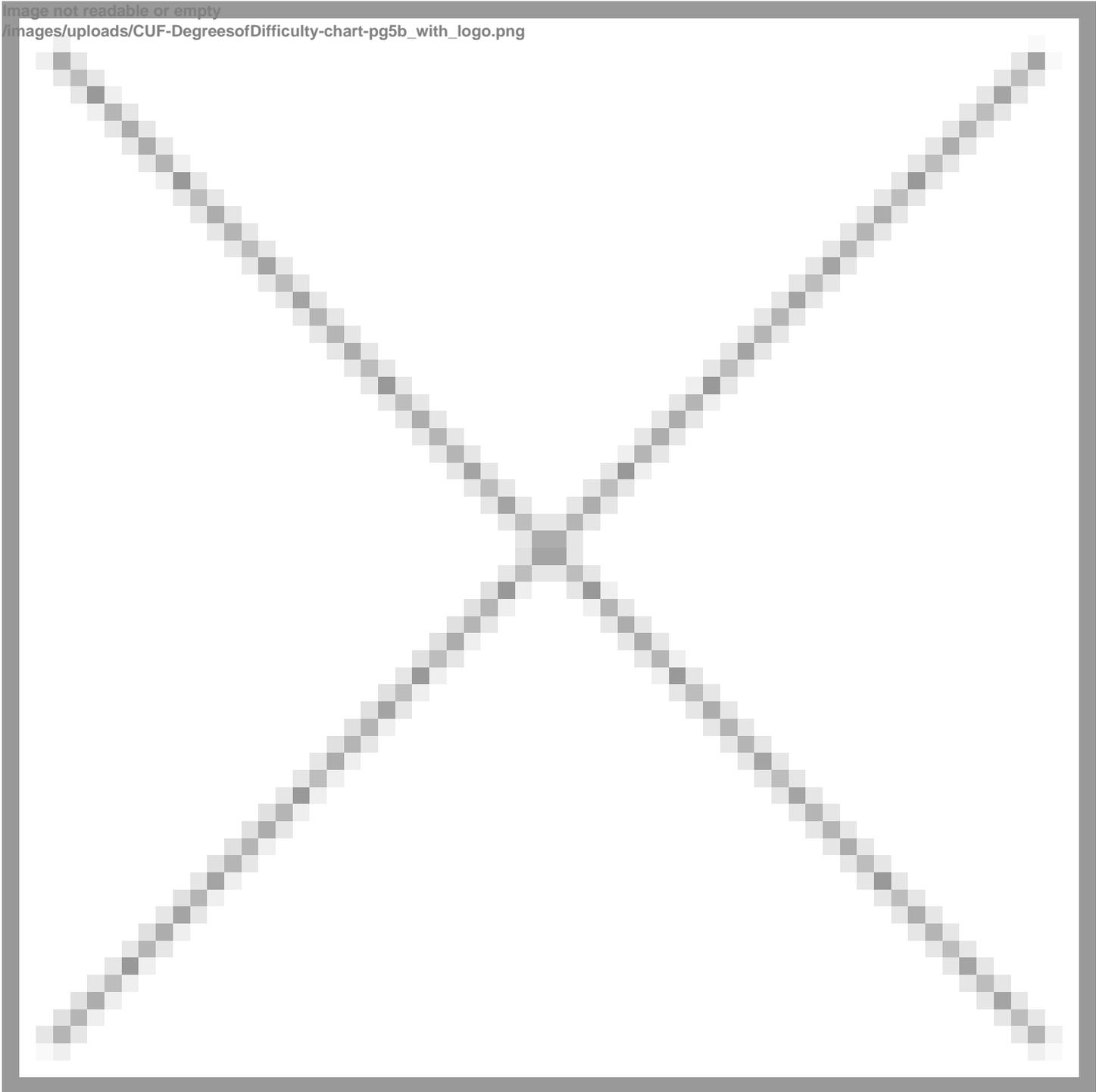


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Low graduation rates go hand in hand with high dropout rates. At all of those campuses except Guttman, at least half of incoming first-year students had dropped out within six years (although about one in six transferred out of the CUNY system, where their outcomes could not be tracked). The dropout percentage was particularly high at Bronx Community College (59 percent) and Hostos Community College (55 percent).

Half of all incoming first-year students also drop out within three years at CUNY's four comprehensive colleges, which offer both associate's and bachelor's degree programs. At Medgar Evers College, for example, only one out of four students (24 percent) earns an associate's or bachelor's degree within six years, while 64 percent drop out.¹⁹

Although CUNY's seven senior colleges post higher graduation rates, they too struggle with college success. Roughly 55 percent of incoming first-year students graduate from the senior colleges with a bachelor's degree in six years. Yet only one,

Baruch, has a six-year graduation rate above 70 percent. There is clear room for improvement at institutions such as York College (41 percent) and Lehman College (50 percent). Overall, at nine of the 11 CUNY colleges offering bachelor's programs, the six-year graduation rate is under 60 percent.

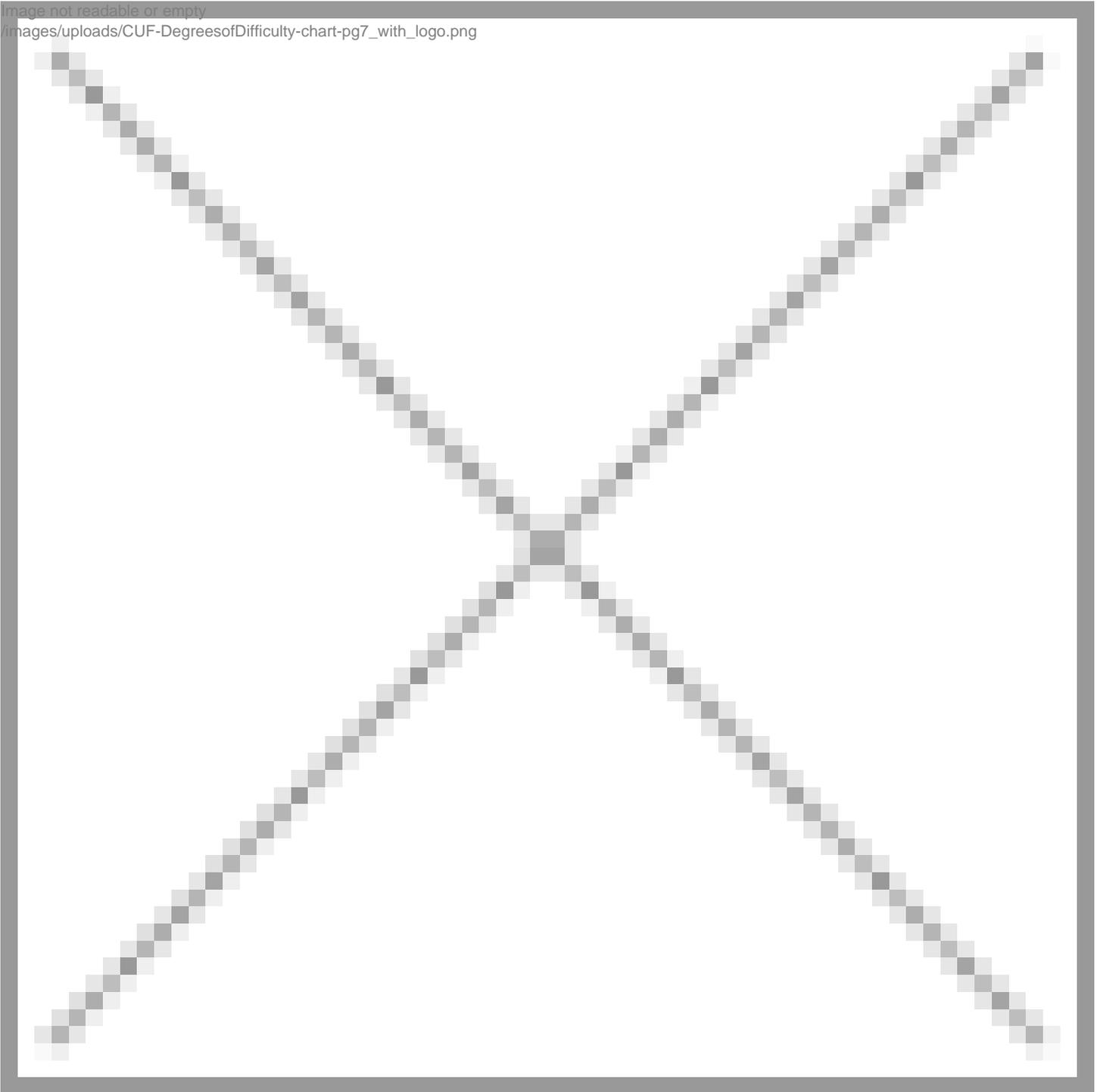
These challenges disproportionately affect students of color, who comprise 79 percent of all CUNY undergraduates and 85 percent of students at its community colleges.²⁰ A June 2017 study by the Research Alliance for New York City Schools found that black and Latino students dropped out without a degree more often than white and Asian students, causing racial achievement gaps to widen slightly after students left high school.²¹

New York is far from the only city with low college completion rates.²² College success is a major problem for urban systems of higher education nationwide, and New York City's system in particular is faced with complex challenges compounded by poverty, underinvestment of public dollars, and the many competing pressures on low-income students. But if New York is to make more substantial and lasting progress in reducing inequality and expanding economic opportunity, the city and state will have to make tackling the college success problem a top priority.

A host of factors contribute to the city's troubling college completion rates. Too many students enter CUNY campuses wholly unprepared academically and socially to succeed in college. Many low-income students struggle to navigate the high school-to-college transition, yet few students receive adequate advisement in either high school or college. Perhaps most important, a host of financial burdens—including living expenses, books and computers, and even the cost of a MetroCard—regularly cause students to drop out. Our research identified eight core problem areas that are dragging down college success rates and derailing students from the path to a degree.

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Finding the Gaps: The Obstacles to College Success

Financial burdens make staying in college unsustainable for many students. A significant share of students who drop out of CUNY colleges and community colleges do so because of financial pressures. Seventy-one percent of students attending CUNY community colleges and 54 percent of those enrolled in CUNY's senior colleges live in households earning less than \$30,000 a year.²³ More than half of all community college students have an annual household income of less than \$20,000. For many of these students, the cost of attending school— and importantly, not simply the cost of tuition—simply becomes untenable.

Even though CUNY tuition is relatively affordable and the vast majority of its students qualify for financial aid, countless low-income students get tripped up by other everyday expenses, from meals to day care to the cost of a MetroCard. For students living at home, CUNY estimates indirect costs of nearly \$10,000 per year, in addition to tuition fees. For students living on

their own, that estimate more than doubles.

The pressure to work while in school poses additional burdens; 53 percent of all CUNY students report working for pay. Meanwhile, numerous students end up losing their financial aid—sometimes because of simple application mistakes, but often because state and federal tuition assistance grants expire long before many students have completed their coursework.

Administrators at Kingsborough Community College, for instance, discovered that three-quarters of students who dropped out after their first year had financial red flags on their account: half owed money to one college office or another, and one-quarter had lost their financial aid. Leaders at other colleges recount similar experiences. “Poverty is the number-one reason community college students are dropping out,” says Gail Mellow, president of LaGuardia Community College. “They have to work.”

Too many low-income students struggle to obtain—or hold onto—financial aid under the state’s generous but deeply flawed TAP program. New York State’s Tuition Assistance Program (TAP) is more generous than most other state need-based financial aid programs, covering up to \$5,165 per year in tuition costs. Yet because of TAP’s burdensome rules and restrictions, countless students exhaust their financial aid well before they complete their coursework and numerous other low income students never qualify or lose eligibility.

The state does not track how many students exhaust TAP eligibility, but sources interviewed for this report say the number may be well into the tens of thousands each year. TAP provides three years of funding for students seeking an associate’s degree and four years for students seeking a bachelor’s degree—a much shorter eligibility period than federal Pell Grants. At CUNY, for example, only about four in ten of the 29,000 students who enrolled in fall 2010 and graduated in six years completed within the TAP eligibility period (although some students may have additional semesters of eligibility if they left and then re-enrolled).²⁴ Furthermore, some college students leave without a degree after burning through their TAP benefits or take out burdensome student loans. Students obligated to take developmental education courses are far more likely to exhaust TAP early, since developmental education courses qualify for financial aid but provide no credit toward graduation.

In addition, several classes of students are effectively barred from accessing TAP benefits, including most of the 103,000 students attending CUNY on a part-time basis and students who want to accelerate their path to a degree by studying in the summer.²⁵ Others receive lower benefits, notably married independent students.²⁶

High schools are not adequately preparing students for college-level work. Far too many students graduate high school wholly unprepared to succeed academically in college. In 2016, just 41 percent of graduating high school seniors met CUNY’s college readiness standard.²⁷ By graduation, just half of all seniors have taken and passed even one approved rigorous college preparatory course or assessment.

The Department of Education also tracks the number of graduating seniors who pass at least one such course or assessment. In 2016, just over half (52 percent) did. At 36 city high schools, more than 90 percent of students passed at least one approved rigorous preparatory course or assessment, but at 48 high schools, fewer than 10 percent of students did.²⁸ Meanwhile, 39 percent of the city’s high schools do not offer a college-prep curriculum of algebra 2, physics, and chemistry, according to the Center for New York City Affairs.²⁹ As of 2015, more than half of all high schools in New York City did not offer a single advanced placement course in math.

High schools and colleges lack essential advisement support. Many of the low-income students in New York City’s high schools and CUNY colleges could benefit from counseling and advising services at various points along their path to a college degree—from applying to college and filling out financial aid forms to choosing a major and navigating the sometimes overwhelming mix of course options. Yet, both in the city’s public high schools and at CUNY campuses, strong advisement is in extremely short supply.

At New York City high schools, one school counselor serves an average of 221 students.³⁰ At one in six schools, each

counselor serves 300 or more students. While private high schools typically boast a college access office with several full-time staff who can meet with students every week, many public high schools lack even a single counselor devoted full-time to college access.

The advisement gap in New York grows even wider as students arrive in college. CUNY officials declined to provide student-to-advisor ratios, arguing that the variety of advising models across campuses make a single metric misleading.³¹ But executives of CUNY colleges and practitioners familiar with the colleges describe extremely high ratios of students per academic advisor, on the order of 600 to 1,000 students for each advisor.

Inadequate access to advisement is an underappreciated problem in a city where 52 percent of community college students are the first in their family to attend college, half are working in a job, and 16 percent are supporting children.³² For many of these students, navigating the transition from high school to college is an unfamiliar and challenging experience. For many other students, the barriers they encounter in other parts of their lives often ripple into their college experience and impact their ability to do all the things needed to keep them on the path to graduation.

“The structure of college financial aid and admissions are broken in ways that necessitate a much more intense counseling system,” says Joshua Steckel, senior college and career planning manager at the DOE’s Office of Postsecondary Readiness (OPSR).

Colleges offer students too many choices with too little guidance. The lack of counseling options is compounded by a “cafeteria” model of education that predominates at all but a handful of CUNY institutions.³³ Throughout the CUNY system, courses and programs of study are offered in an unstructured way, with little guidance to help students make decisions that determine whether they graduate on time with a marketable degree. Though this type of educational model is common at colleges and universities across the country, many of the educational experts we interviewed say that it presents a particular challenge for many of the first-generation and low-income students enrolled at CUNY.

“At every one of our colleges, you see dozens of degree programs,” says Eric Hofmann, assistant dean at LaGuardia Community College. “It’s too many choices.”

A number of colleges around the country are working to clarify students’ choices and structure their route to a degree, an approach known as “guided pathways.” Colleges that use the guided pathways approach give students clearer choices that help them build academic momentum. Within the CUNY system, Guttman Community College and the expanding ASAP program have become nationally known for their guided pathways strategies. However, these programs only serve a small portion of CUNY students.

Too many students are pushed into developmental education, a track that greatly increases the chances of dropping out. Roughly 80 percent of students entering CUNY community colleges each year are placed into developmental education based on a series of assessment tests they take between the start of high school and the start of their first college semester. These students, found lacking college readiness in math, reading, and/or writing, must then complete non-credit remedial courses intended to prepare them for credit bearing coursework. However, remedial students are far more likely to drop out by the end of their first year and the vast majority will fail to graduate with a degree, while using up their limited financial aid dollars in the process. In fact, nearly 90 percent fail to get a degree within the usual timeframe.³⁴

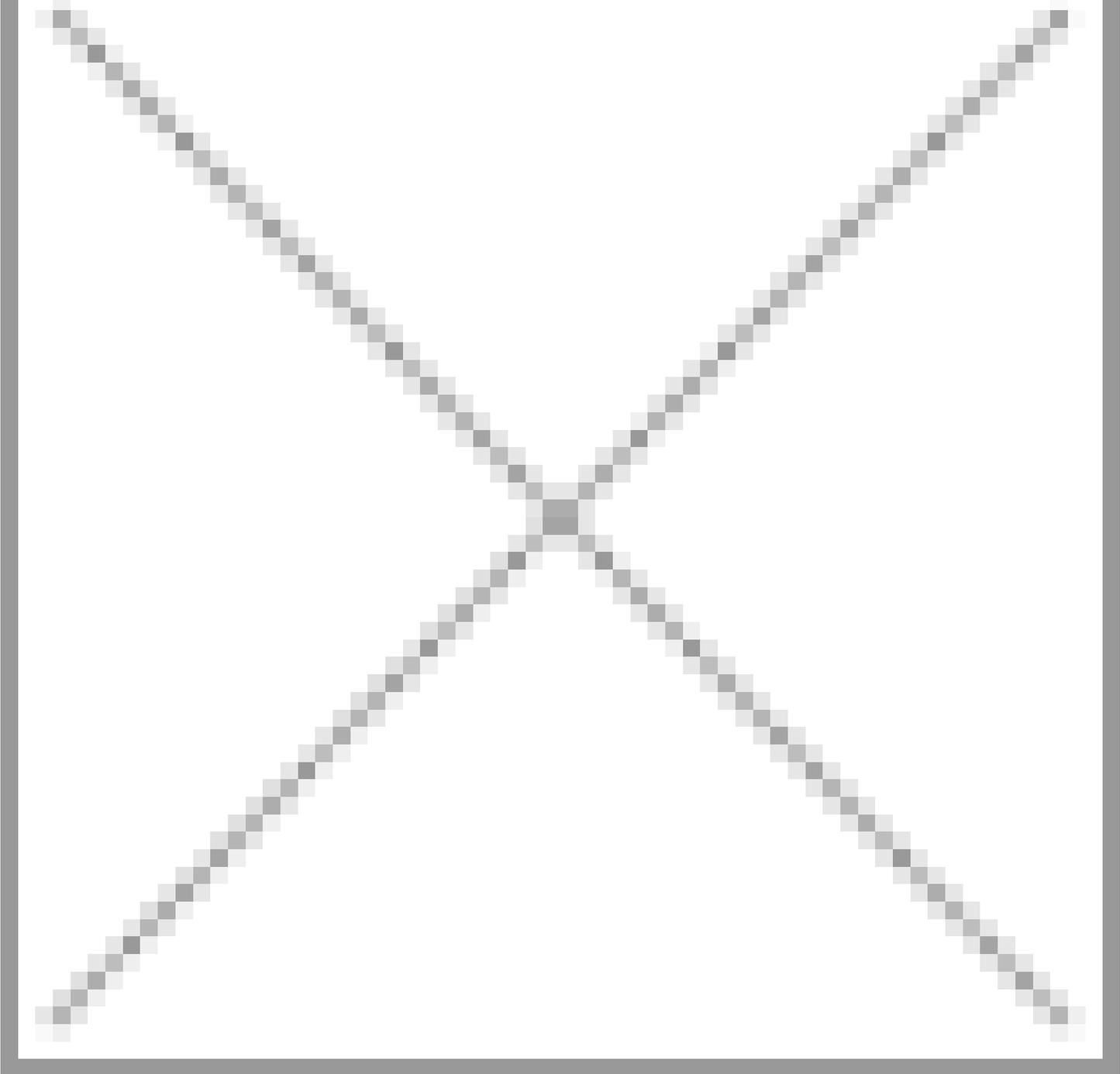
It might be assumed that the students' lack of academic readiness account for the poor outcomes. But study after study shows that similar students placed into credit-bearing courses succeed at a much higher rate.³⁵ Community college leaders now know that with the right supports, many first-year students can accelerate their progress through developmental education or even move directly into credit-bearing math and English coursework. A more effective, evidence-based system could enable thousands of college students to pass credit-bearing college courses more quickly and begin working toward a credential.

Until recently, CUNY's efforts to implement alternative approaches proceeded slowly. Today, the most promising programs serve only a tiny fraction of all students placed into developmental education. To its credit, however, CUNY launched an ambitious initiative in fall 2016 to overhaul its broken placement and remediation system. This promising initiative has the potential to improve CUNY's ability to accurately place students into developmental education, build stronger supports for students who take either a developmental education course or innovatively designed gateway math courses, and provide faculty with a more decisive role in exiting students out of developmental education. Much of the success of CUNY's initiative will depend on the willingness and capacity of the individual CUNY community colleges to fully implement it at scale.

New York has not fully leveraged community-based organizations into its support structure for college access and success New York City is home to dozens of community-based organizations that work to support students in the public education system and help young people achieve their college aspirations. But the city lacks a broad strategy to leverage the contributions of these organizations, or to rigorously evaluate their strategies in order to identify and replicate the most effective interventions.

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Throughout the five boroughs, community-based organizations offer critically valuable services to aspiring college students, from deep cultural knowledge to credibility with students to a willingness to road test new approaches. Unfortunately, most have not succeeded in building strong relationships with DOE, CUNY, or other educational institutions. The result is that limited resources are used inefficiently, students fall through the cracks between organizations and schools, and timely, effective interventions may be a matter of luck rather than organized practice.

“There are a lot of educational nonprofits working in New York City,” says Janice Bloom, co-director of College Access: Research and Action (CARA), a leading nonprofit focused on postsecondary guidance for first-generation college students. “But there’s no city-wide game plan on how they should work with schools and colleges, or which ones they should work with.”

Declining state funding for CUNY has hampered promising efforts to boost college success. In recent years, state support for CUNY has failed to keep pace with the significant growth in the university's student population. In 2009, the state covered 60 percent of the cost of tuition and fees in both direct aid to colleges and financial aid to students, and students paid 28 percent of their own tuition and fees. By 2016, the state was paying only 54 percent and students were paying 35 percent.

The state's declining support has prevented CUNY from investing in additional full-time faculty, online education, a more robust expansion of ASAP, and initiatives that would support student success—such as student advising and faculty mentoring. “We are in the worst fiscal shape of my memory, particularly at the four-year colleges,” says one longtime CUNY official. The state's Excelsior Scholarship may help at the margins by attracting additional students to the CUNY system, but program design elements that restrict eligibility and impose post-graduation residency requirements are likely to limit its value to prospective CUNY students.

New York City has increased its funding of CUNY's community colleges over the years, but its funding of CUNY's senior colleges has remained at \$32 million for the past two decades, and now covers only 1 percent of their operating costs.

What's at Stake for New York?

New York has been at the forefront of efforts to lift residents out of poverty, thanks to recent efforts like Mayor de Blasio's universal pre-kindergarten initiative and Governor Andrew Cuomo's decision to raise the state's minimum wage to \$15 an hour. But to help more New Yorkers actually climb into the middle class, state and city policymakers will also need to double down on efforts to improve student success.

Over the past half-century, multiple avenues into the middle class have shrunk to one: obtaining an education or workforce credential beyond the high school level. The converging forces of automation, computerization, and foreign outsourcing have rapidly eroded jobs for young adults with only a high school diploma or equivalency. Employers seem to value postsecondary credentials more each year.

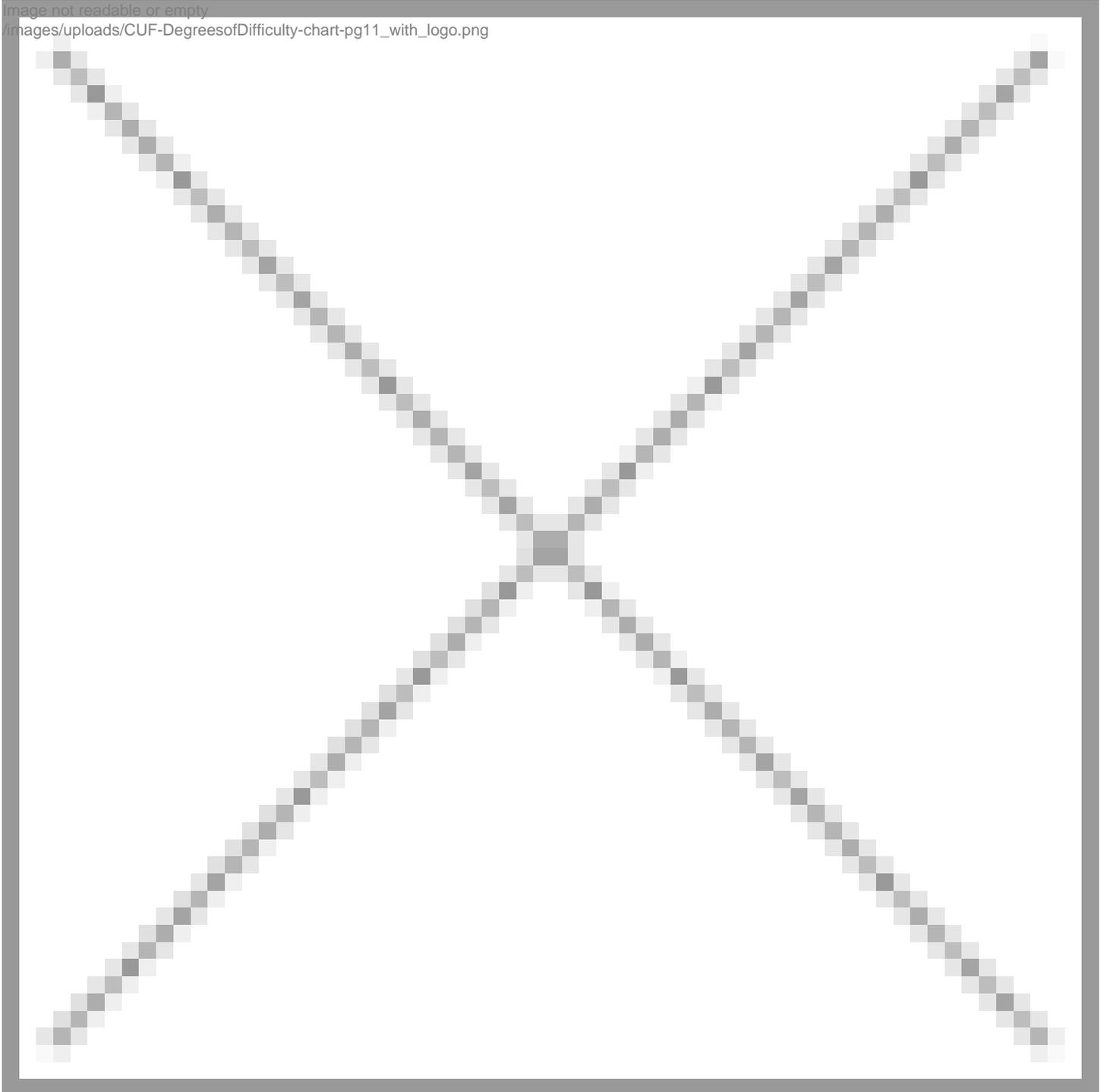
In New York City, the Great Recession accelerated the erosion of low-skilled jobs. Since 2008, the number of workers with a bachelor's degree rose by 6 percent and the number with an associate's degree jumped by 48 percent. But the number of workers with a high school diploma or equivalency dropped by a startling 20 percent.

New York City's future economic growth in the emerging knowledge economy is also at stake. The city needs to significantly boost the number of adults with postsecondary education to meet employer demand, especially in technical fields.

Verizon Communications, for example, hires 12,000 to 15,000 entry-level staff every year, and Director of Workforce Performance Michelle Watts estimates more than half of the company's hires have college degrees. “What we value is not only their academic skills, but also their ability to continue learning and the life skills they bring,” she says. “It prepares them very well for leadership.”

It is entirely possible for New York to move the needle on student success. Doing so, however, will require a coordinated effort to increase both academic and non academic supports, improve college readiness, and help more students afford the pursuit of a college degree.

Although leaders at CUNY and the city's Department of Education have a major role to play in improving rates of student success, they cannot do it alone. New York City's college success problem requires a new level of leadership and support from Mayor de Blasio and Governor Cuomo. Although the mayor and governor have each launched important educational reforms—including the governor's free college tuition plan and the mayor's universal pre-kindergarten initiative—neither has made improving college success a top priority. This needs to change. As we detail in the report, there is much that the state and city can do to boost rates of student success.



At the state level, the governor and legislators should go beyond their recent efforts to make college more affordable and support new efforts at CUNY and the State University of New York (SUNY) specifically geared to improving student success. We suggest creating a Student Success Fund—a new pool of money that would empower CUNY to take on a host of student

success initiatives. These initiatives could include expanding the successful ASAP initiative, increasing the number of college advisors, developing faculty mentoring programs, designing corequisite instruction models that bypass developmental education, and creating emergency microgrants to keep students from dropping out due to sudden crises.

At the city level, Mayor de Blasio ought to include new efforts to increase college success as part of his agenda to reduce inequality. His administration could play a particularly important role in helping the city's low-income public college students overcome the financial burdens that derail so many on their paths to a degree. In particular, the mayor should support free MetroCards for all community college students, a move that would address one of the key non-tuition related costs that contributes to the high dropout rate. CUNY's highly successful ASAP initiative already provides free monthly MetroCards among its core supports, but this major incentive should be expanded to community college students throughout the CUNY system.

At CUNY, innovative programs and interventions have begun to take root, with meaningful gains for many students, but there is still much work to be done. CUNY should follow through on its promising initiative to expand the use of alternatives to remediation, which could help scores of CUNY students avoid the trap of taking courses without earning credits. In addition, CUNY should develop and scale a version of ASAP for four-year colleges, and shift more of its campuses to a guided pathways framework to streamline the often-overwhelming path to a degree.

At DOE, substantial gains have been made in high school graduation and college enrollment rates, but much more needs to be done to prepare students to succeed when they arrive at college. DOE should establish a full-time college counselor at every high school, expand the Office of Postsecondary Readiness and give it a leadership role in DOE's college access initiatives, and overhaul math instruction in the city's high schools, among other strategies designed to better prepare students for college.

Finally, given the depth of the problem, the city needs to take full advantage of the kaleidoscope of community-based organizations (CBOs) providing highly successful support for college access and success initiatives. Despite the success of many individual programs, CBOs remain disconnected from the work of DOE and CUNY and underutilized relative to the scope of the challenge.

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1. NYC Department of Education, "New York City Graduation Rates Class of 2016 (2012 Cohort). Data is based on August Graduation Rate—Traditional NYC Calculation.
 2. CUNY Office of Institutional Research, "System Retention and Graduation Rates." Accessed from <http://cuny.edu/about/administration/offices/ira/ir/data-book/current/retention-graduation/system.html>. This report cites the three-year graduation rate of full-time, first-time freshman students who entered CUNY associate's degree programs in Fall 2013. The graduation rate in previous cohorts roughly doubles after six years. If this pattern holds true for the Fall 2013 cohort, the six-year graduation rate would be about 44 percent. Note that roughly one out of six students described as dropouts transfer out of the CUNY system to non-CUNY colleges. The outcomes of these transferring students are not known.
 3. Ibid.
 4. Ibid. This report cites the six-year graduation rate of full-time, first-time freshman students who entered CUNY bachelor's degree programs in Fall 2010 and graduated with a baccalaureate degree.
 5. Ibid.
 6. Ibid.
 7. Center for an Urban Future (CUF) analysis of New York State Department of Labor Long-Term Occupational Employment Projections, 2014-2024.
 8. Data from 2011–2015 American Community Survey 5-Year Estimates.
 9. Alan Berube, Brookings Institution, 2012. Summarized in <http://www.nytimes.com/interactive/2012/05/31/us/education-in-metro-areas.html?mcubz=1>
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 11. Ibid.
 12. Jenny Nagaoka and Kaleen Healey, The Educational Attainment of Chicago Public Schools Students, University of Chicago Consortium on School Research, June 2016.
 13. Kristin Black and Vanessa Coca, New York City Goes to College: New Findings and Framework for Examining College Access and Success, Research Alliance for New York City Schools, June 2017.
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 15. Source data is a merged file of student unit record data from the New York City Department of Education and the City University of New York, supplemented by student unit record from the National Student Clearinghouse.
 16. A family of three earning less than \$37,060 in 2011 was considered to be low-income by the U.S. Department of Health and Human Services. See <https://aspe.hhs.gov/2011-poverty-guidelines-federal-register-notice>.
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22. According to IPEDS, the three-year graduation + transfer rate for all community colleges in New York City was 35.5 percent, compared to 30.9 percent in Los Angeles, 34.0 percent in Houston and 36.6 percent in Chicago.
23. 2016 Student Experience Survey, CUNY. Accessed from <http://www2.cuny.edu/about/administration/offices/oira/institutional/surveys>.
24. See http://www.cuny.edu/irdatabook/rpts2_AY_current/RTGS_0007_FT_FTFR_BACC_UNIV_TOT.rpt.pdf and http://www.cuny.edu/irdatabook/rpts2_AY_current/RTGS_0001_FT_FTFR_ASSOC_TOT_UNIV.rpt.pdf.
25. According to the CUNY Office of Institutional Research and Assessment, in the fall 2016, 103,179 CUNY students attended on a part-time basis, including 65,019 attending senior colleges and 38,160 attending community colleges.
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- The following are recommendations from *Degrees of Difficulty*
- [Read the full report \(PDF\)](#)

New York City still has a major problem when it comes to college completion. Despite some clear improvements in high school graduation rates and college enrollment, far too few New Yorkers who enroll in college are graduating with a degree. This inadequate level of college completion is a longstanding problem, to the point where other issues often overshadow college success. Yet lagging student success in college is hurting the city's ability to reduce economic inequality and expand opportunity, and this shortcoming will only deepen in the years ahead as automation and globalization reshape the world of work. If policymakers are serious about tackling inequality, then college success needs to become a top priority for New York.

New York has taken steps to begin meeting the challenge, but there is much more work to be done. To their credit, CUNY and DOE are implementing an array of innovative initiatives aimed at boosting college completion rates. But the status quo won't change until the mayor and governor, city and state legislators, and education officials come together to make New York City's college completion gap a top priority. A serious improvement in college success will take significant resources—not only in terms of funding, but in time, energy, and creativity. But the reward will be an unparalleled engine of economic mobility living up to its full potential.

FOR NEW YORK CITY AND STATE GOVERNMENT

Mayor de Blasio and Governor Cuomo need to make improving college success a top priority Mayor de Blasio and Governor Cuomo have launched important new programs designed to reduce inequality and increase economic

mobility—from raising the minimum wage to \$15 an hour to implementing universal pre-kindergarten. Their next step should be to tackle New York City's college success problem. Few other policy actions would have as great an impact on their common goal of getting more New Yorkers from low-income backgrounds on the path to the middle class. In today's economy, most of the occupations that can provide middle-income wages and opportunities for advancement require a college degree. At the same time, an alarming share of New York City residents lack any form of postsecondary credential. And while a growing number of New Yorkers are enrolling in CUNY's community and senior colleges, far too few are succeeding. Unless New York can dramatically strengthen college degree attainment for the low income New Yorkers who comprise the overwhelming majority of students at CUNY institutions, it will be difficult to significantly reduce inequality or expand economic mobility.

The state should establish a Student Success Fund for CUNY and SUNY. New York State is the largest funder of the CUNY and SUNY higher education systems, the recipient of tens of billions of dollars in annual tax revenues from college graduates, and the steward of a state economy powered by a college-educated workforce. The launch of the Excelsior Scholarship demonstrates the state's commitment to expanding access to its public colleges. Over the years, however, the state has paid too little attention to the capacity of its public colleges and universities to graduate their students. That needs to change.

New York State should establish a Student Success Fund, enabling colleges to invest in boosting student success. Allowable uses of funding should include the action items identified in this report, such as expanding CUNY ASAP or testing ASAP-like models in the SUNY system; designing corequisite instruction models that bypass developmental education; developing guided pathways to reduce student confusion on the way to a degree; and exploring strategies to strengthen college advising, such as student peer counseling or text-message-based artificial intelligence assistance. A Student Success Fund could make New York a national leader in strengthening college completion— but only if it is guided by rigorous evidence. Colleges should be expected to use funding to build the evidence base around student success initiatives and to scale up strategies that the evidence supports. Student outcomes should be reported consistently and publicly disclosed, and interventions should be evaluated by third-party organizations. California has already created a competitive statewide grant program for developmental education reform. New York should learn from the Golden State's example, but aim for a broader set of potential strategies to enhance student success.

Help low-income students overcome the non-tuition financial burdens that push many to drop out. Although CUNY and DOE can make important educational reforms that boost student success—from revamping developmental education to increasing the number of student peer counselors—city and state policymakers need to play a major role in addressing one of the biggest contributing factors to CUNY's high dropout rate: non-tuition financial barriers. More than 70 percent of community college students at CUNY live in households that earn less than \$30,000 annually. Even though CUNY's colleges all provide a host of services for low-income students—such as food pantries for students who cannot afford lunch and Single Stop offices that connect eligible students to public benefits—financial hardship remains a constant struggle for the majority of CUNY students. The recently retired president of Kingsborough College, Farley Herzek, reports that as many as three-quarters of first-year students who dropped out within a year were struggling to pay college expenses. Although financial aid programs such as TAP, Pell, and now Excelsior help cover tuition for a significant number of CUNY students, up to two-thirds of the total cost of attendance is in non-tuition expenses. To increase student success, the city and state should direct resources toward the non-tuition expenses that burden low income students.

Provide free MetroCards for all full-time CUNY community college students. Mayor de Blasio could take a giant step to make college more affordable by funding free MetroCards for CUNY's 58,000 full-time community college students. Doing so would help address one of the biggest—and least understood—reasons that so few of the students who enroll in CUNY community college make it to graduation: the cost of public transportation. Although the state's Excelsior Scholarship program is intended to make college more affordable, this report points out that relatively few students in the five boroughs will benefit from that program. As we heard in our research, so many of the city's community college students get tripped up

by other non tuition costs, including the cost of transit, which CUNY estimates at more than a thousand dollars annually for full-time students. CUNY ASAP provides free monthly MetroCards to its participants, and that benefit has proven one of ASAP's most popular features. ASAP has succeeded in more than doubling the three-year graduation rate of its participants in part by addressing college expenses that halt student momentum. It's time to bring this important benefit to all of CUNY's 58,000 full-time community college students.

Provide state funding to expand ASAP to all full-time associate's degree students. CUNY ASAP is the nation's most effective student success initiative, according to independent researchers, more than doubling the graduation rate of community college students that participate. Yet only a small share of CUNY's community college students is able to benefit, due to limited financial support for the program. Although CUNY is now in the process of expanding ASAP to more than 25,000 students, this still represents fewer than half of CUNY's full-time community college students. The governor and State Legislature should develop a funding source that would make ASAP a universal program at CUNY—and whichever SUNY institutions are willing to implement it. Some funding could come from merging the College Discovery opportunity program into ASAP, but state policymakers should be challenged to put enough dedicated funding on the table to make ASAP a wall-to-wall CUNY program.

New York State should overhaul the Tuition Assistance Program (TAP) to support college completion. New York's need-based financial aid scholarship plays a vital role in helping low-income students afford college. Yet many compromises and choices were made in TAP's design without proper consideration for how college students learn and build momentum to reach graduation. Here are four steps the state should take to align TAP with the best evidence on student success in college:

- *Abolish TAP provisions relating to TAP-able credits.* New York State's financial aid grant, the Tuition Assistance Program, requires all courses beyond the general education level to be related to the student's major. This "TAPable" credits requirement is supposed to incentivize students to complete their studies quickly. Instead, it causes students to lose TAP eligibility altogether. Countless students do not understand the provision or often even know about it, and neither do their advisors - a recipe for sudden disaster when the student enrolls in an ineligible course that causes their tuition load to fall below the minimum needed for TAP eligibility. Further, the provision itself is counterproductive in that it penalizes students for choosing a major early, and holds students responsible for taking major-related courses that may not even be available in a given semester. The state should simply legislatively repeal the requirements related to TAP-able credits.
- *Expand TAP and Excelsior coverage to part-time study.* State policymakers should expand TAP to the roughly 103,000 students attending CUNY on a part-time basis. These part-timers are now effectively barred from accessing the state's TAP program, a serious flaw in the program that hurts many low-income students' college aspirations. Although full-time study is far better than part-time study for maintaining academic momentum and should be encouraged, the reality is that tens of thousands of New Yorkers who recognize the importance of getting a college credential cannot set aside work and family responsibilities to attend college on a full-time basis. Moreover, when family or financial problems arise, many students that begin college full-time need to scale back hours for a semester. Doing so, however, typically causes the student to lose eligibility for TAP. Restrictions on the state's current part-time TAP program should be lifted to improve flexibility, enabling students to stay with their college studies and relieving them of the need to take additional classes just to preserve TAP eligibility. Further, the state's Excelsior Scholarship Program requires students to attend for 15 credit hours per semester to maintain eligibility, an unrealistic expectation given the financial demands on so many public college students. Excelsior should also be expanded to include part-time study, possibly by covering a certain number of credits rather than semesters of study.
- *Expand TAP coverage to summer study.* TAP covers college tuition during fall and spring semesters, but not the summer semester. As a result, most students take the summer off. But that's not necessarily a good thing. When it comes to low-income college students, the motto of the organization Complete College America is right on target: "Time is the enemy." The longer it takes to complete necessary classes and graduate, the more opportunities there are for family or financial emergencies to throw students off course. New York should expand TAP to cover full-year study, not just spring and fall semesters, so that students who want to can study year-round and graduate sooner.

- *Increase the TAP maximum award to the level of tuition, but only for public institutions of higher education.* The state has saddled CUNY and SUNY with the massive fiscal burden of covering the difference between the TAP maximum grant and the level of tuition paid at senior colleges. At CUNY alone, this cost amounts to \$50 million annually—money it should be using to hire full-time faculty, improve student advising and expand innovative programs like ASAP and START. It would make sense to raise the maximum TAP grant to the annual tuition level, and then index it for future tuition hikes. But doing so for all colleges in New York would be prohibitively expensive. The state legislature should therefore break with tradition and raise the TAP maximum award only for CUNY and SUNY. While students at private colleges also deserve assistance, the reality is that students attending the colleges and universities chartered by New York State deserve special consideration.

New York State and New York City should collaborate to develop a work-study program for collegiate peer counseling.

Providing more student support does not always mean hiring new staff. One of the most effective interventions at both the high school and college level is peer counseling, in which high school students are trained to support other high school students and college students support other college students. They work 10 to 15 hours per week and are paid for their time. Both DOE and CUNY favor this model, which has shown positive outcomes, but it is limited by funding constraints. New York City should collaborate with New York State to launch a work-study program designed to fund peer counselors and house them within the high schools and colleges most in need of support. New York State should create a task force on college access and success. The state should convene a high-level task force composed of top leaders in the field as nominated by the governor and both chambers of the State Legislature. This task force could be modeled on the Michigan College Access Network (MCAN), which coordinates college access advocacy and technical support in communities across the state. MCAN has set an ambitious goal of achieving 60 percent college attainment for all adult residents of Michigan, and to achieve that goal it brings state and local stakeholders together to advocate for effective policies that support students. In addition, MCAN identifies and implements high-impact practices like promise zones, near-peer college advising, and a college application week—all approaches that New York State could adopt.

New York City should coordinate more effectively with community-based organizations. The city's rich network of community-based organizations offers a powerful resource for supporting college access and success. A survey by Graduate NYC found upwards of 200 programs across the city providing a range of supports across their communities, from college exploration and campus visits to advice on financial aid applications to help connecting to assistance with degree planning and major selection, and much more. Yet the leadership of many of these community based organizations say there is little sign of a cohesive vision for weaving them into the support structure for aspiring high school and college students. That does not mean that DOE or CUNY are standing still. CUNY's Strive for Success initiative enables community based organizations to train young people to become peer counselors at CUNY colleges, forging a point of contact between organization and college. DOE has built specific partnerships with leading organizations such as CARA and Goddard Riverside's Options Center to provide needed services. But the city's policymakers need to go further, by inviting the leaders of community-based organizations to whiteboard a more systematic structure of collaboration between DOE, CUNY, and the nonprofit community.

FOR THE NYC DEPARTMENT OF EDUCATION AND CITY HIGH SCHOOLS

Establish a full-time counselor at every high school to provide targeted support to all students in the college-going process. Testimony of professionals in the field and the best evidence from researchers converge on a paradigm shift that all high schools in New York City need to make: staffing a full-time college and career counselor. It is not that hiring or contracting for such a position ensures that students will achieve their college aspirations. On the contrary, building a college-going culture takes a village. Teachers, administrators, school counselors, and others play vital roles, and models will vary from school to school. But someone has to learn complex financial aid policies that no one else has time to keep up with. Someone has to build and leverage relationships with college admissions counselors. Someone has to provide individualized support to each student, not just the most obviously college-bound. These essential tasks cannot be done on a part-time

basis, especially when college application season arrives and counselors are inundated with anxious students.

Many high schools lack a dedicated college access counselor. With a citywide average student-to-counselor ratio of 224 to 1 and numerous demands on counselors' time, college access becomes just one of several balls they have to juggle. One approach might be to simply require high schools to hire a dedicated college access counselor. But this would invite paper compliance. Instead, DOE should take two steps that will move toward the goal. First, provide a funding stream for college access counseling, with the understanding that schools that already employ a full-time college access counselor can use the money creatively for a related purpose. Second, require high schools to report whether they have full-time staff carrying out the full-time college access counseling function, and publicly post the information for parents to see. That will enable the public to find out how seriously a given high school takes building a college-going culture and generate support from each school's community of parents and students.

The city also needs more consistent training in college access counseling for the next generation of school counselors. The Department of Education could offer preferential hiring for applicants who have college access training, and create externship slots for counselors in graduate programs to be mentored by school counselors experienced in college access counseling.

Expand the Office of Postsecondary Readiness and give it a leadership role in DOE's college access initiatives. The Office of Postsecondary Readiness's college access division is responsible for boosting college access and success in the New York City public school system. Until recently, however, the college access and success staff at OPSR consisted of only a handful of people. Even now, as the staff swells to 25, it remains too small to bring individualized services to the city's 400-plus public high schools, and lacks authority to drive change beyond the specific initiatives it has been tasked with carrying out. DOE should develop the budget and staffing levels needed to provide sustained and effective support for the development of college-going culture in the city's middle and high schools, as well as research and analysis into effective college access interventions.

OPSR should be the clearinghouse and coordinator for college access and success initiatives at DOE. While OPSR already plays a valuable role in professional development through its collaboration with Goddard Riverside's Options Institute, the office should have the capacity to conduct extensive ongoing professional development for school counselors in college access counseling, comparable to that provided by affinity groups such as Urban Assembly and New Visions for Public Schools for the schools they support.

Leverage economies of scale in expanding access to rigorous college-preparatory courses. Students who take and pass rigorous college-preparatory courses—such as chemistry, physics, and precalculus—are more likely to succeed in college. Too few high school students take such courses, in part because many schools do not offer them. A lack of college-preparatory courses disproportionately affects the small high schools created during the Bloomberg administration. Yet attempting to add such courses to every single small high school could take years—especially given competing commitments to expand availability of computer science courses. Furthermore, the supply of teachers trained to use instructional techniques grounded in evidence on what helps young people learn is too small, and will also be a long-term project.

Instead, DOE should seek economies of scale. For example, many small high schools are co-located with other small schools or charter schools. It should be possible to offer college-preparatory courses—as well as other courses for smaller subpopulations, such as English language learners—for all schools co-located in a single building. Another strategy could be called a “hub-and-spoke” approach. For example, Board of Cooperative Educational Services (BOCES) schools are active in most counties outside New York City. They are funded and managed by school districts in their service area in order to provide educational services that span multiple school districts. DOE could replicate this approach by establishing a “hub” center to offer courses and programs of study that are not cost effective for individual schools to provide. Students in the “spoke” schools attend the center to take college preparatory courses relevant to their career aspirations. There are difficult

issues to solve with such an approach, such as finding space for the center and providing convenient transportation so that getting to and from the center does not become an obstacle. But the reward would be equitable and cost-effective access to rigorous college-preparatory courses.

Yet another strategy would be to add new capacity to the College Now program, which already teaches college-preparatory courses to more than 20,000 high school students annually. However, the students who currently visit CUNY to take these courses are among the school system's most gifted young people and are likely to enroll in college regardless. CUNY and DOE should consider adding new capacity for College Now to target services to students who lack college readiness. Offering a set of courses that can engage young people who read, write, or perform math below grade level would be a valuable service, and it would build on the services College Now already provides.

Overhaul math instruction in the city's high schools. More than half of all first-year students entering a CUNY associate's degree program—some 13,000-plus students—place into a remedial math course, and six in ten of those students drop out within the next two years. One key problem seems to be the city's math curriculum, shaped in part by State Regents Examination requirements. Students do not take enough years of math to succeed in college, according to experts we interviewed; the senior year of math study is underutilized; and math curricula are aligned with the Regents math exams, but not with the CUNY math placement exam, thereby driving many students unnecessarily into math remediation courses. The State Education Department oversees the Regents math examinations and statewide graduation requirements. DOE should work jointly with the State Education Department and CUNY to align Regents math exams with credit-bearing math courses; encourage or incentivize students to take four years of math coursework, notably in the senior year; and provide more instruction in practical alternatives to higher-level algebra and pre-calculus, such as statistics and quantitative reasoning.

Advocate for collective-impact initiatives in high need communities throughout the city. The city's wealth of community-based organizations are too disconnected and piecemeal in their approach to students and schools. New York urgently needs a comprehensive strategy to harness their enormous value. One promising approach is the collective-impact model, which brings stakeholders together to collaborate in solving large-scale social problems too intractable for any one organization or agency. Collective impact is strengthening educational reform in several communities, including Seattle, Cincinnati, and south Texas. In the Bronx, South Bronx Rising Together, Bronx Opportunity Network, and Here to Here are implementing a model from which other high-needs communities can learn. DOE should encourage and staff the development of collective-impact collaboratives on a pilot basis in neighborhoods such as Brownsville / East New York, Harlem, and Corona.

Build capacity to evaluate the effectiveness of college access and success interventions. The city lacks crucial information on what interventions are most effective at improving students' ability to get into college, afford college, navigate college culture, and graduate with a marketable credential. DOE already operates an effective in-house evaluation office, and works closely with the Research Alliance for New York City Schools. What is needed, however, is a top-level citywide agenda that aligns research, evaluation, and practice to compare the effectiveness of the most commonly used college access and success models and to develop new approaches as evidence emerges. The mayor should engage the Center for Economic Opportunity to bring in top national research organizations in collaboration with DOE, with external funding secured through the Fund for Public Schools to the extent possible. Armed with evidence-based practice models, the city can invest in partnering with organizations that use the most effective interventions to pilot new strategies and scale the approaches that work best.

FOR THE CITY UNIVERSITY OF NEW YORK AND PUBLIC COLLEGES

Expand the use of alternatives to remediation, notably fixing math remediation through college-level statistics with corequisite workshops. The track record of developmental education is a grim one. Students who test into developmental education in math or English must attend a community college (unless accepted into the SEEK opportunity program), and 85

percent of students enrolled at community colleges are placed into developmental education. Students taking remedial courses use up their financial aid without getting any closer to graduation, and they are far more likely to drop out than other students. Furthermore, test-based placement into developmental education is highly inaccurate: research shows that many of these students could have succeeded in credit bearing coursework, which could have kept them on the path to a degree.

CUNY has launched an ambitious reform that calls on community colleges to offer at least one alternative to conventional remediation. Math is especially overdue for a top-to-bottom overhaul, and CUNY has a promising evidence-based strategy to offer: a nonalgebra gateway course—such as statistics or quantitative reasoning—paired with weekly workshops (known as corequisite workshops) in which students can deal with concepts that give them trouble. Other colleges and states have found that this model produces remarkable gains in pass rates and college success. But CUNY’s community colleges need to embrace the statistics- plus-corequisite model and reorient their math remediation systems around it to achieve system-wide change. In the past, some math and English departments responsible for developmental education have shown little enthusiasm for reform. If that pattern repeats itself over the next several years, thousands of first-year college students each year will fall prey to wasted time and a far higher dropout risk.

Support student transfer from community colleges to senior colleges. Transfer students are the lifeblood of CUNY’s 11 senior colleges. In fall 2016, for example, half of senior colleges’ entering class of 36,587 undergraduate students were transfer students. Yet their progress toward a degree is too slow and uncertain. It is essential for CUNY to support student transfer more effectively. One effective strategy is to standardize acceptance of community college courses for credit at senior colleges, and in particular for credit toward the student’s major. CUNY needs more consistent and effective credit approval procedures that span all of its senior colleges.

CUNY ASAP provides another potentially promising route to support transfer students. Many students transfer from community colleges to senior colleges through the ASAP program, at which point all of the supports they received through ASAP lapse, leaving them to struggle through a new academic environment on their own. John Jay College is piloting a CUNY ASAP program for bachelor’s degree students called John Jay ACE. The city and state should support the scaling and replication of a bachelor’s degree version of ASAP, particularly for transfer students who participated in ASAP at their home institutions. The benefit to the city’s economy and CUNY’s degree production effectiveness would far outweigh the costs. One possibility would be to create an outcome-based funding stream, so that improved graduation rates are rewarded by higher funding levels.

Shift CUNY’s colleges and universities to a guided pathways framework. CUNY plays a vital role in offering higher education opportunities to young people who are the first in their family to seek a college education. Yet these students find navigating a college to be extraordinarily different. They face an alien culture and expectations, complex rules, tangled financial aid regulations, and unforgiving expectations, usually without any family members or close friends to ask for help. Too often they fall off track, signing up for a course that costs them financial aid eligibility or misunderstanding their major requirements.

Colleges across the country are developing guided pathways models that clarify the paths students can take to graduation day, with promising results. Guttman Community College already uses a guided pathways approach, as does CUNY ASAP. CUNY has already endorsed guided pathways at the systems level by agreeing to partner with Complete College America to develop a strategy. But the rubber will hit the road at the 17 campuses that have yet to transition to guided pathways. CUNY should build a template to facilitate the process by which most if not all of its colleges and universities can migrate to a career pathways framework. The city and state, as well as the philanthropic community, should explore funding opportunities that will help individual colleges manage start-up costs.

Develop more employer-recognized, credit-bearing non-degree programs at community colleges. In an ideal world, most community college students would be able to attend school full-time, accumulate transferable credits, and ultimately

graduate from a senior college with a bachelor's degree. But for students facing financial burdens, family obligations, and other challenges, CUNY needs to offer other options, too--options like certificates and certifications that cost far less in terms of both time and money while increasing employment opportunities and ultimately building a path to a degree. The most effective bridge between certificates and degrees is an agreement to allow courses in a certificate program of study to count for college credit if the student later enrolls in a degree-seeking program. Some programs, such as Borough of Manhattan Community College's IT Career Pathways program and Bronx Community College's Community Health certificate program, are "stackable" in this way.

Yet stackable programs are few and far between in the CUNY system. CUNY should work closely with industry partners, including employers and unions, to develop employer-recognized credentials that stack toward a degree. These credentials could form a crucial link in the chain from occupational coursework to graduating with a two- or even a four-year degree. In addition, New York State should provide partial subsidies to certificate and certification programs if they are stackable toward a degree and meet certain minimum standards.

Develop an artificial intelligence assistant to reduce summer melt and support advisors. Georgia State University (GSU) has achieved a powerful breakthrough that points the way for CUNY and other New York colleges. GSU faced a common problem called summer melt, in which students are admitted, commit to attending, and then fail to enroll—not just at GSU, but at any college. GSU has tracked summer melt rates as high as 18 percent. In response, researchers working with the college developed an artificial intelligence assistant they dubbed Pounce to send texts to admitted students' cell phones. The texts provided information to students on milestones they had yet to complete, such as submitting their financial aid form to the federal government, submitting a high school transcript to the college, and RSVPing for orientation. The program was highly successful, reducing the workload for advisors and cutting the summer melt rate significantly.⁹⁰ CUNY should use a virtual assistant like that used by GSU. If it proves successful, the virtual assistant could be trained to support colleges with other tasks, such as financial aid and career services advising.

Reform the Office of the State Comptroller's approach to TAP audits. CUNY students who lose TAP eligibility are often driven out of college, unable to foot the tuition bill. This problem is far more prevalent than most New Yorkers realize due to the complexity of TAP's eligibility and benefit rules. Harsh audits by the Office of the State Comptroller exacerbate the issue by forcing financial aid administrators to adopt a legalistic compliance mentality with students, either suddenly depriving them of financial aid or forcing them to choose courses solely to maintain TAP eligibility. To be sure, the State Comptroller has a fiduciary duty to provide oversight of this major financial aid program. But the office needs to focus on safeguarding against bad actors without punishing students—or college administrators acting in good faith.

The Office of the State Comptroller should adopt more restrictive criteria for launching audits, and use them as correctives rather than opportunities to confiscate college revenues. In addition, the State Education Department should convene a working group—including representatives from OSC, HESC, SUNY and CUNY financial aid offices, and community-based organizations—to identify changes to TAP regulations that can help more students succeed, develop clear guidance for all rules and regulations, establish appropriate training for TAP certifying agents, and help colleges and CBOs adopt best practices to maintain compliance.

90. Lindsay Page and Hunter Gehlbach, How an Artificially Intelligent Virtual Assistant Helps Students Navigate the Road to College, March 2017.

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CENTER FOR AN URBAN FUTURE
120 Wall Street, 20th Floor, New York, NY 10005

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