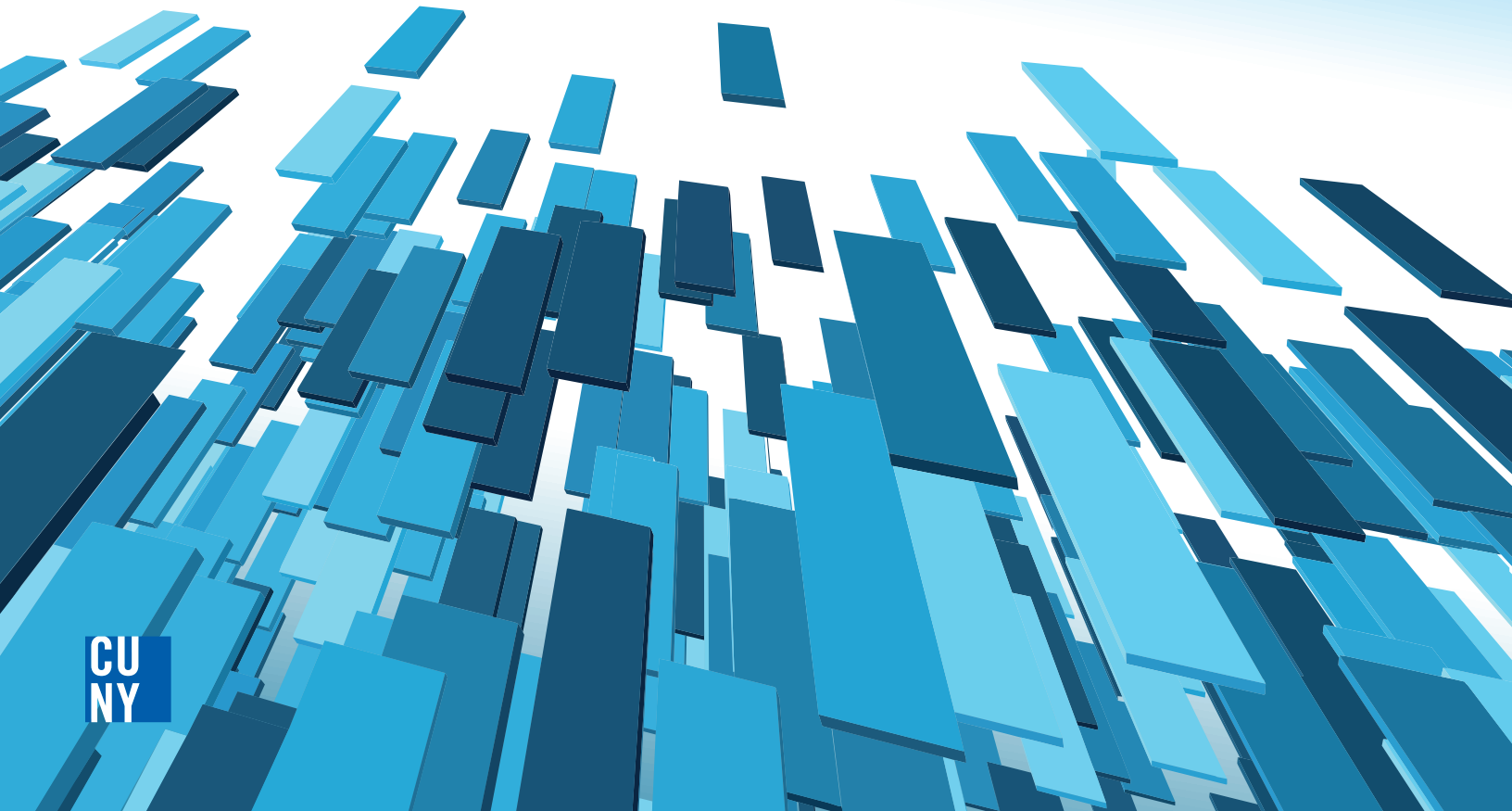
Investing In Our Future

The City University of New York's Master Plan
2012–2016



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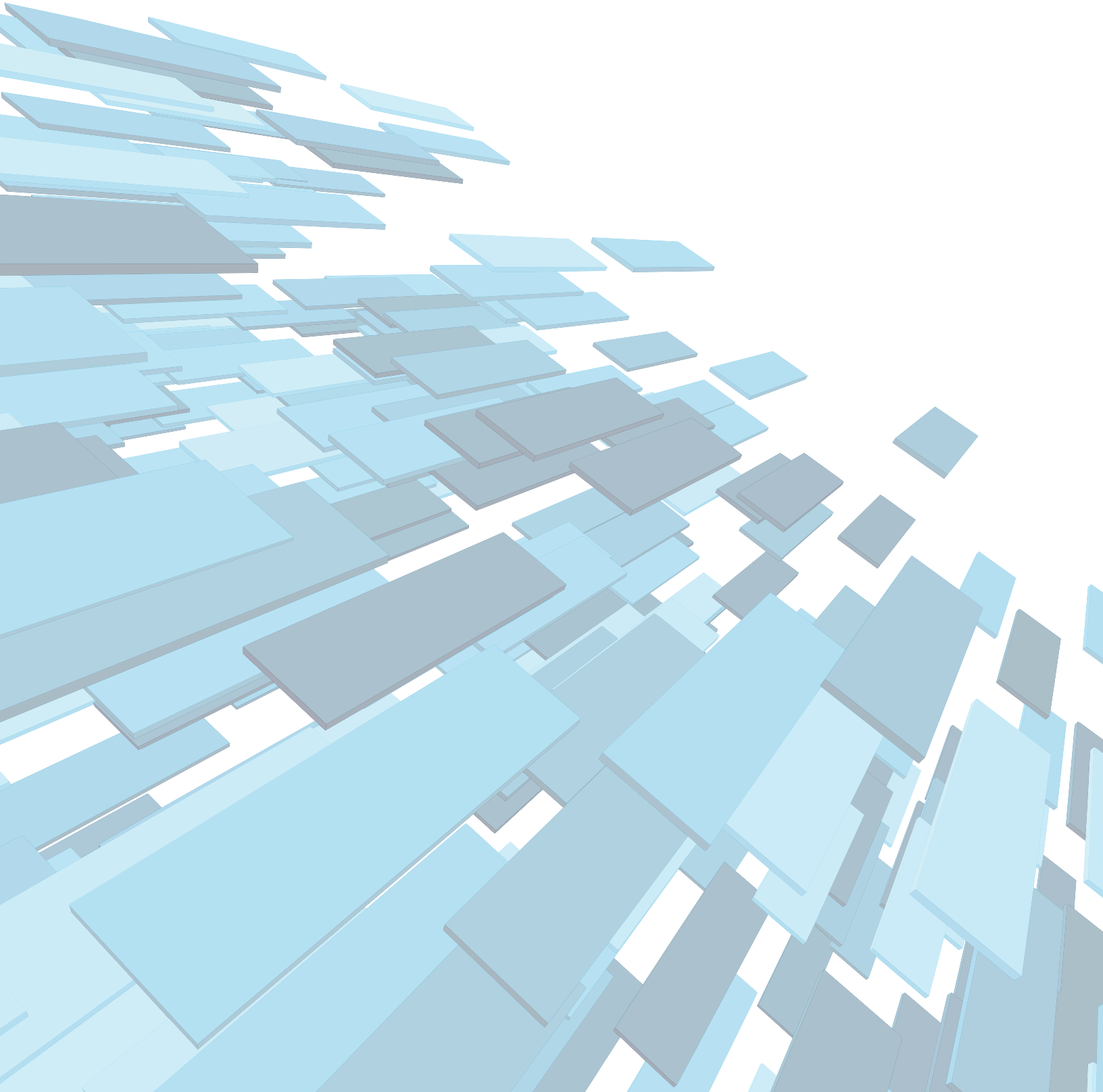

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The City University of New York's Master Plan

2012–2016

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INTRODUCTION:
The CUNY Context, Mission, and Vision

Historical Underpinnings, Mission, and Vision

The City University of New York's 2012-2016 Master Plan builds on the significant progress achieved through preceding plans. More than a decade ago, the University's Master Plan for 2000-2004 set forth a strategy of institutional renewal. Since 2000, the University has been successfully charting a course toward academic distinction, beginning with its comprehensive response to the 1999 report of the Mayor's Advisory Task Force on CUNY, The City University of New York: An Institution Adrift. This task force was chaired by now CUNY Board of Trustees Chair, Benno C. Schmidt Jr.

Over the past 12 years, the University has continued to implement bold, strategic measures to position itself among the most highly regarded and respected institutions of public higher learning. Under the guidance of Chancellor Matthew Goldstein, and through the collective efforts of CUNY's Board of Trustees, presidents, faculty, staff, students, alumni, and friends, the University is today navigating a course of academic achievement and innovation, while sustaining its traditional roles and responsibilities. Indeed, CUNY is a leader in defining public higher education for the 21st-century, whether developing new approaches to student learning, building collaborative research models, or creatively partnering with the city's communities.

From the founding of City College as the Free Academy, in 1847, the historic mission of The City University of New York has been to provide New Yorkers with both access to and excellence in higher education. At that time, founder Townsend Harris proclaimed, "Open the doors to all ... Let the children of the rich and the poor take their seats together and know of no distinction save that of industry, good conduct and intellect."

More than 100 years later, in 1961, Governor Nelson Rockefeller signed into history the law establishing The City University of New York, granting university status to the system composed then of Hunter, City, Brooklyn, and Queens Colleges, as well as Staten Island, Bronx, and Queensborough Community Colleges. This historic legislation, Section 6201 of the New York State Education Law, states the following:

> The legislature intends that the City University of New York should be maintained as an independent system of higher education governed by its own board of trustees responsible for the governance, maintenance and development of both senior and community college units of the city university. The university must remain responsive to the needs of its urban setting and maintain its close articulation between sen-

> ior and community college units. Where possible, governance and operation of senior and community college units should be jointly conducted or conducted by similar procedures to maintain the university as an integrated system and to facilitate articulation between units.
>
> The legislature's intent is that ... the university will continue to maintain and expand its commitment to academic excellence and to the provision of equal access and opportunity for students, faculty and staff from all ethnic and racial groups and from both sexes.
>
> Only the strongest commitment to the special needs of an urban constituency justifies the legislature's support of an independent and unique structure for the university.

Gustave Rosenberg, Chair of the Board of Higher Education, which had coordinated the system since the 1920s, summarized the goal of this historic mission, "that in a democratic society, the higher reaches of education are not the exclusive privilege of an elite, but an opportunity and a necessity for all qualified citizens who desire it, regardless of race, creed or color."

The 2012-2016 Master Plan articulates and advances the core academic values embedded in this mission: an uncompromising commitment to academic rigor, accountability, evidence, and assessment; a focus on the collaborative potential and promise of a single, integrated University; a steadfast insistence on the ability to serve students from all backgrounds, ensuring that each student has the opportunity to proceed smoothly through the educational pipeline to degree completion; and a dedication to the needs of the University's urban setting.

These values remain constant, and yet the University must be responsive to the needs of evolving times and circumstances. As steward for its students', its city's, and its state's futures, the University must work unceasingly and with the utmost care and deliberation to ensure the value of a CUNY degree in an increasingly competitive 21st-century marketplace of jobs and ideas.

Toward these ends,

> ***By the end of the period of this Master Plan, 2016, CUNY will fulfill its current trajectory and be widely recognized as the preeminent public urban university in the world. This recognition will be based on CUNY's continuing to adapt its historic mission to the complex needs of the 21st-century, particularly the 21st-century needs of New York City and New York State. CUNY's achievement in 2016 will be founded on its status as offering a high-quality, affordable education to the changing population of New Yorkers; generating significant basic and applied research; having a world-class faculty, as well as the requisite advisors, facilities, library resources, and academic and enterprise technology that are essential to teaching, research, and learning in our times; having smooth and efficient pathways to degree completion and pipelines from the public schools; and having a model culture of evidence collection and assessment as part of responsible and strategic resource management/stewardship. By 2016, CUNY will bring to fruition initiatives that garner the many benefits of an integrated university while simultaneously respecting and encouraging the unique identities of its colleges.***

The CUNY Context

Overview

All of the University's goals and efforts unfold within the integrated matrix of its parts. The University's 24 institutions include 11 senior colleges (those with baccalaureate programs: Baruch College, Brooklyn College, City College, College of Staten Island, Hunter College, John Jay College, Lehman College, Medgar Evers College, New York City of Technology, Queens College, and York College); seven community colleges (those with associate but not baccalaureate programs: Borough of Manhattan Community College, Bronx Community College, Hostos Community College, Kingsborough Community College, LaGuardia Community College, New Community College, and Queensborough Community College); the William E. Macaulay Honors College; the Graduate School and University Center; the CUNY Graduate School of Journalism; the CUNY School of Law; the CUNY School of Professional Studies; and the CUNY School of Public Health. The vitality and distinctiveness of each individual unit cannot be overemphasized. As much as this document must necessarily take a macro-level view of the University and its goals and challenges as a whole, the core work of teaching and learning takes place every day on every individual campus.

It is also essential to underscore CUNY's status as the nation's largest urban public university. Serving more than 270,000 students in credit-bearing programs, and another more than 200,000 continuing and professional education students, the University confers 35,000 degrees each year—more than 1.1 million associate, baccalaureate, master's, and doctoral degrees since 1967. Indeed the University provides postsecondary education at every level, from certificate programs through doctoral-degree study, and in a huge variety of fields of interest, as well as programs linking secondary and postsecondary education. In 2010-2011, there were about 1,400 active academic programs at CUNY.

At the same time, the University is also among the nation's most diverse institutions of higher education. Information provided in a subsequent section of this plan will detail this richness. For the purposes of introducing this plan, it is useful just to note this incontestable fact: CUNY continues to be an attractive, and increasingly desirable, destination for all types of New Yorkers.

In fall 2011, full-time equivalent (FTE) student enrollment at CUNY (i.e., the number of full-time students alone it would take to generate the observed classroom enrollments) surpassed 200,000 for the first time. This milestone reflects a pattern of significant enrollment increases: Student FTEs have grown at an annual rate of approximately 5 percent over the past six years. The University's tremendous enrollment growth continues to be both good news and a challenge, as year after year the University breaks records in the volume of application documents received and reviewed. The University's first priority remains to provide students with access to a quality education that stimulates students and results in their leading productive and satisfying lives. Meeting that contract with admitted students—while remaining ever mindful of the University's historic access mission—has required and will continue to require strategic enrollment management policies and practices, particularly given that not even vigorous efforts to hire additional full-time faculty have been able to keep pace with the enrollment increases. The University now faces difficult decisions—detailed later in this plan—to make up this lost ground.

Part of the University's attractiveness to students can no doubt be traced to the fact that even among public colleges and universities, CUNY continues to offer an exceptional value. In Academic Year (AY) 2011-12, tuition at CUNY community colleges is $3,600 /year; tuition at CUNY senior colleges is $5,130/year. Compare these numbers to these national averages: $8,244 at public four-year institutions, $14,487 at for-profit institutions, and $28,500 at private non-profit colleges, with many colleges charging significant additional fees.

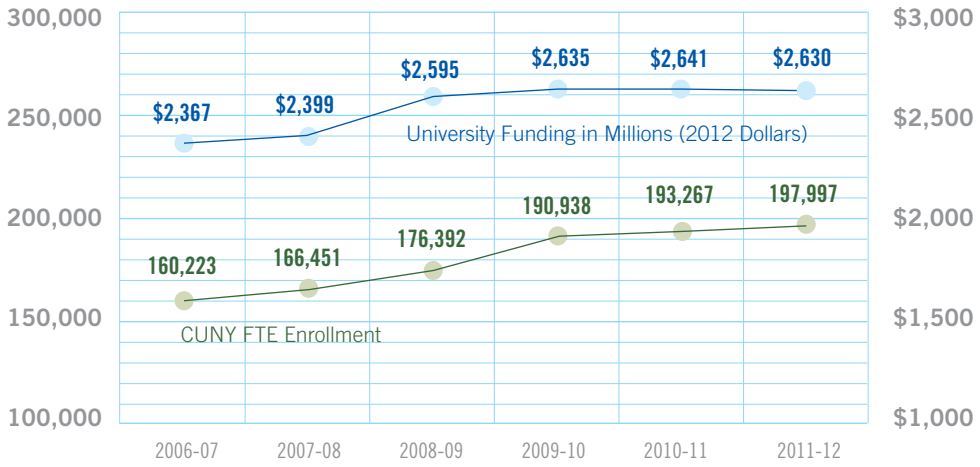
For all of these reasons, CUNY plays a crucial role in the life and economy of both New York City and New York State. As of 2007, 54 percent of undergraduates and 46 percent of all college students in New York City were attending CUNY, and 80 percent of CUNY graduates are still in the New York City metropolitan region 10 years later. College Now, CUNY's academic enrichment program for 20,000 high school students, is offered by CUNY campuses at more than 350 high schools. Online courses and programs are also offered by the individual colleges and by the School of Professional Studies to a rapidly growing population.

Maintaining and enhancing CUNY's quality during the past decade has been extremely challenging, not only due to CUNY's growth, but due to the fact that this has been a period of declining public resources. However, CUNY has a unique opportunity to plan for the period of the current Master Plan due to the unusual financial stability it will enjoy until 2016.

CUNY Financial Structure: Past Instability and Future Stability

Although overall senior college full-time equivalent enrollments have increased by 9.6 percent over the last four years, state aid for the University's operating budget sustained reductions totaling $300 million during that same period. State base aid for the community colleges has been reduced by more than 20 percent over the last four years, while enrollment has increased by 26 percent.

University Funding per Student Full-time Equivalent
2006-2012



University Funding per Student Full-time Equivalent
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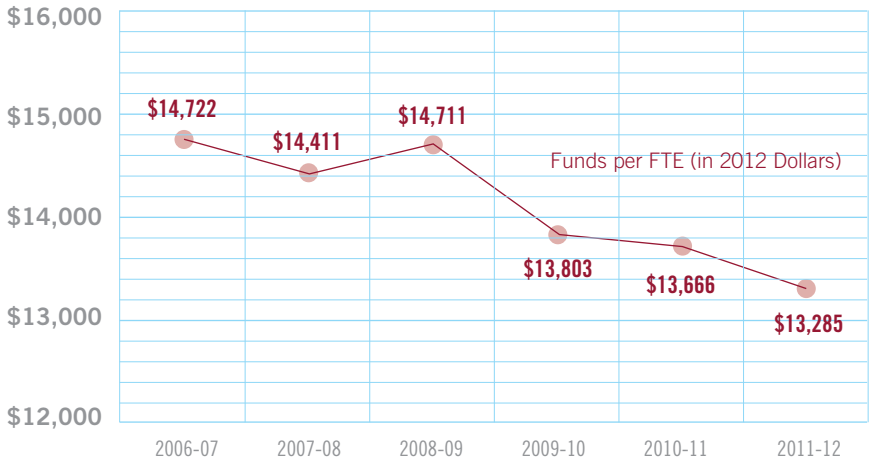


All dollar figures are adjusted for inflation using the Higher Education price Index and are expressed as 2012 dollars.

Given these continuing reductions in city and state aid, it has been very difficult to maintain and enhance quality, as well as to plan. For the better part of a decade, Chancellor Goldstein has advocated a predictable tuition policy, one that would provide stability for the institution and allow CUNY, as well as students and their families, to plan for the future. He has advocated for what is known as the CUNY Compact: state-authorized, predictable tuition increases accompanied by increased philanthropy and productivity by CUNY.

The Chancellor has steadily gathered support for this policy through speeches, legislative testimony, and private conversations. In November 2005 remarks to the Center for Educational Innovation-Public Education Association, the Chancellor said, "Public higher education must be a public priority, just as it is a public good. It's clear that we must re-envision our partnership with the state in order to ensure that every student is encouraged and enabled to pursue a college degree." In addition, he placed financing for public higher education at the center of discussion during two national summits, in October 2008 and November 2010, that he hosted at CUNY.

The culmination of these efforts arrived in June 2011, when Governor Andrew Cuomo and the state legislature signed into law authorization of elements of the compact model. The centerpiece of the new legislation is the establishment of a tuition plan, one that builds in modest, predictable increases tied to state funding while still protecting the neediest students. The model delineates shared responsibility among partners and creates opportunities to leverage funds. It has four main elements:

- A "maintenance of effort" provision that ensures that New York State's financial support cannot be reduced from prior-year levels unless a fiscal emergency is declared;
- Authorization of a tuition policy that allows CUNY and SUNY to increase tuition up to $300 annually for five years (through 2015-2016) for full-time undergraduate resident students;

- A CUNY commitment to increase revenue from philanthropy, which, under Chancellor Goldstein has risen from $35 million 12 years ago to more than $200 million per year now; and,
- More efficient operations.

The new tuition policy allows families to plan for the costs of higher education while protecting the neediest students. The legislation requires that a tuition credit be given to those students who are eligible for the state Tuition Assistance Program (TAP) when the annual tuition exceeds $5,000. At CUNY, a portion of the revenues generated from the increased tuition will be set aside for this purpose.

In a significant break from past practice, the state is allowing the University to keep all of the revenue from the new tuition. This important provision ensures that students' investment in their education stays at the University, supporting academic priorities and student services.

Based on the planned tuition increases, CUNY will have an additional $65 million per year for investment purposes during each of the four years of this Master Plan. CUNY can expect further increases in revenue from enhanced philanthropic, productivity, and entrepreneurial efforts. Such planned additional revenue, stretching four years into the future, is highly unusual—if not unique—in public higher education.

It is therefore no surprise that, in announcing the passage of this legislation, Board of Trustees Chairperson Benno Schmidt said, "This deserves to be seen as this Chancellor's greatest achievement to date. CUNY has gone from being the large public institution least well able to plan its future to the public university, I think it's fair to say, that is now best able to plan its future ... I expect that the next five years will be the best five years that CUNY has ever seen."

Useful as this legislation is, to obtain its full benefit CUNY must work toward the creation of new revenue streams through enhanced fundraising, reduction in administrative costs, and entrepreneurial activities. The legislation will help the University to maximize philanthropic support, because it demonstrates to donors that the state is investing in the University's financial stability and that philanthropic gifts are not substituting for a lack of state support. The legislation will also help the University meet the growing needs resulting from record student enrollment. It sends a powerful signal to donors, families, and the business community that New York is investing in its students and its future through stable support of its public university systems. Most important, the financial stability provided by the new legislation will enable CUNY to undertake multi-year planning, increasing the University's efficiency.

With the need for new revenue streams in mind, in 2004 CUNY launched its very first University-wide capital campaign, "Invest in CUNY." The overwhelming response from alumni, businesses, foundations, and friends helped the campaign surpass its goal of $1.2 billion four years ahead of the 2012 target date. CUNY now raises $200 million-$250 million a year to support students, faculty, programs, and facilities. Although central University policies triggered the campaign, much of its success has been driven by campus-based initiatives that have strategically identified program priorities, determined timelines, and established targets.

The campaign's success has inspired the University's leadership to embark on a bold and ambitious second phase. Chancellor Goldstein, Chairman Schmidt, and the college presidents have announced the

launch of "Invest in CUNY: Expanding the Vision," which has set a new cumulative goal: $3 billion by 2015. This campaign focuses on carefully selected priorities of the University and the colleges, including investing in faculty, advancing the Decade of Science initiative, and supporting student opportunity and progress.

CUNY's vision for quality and distinction is built upon an expanding partnership of private and public support, and that includes an enhanced culture of philanthropy.

A Map for This Plan

A detailed environmental scan immediately follows this Introduction, after which this plan is divided into five additional sections, along with a set of appendices to provide complementary and supplementary information. Of the five additional sections, four discuss CUNY's plans with regard to the four different aspects of CUNY's mission, and the fifth discusses the financial, technological, and facilities resources necessary in order to effect these plans.

The first section following this Introduction, "The Environment," covers such essential planning information as projected population growth and changing labor needs.

The next section, "The Mission Part One: The University Will Continue to Maintain and Expand Its Commitment to Academic Excellence," focuses on the essentials of high quality and performance, and explains how CUNY will increase and diversify its full-time faculty; foster a research agenda; cultivate excellence in undergraduate and graduate programs; manage the University's library and technology needs; and generally continue to aim for the very highest levels of academic accomplishment.

The following section, "The Mission Part Two: Maintain the University as an Integrated System and Facilitate Articulation between Units," remains focused on the academic mission. However, this section concentrates on specific internal and external needs that must be met in order to make it possible for all New Yorkers to pursue and successfully complete a college education. Part of this work involves a major effort to integrate CUNY's general education curriculum across the University and enhance seamless college transfer, and other parts involve programs specifically designed to take advantage of the power of the system in facilitating cross-campus academic collaborations.

The next section, "The Mission Part Three: Expanding Access," addresses the ways in which CUNY will continue to meet its mandate of providing access to an excellent education to all New Yorkers, with particular attention to citizens from underrepresented groups. This part of the plan will also detail efforts to create smooth paths for students as they begin college work, both within CUNY's own developmental education programs and in pre-college preparatory collaborations with the New York City Department of Education.

The following section, "The Mission Part Four: The University Must Remain Responsive to the Needs of Its Urban Setting," will cover the myriad ways that the University serves the city and state, as well as the ways in which the University will strengthen its connections with New York's economic and social life over the next four years. This section will also cover the infrastructure—administrative technology and facilities—necessary for the University to function well in its urban setting.

The Environment

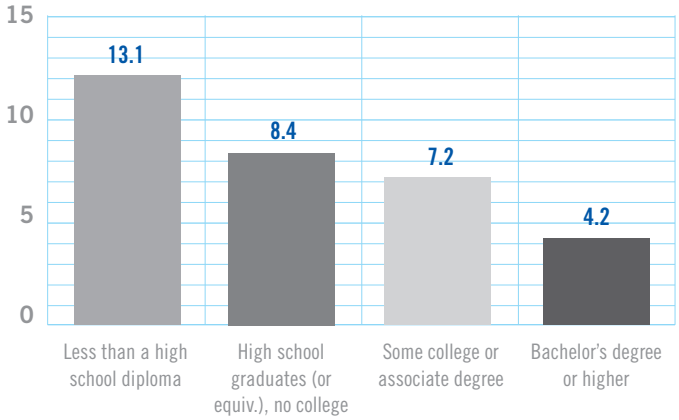
Every master plan starts from the knowledge that the world is continually changing. The University must operate in and adapt to a dynamic social, political, and economic context.

The Economic Recession and Recovery

This Master Plan is being developed as the country emerges from the worst economic downturn in the United States since the Great Depression. The recovery has been fragile, unemployment remains high, and anger at financial and political institutions is widespread. According to the New York State Department of Labor, in December 2011 the unemployment rate in New York City was 9 percent; statewide, at that time, it was 8 percent; and nationwide, it was 9 percent.

Increasingly, the economy favors students with appropriate credentials. The higher the level of education, the more likely people are to be employed and to earn more, and the less likely he or she is to be laid off in a future recession. In January 2012, according to the Bureau of Labor Statistics, the U.S. unemployment rate for people 25 years and over with only a high school degree was 8.4 percent, the rate for those with some college or an associate degree was 7.2 percent, and the rate for those with a baccalaureate degree and higher was only 4.2 percent.

Education and the Economy
Unemployment Rate by Educational Attainment
January 2012



Source: Bureau of Labor Statistics News Release, February 3, 2012
Unemployment rates are the seasonally adjusted rates for the civilian population 25 years and over

The Labor Market and CUNY Programs

CUNY programs are crucial to ensuring that New Yorkers have opportunities for good jobs and career advancement. CUNY provides postsecondary education at every level from certificate through doctoral programs, in a myriad of fields. In 2010-2011 there were approximately 1,400 active programs at CUNY—50 certificate programs, 240 associate degree programs, 547 baccalaureate degree programs, 484 master's degree programs, and 60 doctoral programs. Of these, 357 were in STEM areas (science, technology, engineering, and mathematics).

Projections suggest growth in employment opportunities that require different levels of credentials but that all offer good salaries. Many of these opportunities fall within occupational areas that require a baccalaureate degree: teaching, business and finance, sales, computer technology, writing and editing, art and design, human resources, engineering, and architecture. CUNY has strong programs in all of these areas.

For example, the number of students graduating from CUNY's teacher education programs has increased by more than 13 percent over the past 10 years; about one-third of the teachers in New York City's public schools were educated at CUNY. In business and finance, CUNY awards about 4,500 baccalaureate and 800 master's degrees each year (excluding sales and marketing). These numbers include about 2,000 degrees from accounting programs annually. Graduates from CUNY writing programs make up more than one-third of the writers and editors trained by city institutions of higher education.

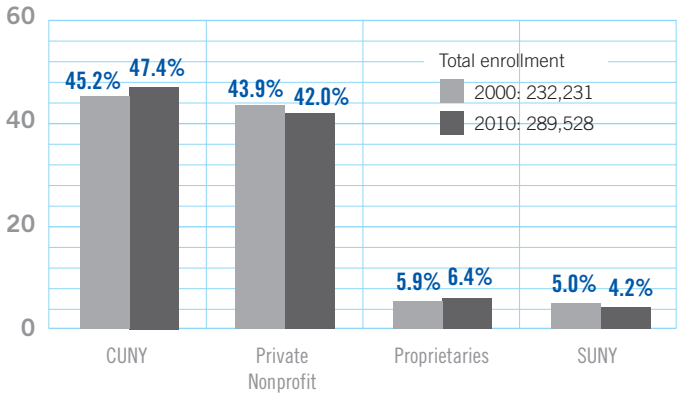
Other high-demand occupational areas require workers to hold an associate degree. Representative careers include health and science technician, registered nurse, computer support specialist, engineering technician, paralegal and legal assistant, designer, and broadcast technician. In these areas, too, CUNY offers strong programs. The numbers of CUNY graduates from associate programs in nursing and other allied health fields have increased by 10 percent and 60 percent, respectively, over the past 10 years. About 65 percent of the associate-level registered nurses who graduate from New York City institutions are graduating from CUNY; more than 500 CUNY students graduate each year prepared for jobs as health or science technicians. About 400 CUNY students graduate each year prepared for jobs that require an associate degree in computer support; this is about half of total number of associate-degree graduates in computer support from around the city. CUNY graduates also account for about half of the workforce in engineering technology.

Market Share and Competition

New York City has the third-highest college enrollment rate among the 10 largest cities in the United States; only San Jose, California, and Philadelphia, Pennsylvania have larger shares of their college-age populations (18-24) enrolled in college. Moreover, CUNY serves the majority of undergraduates who enroll in college in New York City: 56 percent, compared to 32 percent in independent/private colleges, 9 percent in proprietary colleges, and 3 percent in SUNY.

Over the past 10 years, looking at postsecondary education as a whole, CUNY and the proprietary sector have gained market share in New York City, while the private institutions and SUNY have lost market share. However, among two-year institutions alone, although CUNY's market share is high (79 percent), from fall 2001 to fall 2010 CUNY's market share dropped from 83 percent to 79 percent. The absolute numbers in the proprietary institutions are substantially lower (18,428 in 2010), and they offer far fewer program options, but their market share rose from 12 percent in fall 2001 to 16 percent in fall 2010. Whether or not this trend continues will depend on a number of factors, including what new programs CUNY develops over the course of the period covered by this Master Plan.

CUNY Has Gained Market Share in 4-Year Colleges.
Trends in Enrollment at 4-year NYC Colleges by Sector



Source: IPEDS

New York City and Population Trends

The vast majority of CUNY students are New Yorkers; more than 82 percent live in New York City. Some of the senior colleges, because of their locations (e.g., near Westchester County), or special programs (e.g., John Jay), also attract a sizable minority from areas in New York State beyond New York City. CUNY's graduate programs attract students from outside the city and from outside the state.

Most CUNY undergraduates are products of the New York City Department of Education (DOE) high schools. The percentage of CUNY first-time freshmen from those high schools has been increasing, from 61 percent in fall 2002 to 71 percent in fall 2011. Community colleges saw the largest increase in student enrollment from the DOE—from 53 percent in fall 2002 to 72 percent in fall 2011.

A few years ago, it was predicted that the size of New York City's high school graduating class would decrease substantially, but that decline has taken place much more slowly than anticipated. Enrollment in grades 9-12 is now projected to decline only 3.4 percent between 2013 and 2018 (or in absolute terms, a drop from 271,466 high school students in 2013 to 262,119 in 2018). This relatively small decline is being offset by a number of factors, not the least of which is that DOE graduation rates have been steadily increasing, from 51 percent in 2002 to 68 percent in 2009. Thus, CUNY can expect a steady stream of applicants from the DOE in the period covered by this Master Plan.

In addition, the city's population continues to grow. It currently stands at an all-time high of nearly 8.2 million residents. This increase in population is the product of population "churn," with domestic losses offset by large international inflows and natural increases (the balance of births and deaths). Those international inflows, i.e., the numbers of immigrants settling in New York City, grew by nearly 700,000 over the first decade of the 2000s. This influx is expected to continue, helping to drive the city's overall population up 8.3 percent, to 9.1 million, by 2030.

CUNY Enrollment Amounts

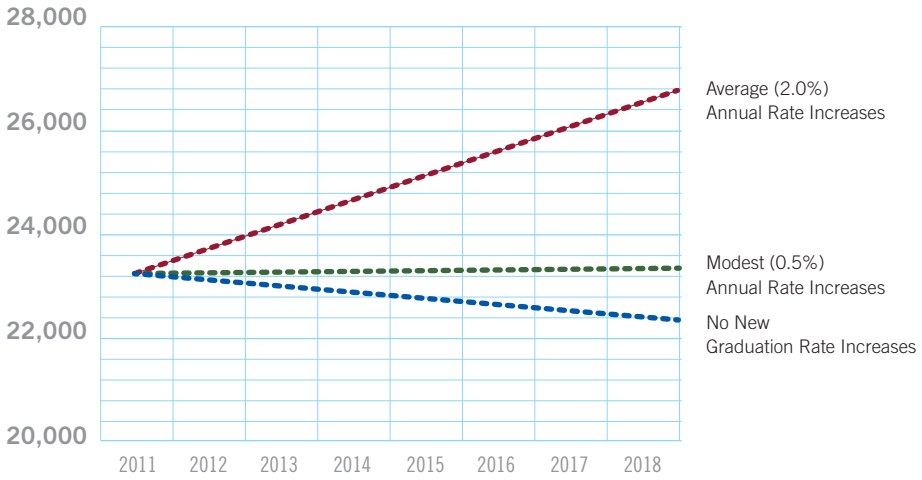
In fall 2011 CUNY reached its highest enrollment to date, with almost 238,000 undergraduate degree students (an increase of 11.5 percent from 2008 when the last Master Plan was submitted). Also in fall

2011, enrollment exceeded 33,000 in the graduate and professional schools, an increase of 6 percent from 2008. In addition, in 2010-2011, the CUNY Continuing Education and Workforce Development programs served more than 200,000 students.

CUNY has always been an educational destination for immigrants and their children. If the following assumptions hold true, the effect on the University will be substantial.

- If projections of continuing immigration into New York City are accurate;
- If projections of increases in New York City's total population are accurate;
- If trends in New York City public high school graduation rates continue;
- If projections of DOE enrollment are accurate;
- If trends in CUNY's share of DOE graduates continues increasing at the same rate; and
- If trends in CUNY's first-time freshman enrollment continue (with no enrollment caps).

Despite Declining DOE Enrollments, CUNY Will Likely See Increased Market Demand.
Projections of CUNY Freshman DOE Graduates under Different Graduation Rate Scenarios



Note: estimated numbers of graduates enrolling in the fall after graduation, assuming that the share of the DOE college-going population enrolling at CUNY remains the same.
Source: CUNY OIRA and DOE

Considering these trends, by fall 2018, DOE graduates could represent more than 85 percent of first-time freshmen entering CUNY, composing an estimated 38,500 of the nearly 44,000 first-time freshmen (up from 26,400 of a total of about 37,000 first-time freshmen in 2011).

CUNY Students: Current Demographics

Fall 2011 data show that CUNY undergraduates are more likely to be female (58 percent) than male, as are the students in the graduate and professional colleges (66 percent), and that the mean age of the undergraduates is 24, although 28 percent are 25 or older. Approximately 41 percent of CUNY under-

graduates at this time were born outside of the U.S. mainland and they speak 193 different languages. Also, in fall 2011, 26 percent of CUNY undergraduates were white, 29 percent were Hispanic, 27 percent were black, and 18 percent were Asian. At the graduate level the students are more likely to be white (57 percent in fall 2011) with 14 percent Hispanic, 15 percent black, and 13 percent Asian/Pacific Islander.

A student profile from fall 2011 shows that 65 percent and 53 percent of students in the community and senior colleges, respectively, received Pell Grants, and thus were from extremely challenging financial backgrounds. Also, in fall 2011, 44 percent of CUNY undergraduates were first-generation college students, 14 percent were married, 14 percent were supporting children, and 32 percent worked for more than 20 hours a week. Approximately 35 percent of undergraduates attended part time in fall 2011, 10 percent more at the community colleges than at the senior colleges. The majority of students in the Graduate School, the School of Journalism, and all of the students in the Law School attend full time. In the School of Professional Studies, more students attend part time.

CUNY Students: Demographic Projections

A few trends are helpful in predicting who CUNY students will be in 2016. The number of DOE graduates from each graduating cohort has increased nearly 40 percent between 2002 and 2010. Hispanic students saw the greatest increase in the number of DOE graduates: 63 percent (from 10,580 in the 2002 graduating cohort to 17,291 in the 2010 graduating cohort). Black students had the next largest increase: 45 percent (from 11,012 to 15,928). The number of Asian graduates increased 32 percent (from 7,082 to 9,342). White students saw the smallest increase: 1.6 percent (from 7,776 to 7,901).

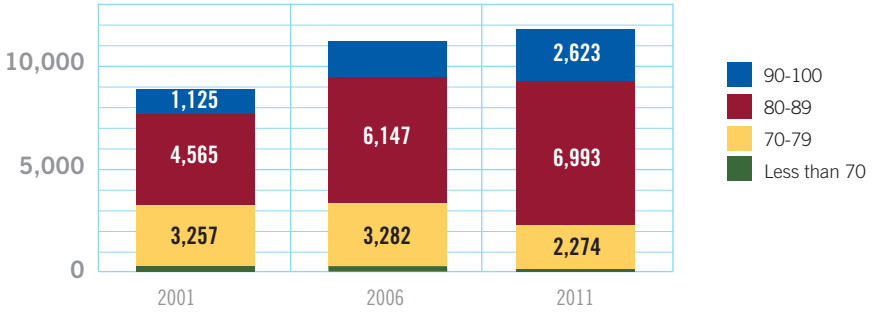
CUNY's student body is also becoming more traditional in a number of ways.

- The percentage of first-time freshmen entering CUNY with a GED as compared to a traditional high school diploma has been declining, from 11 percent in fall 2001 to 5 percent in fall 2010.
- The percentage of students working more than 20 hours per week for pay has also declined, from 44 percent in 2002 to 32 percent in 2010.
- The percentage of students 25 years old and older has dropped from 37 percent in 2002 to 28 percent in 2010.
- The share of first-time freshmen entering CUNY without a delay after high school graduation has been increasing, from 73 percent in 2002 to 89 percent in 2010.
- A smaller portion of the student body is attending part time: 38 percent in 2002 compared to 34 percent in 2010.
- The percentage of new CUNY students who enter as first-time freshmen (versus transfers) has been increasing: 61 percent in fall 2002 compared to 65 percent in fall 2010.

Finally, the University is admitting greater numbers of both well-prepared and underprepared students at the same time. For example, mean SAT scores of regularly admitted first-time freshmen enrolled in baccalaureate programs have risen 42 points between 2008 and 2011. On the other hand, at the com-

munity colleges, 83 percent of all first-time freshmen entering in fall 2011 demonstrated some remedial need, and 19 percent exhibited remedial need in three subjects—significant increases from previous years that are only partially explained by increases in the remedial cutoff scores for mathematics.

Senior Colleges Are Serving More of the Best-Prepared Students.
Trends in Freshman Baccalaureate Enrollment by CAA Band*



* Counts estimated based on poulation whose CAA is known Source: CUNY OIRA

Together all of this information predicts that, as compared to current CUNY undergraduates, by the end of the period of the Master Plan, 2016, a higher proportion of CUNY undergraduates will be of color, will be traditional as compared to nontraditional students, and will have excellent qualifications for college. Although the proportion of students who need remediation is also growing, this Master Plan will detail several initiatives with the DOE designed to curtail that growth and, in fact, decrease the percentage of such students by 2016.

THE MISSION PART ONE:
The University will continue to maintain and expand its commitment to academic excellence.

Consonant with the University's statutory mission "to maintain and expand its commitment to academic excellence," this section of the plan outlines hallmarks of an outstanding 21st-century education and how the University envisions securing such achievement. Principal components include a focus on full-time faculty from diverse backgrounds; a commitment to providing the best opportunities for New York's students to meet and exceed their academic potential, including at the University's flagship Macaulay Honors College; an enduring commitment to improving outcomes in undergraduate education; a dedication to the ongoing mission of the Decade of Science; an insistence on a culture of evidence and assessment; a watchful eye on needs for and growth of academic programs; a reliance on a robust library system; and a determination to pursue the potential and promise of academic technology.

Ensuring the Presence and Cultivation of a World-Class Faculty

CUNY is privileged to have attracted a cadre of prize-winning faculty who are leaders in their disciplines and bring experience and creativity to the classroom. Part-time faculty can bring essential outside experience, new ideas, and an applied approach to learning. However, studies suggest that over-reliance on these instructors can decrease the quality of education for some students and particularly disadvantage those students who are less prepared for college.[1] Studies have shown that increasing exposure to full-time faculty has a positive impact on retention, especially first-year retention and that, in particular, students appear to be negatively affected when gatekeeper courses are taught by part-time faculty other than those such as graduate fellows.[2] Furthermore, investing in full-time faculty seems to be a cost-effective way of enhancing student success.[3] Full-time faculty are more available outside of the classroom and have more interaction with their students. They are more involved in curriculum development and in the life of the college, all of which strengthen the scholarly excellence they bring to the classroom as well as to students' overall educational experience.

[1] Benjamin, Ernst. How Over-Reliance on Contingent Appointments Diminishes Faculty Involvement in Student Learning. Peer Review, 5(1): 4-10.

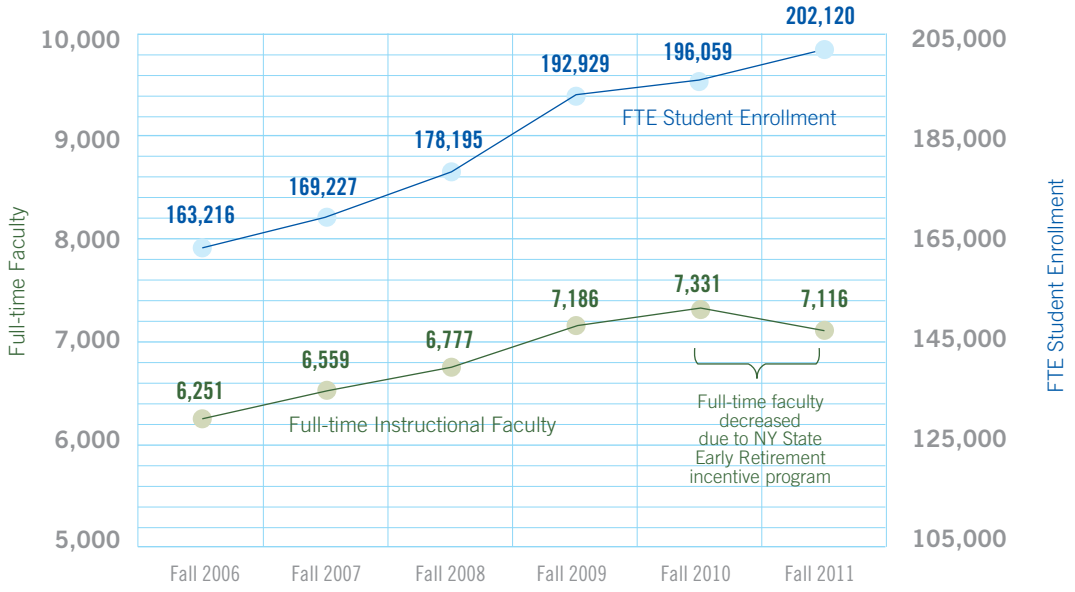
[2] Eagan, M. Kevin Jr. and Jaeger, Audrey J. Closing the Gate: Part-Time Faculty Instruction in Gatekeeper Courses and First Year Persistence. California Community College Collaborative (C4), UC Riverside, 2008.

[3] Harris, Douglas N. and Goldrick-Rab, Sara. The (Un)Productivity of American Higher Education: From "Cost Disease" to Cost Effectiveness. Working Paper Series, La Follette School Working Paper No. 2010-023.

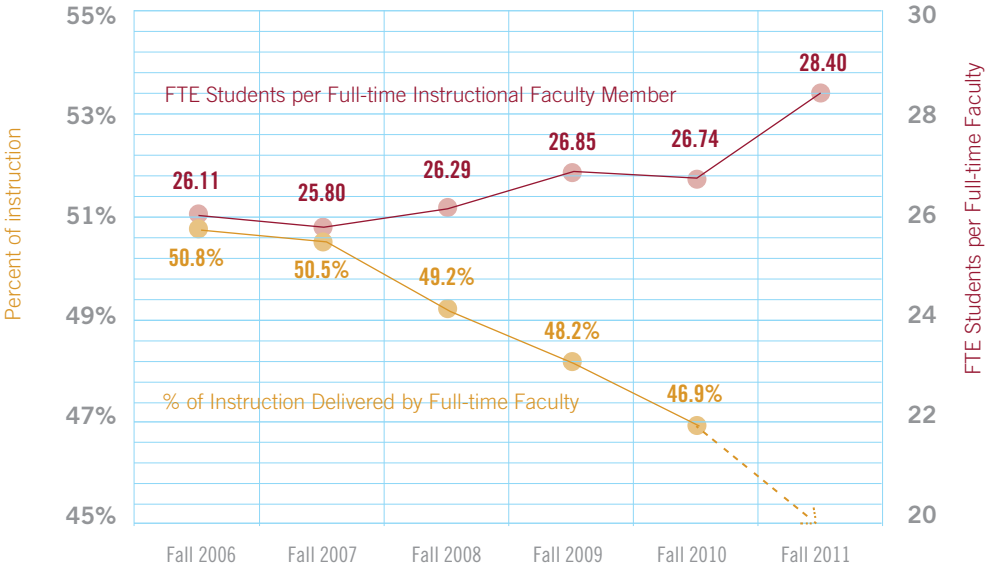
No university can achieve true excellence without a significant core of full-time faculty. Therefore CUNY continues to prioritize the hiring of more full-time faculty. Perhaps the greatest challenge confronting the University at this time is the need to reverse the erosion of staffing levels suffered during the last two decades of the 20th century. The number of full-time faculty slipped from 11,000 in 1975 to just under 5,600 by 1999. Despite difficult economic times, CUNY has worked hard to increase these numbers. The University now has over 7,100 full-time faculty, about 340 more than in 2008 when the last Master Plan was submitted.

However, despite this progress, CUNY faces a double challenge in striving to reach its goal of having 70 percent of instruction offered by full-time faculty members. Notwithstanding the hundreds of new faculty hired in recent years (increasing the total number of full-time faculty 13 percent from fall 2006 to fall 2010), student enrollment growth has outstripped faculty hiring, with student full-time equivalents (FTEs)—a measure of how many students are in the classroom—increasing 20 percent during the same period.

Student Full-Time Equivalent Enrollment & Full-Time Instructional Faculty
Fall 2006 - Fall 2011



Student: Full-Time Faculty Ratio & Percentage of Instruction Delivered by Full-Time Faculty
Fall 2006 - Fall 2011



Since 2006, student enrollment has grown at a faster pace than full-time faculty. Consequently, the ratio of full-time equivalent students to full-time faculty has increased, and the percentage of instruction delivered by full-time faculty has decreased. The 3 percent increase in studentenrollment from Fall 2010 to Fall 2011 combined with the 3 percent decrease in full-time instructional faculty due to the July 2010 New York State early retirement incentive program amplified this general trend. Regaining the ground lost over the last four years is a critical priority for the next four years.

Further, the difficulty in ensuring sufficient full-time faculty for CUNY students will be challenged even more severely by the large number of expected faculty departures in the next few years—despite many hundreds of new faculty having been recently hired, 20 percent of CUNY faculty are currently over the age of 65. In fall 2011 alone, 275 full-time, long-term faculty members retired as a result of the University's Early Retirement Incentive Program. To address the concern that many more faculty may suddenly retire, the Office of Academic Affairs is collaborating with the Office of Human Resources Management, the Office of Labor Relations, and the Office of the General Counsel to establish a phased retirement plan that will ease the transition to retirement for faculty, while enabling departments and colleges to anticipate vacancies and plan ahead for replacement. This speaks to a concern expressed by one college to develop "a flexible/phased retirement option that would support faculty and staff in their transition to full retirement over a defined period."

In sum, as the number of CUNY students has grown over the past five years, so has the number of faculty, but not enough even to maintain the admittedly low percentage of instruction currently taught by full-time faculty. Consequently, the aspirational 70/30 full-time/part-time faculty ratio appears increasingly elusive. Recent trends suggest a further decrease in the percentage of instruction delivered by full-time faculty. This prediction follows from the fact that FTE enrollments increased by 3 percent from fall 2010 to fall 2011 while the number of full-time faculty decreased by 2 percent. To regain all of

the ground lost in just in the last four years would require about 5 percent full-time faculty growth over and above student enrollment growth for the next four years (e.g., 7 percent full-time faculty growth with 2 percent enrollment growth or 5 percent faculty growth with no enrollment growth).

Clearly, to reverse the rising student-to-full-time faculty ratio, CUNY must hire full-time faculty at a higher rate than it grows enrollment. The 2012-2013 budget request calls for 440 additional positions for next year alone, many of these to support CUNY's "cluster hiring," especially in areas related to the Decade of Science, and to enhance other programs that are poised for national prominence.

The CUNY Board of Trustees resolution adopting the 2012-2013 budget request noted that faculty renewal requires major investment each year because CUNY's student population continues to grow. It stated that, "CUNY has created hundreds of new faculty positions over the last few years, but still finds itself unable to keep up with the pace of enrollment growth." This is a battle that CUNY cannot lose; faculty hiring will thus be a top priority for use of expected investment funds during the period covered by this Master Plan.

Cultivating Faculty Diversity

The City University of New York has long been recognized as one of the most diverse university systems in the nation. The University aims to enhance this reputation by continuing to build a diverse community that enriches the University's academic environment.

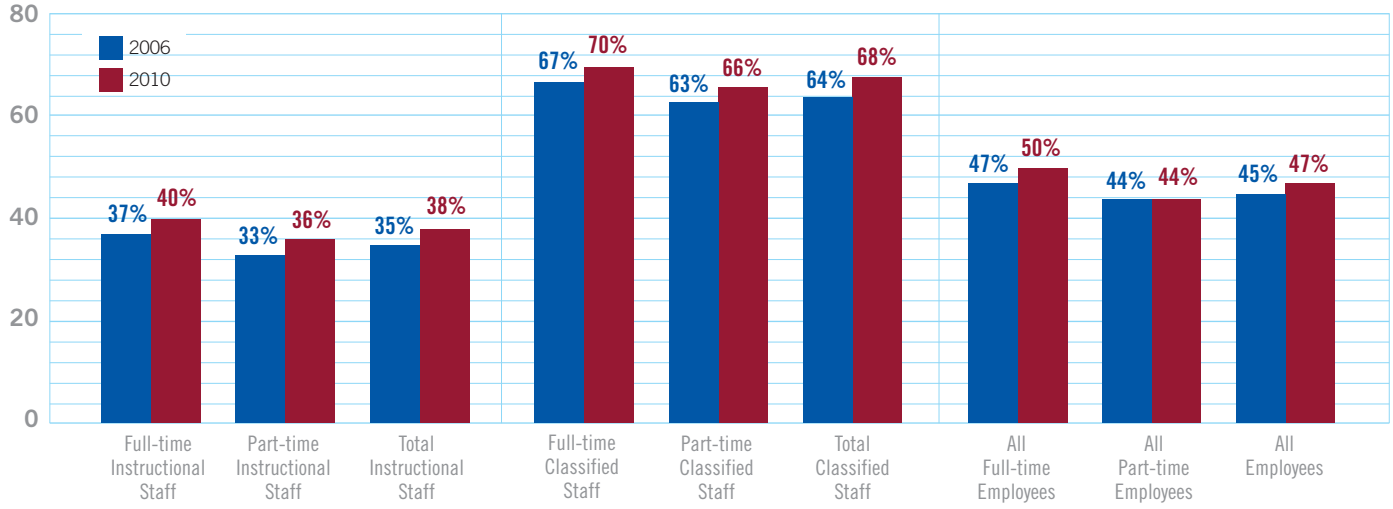
The University's unwavering commitment to serving students, its insistence on academic rigor, and its support of world-class faculty guide its work to foster and promote an evermore diverse community of students, faculty, and staff. This pluralistic community is fundamental to the exchange of ideas and knowledge, scholarly discourse, and the engagement of the University's constituencies.

The University respects individuals while acknowledging the differences among them. These differences include, but are not limited to, race, national origin, ethnicity, religion, age, gender, sexual orientation, gender identity, disability, and socioeconomic status. However, to create a vibrant academic, intellectual, and cultural environment for all, the University must move beyond representation to genuine participation. Thus, the University seeks to develop a community that is inclusive of all individuals and groups. Given CUNY's long history of proactive support for diversity and inclusion, it is uniquely positioned to build upon that strong foundation and serve as a national leader and model, exemplifying the benefits that accrue when diversity and inclusion are integral components of an institution's educational philosophy and core mission.

The ongoing efforts to restore the full-time faculty, and the anticipated retirement of large numbers of full-time faculty afford an excellent opportunity to increase the diversity of the University's faculty through proactive recruitment and hiring practices. A diverse faculty promotes intellectual vibrancy and enhances the teaching/learning experience. A representative workforce also fosters a climate of inclusion that has a positive impact on student retention. Although the diversity of CUNY's faculty has increased in recent years, CUNY faculty could benefit from additional diversification.

Diversity

Percentage of Employees in Federal Protected Groups
2006-2010



Source: CUNY Office of Human Resources Management

Several of the colleges have described their own plans to increase faculty diversity during the period of this Master Plan. City College is just one example "[City] College will create a Council on Inclusion and Excellence which will recommend strategies and approaches to ensure diversity in departments as well as in departmental and executive committees."

In spring 2011, the University conducted a faculty diversity study to examine the effectiveness of its faculty recruitment and diversity activities over the past 10 years. This study also assessed the experiences of underrepresented groups and attempted to identify the best recruitment and retention practices at CUNY and at peer institutions. The goals of the study were to develop a framework for improving the representation and experience of women and minorities, and to strengthen the climate for diversity and inclusion across the University.

The Diversity Study Steering Committee (DSSC), appointed by Chancellor Goldstein, was responsible for overseeing the study and making recommendations to enhance the University's diversity and compliance activities. The recommendations address policies and practices that will increase the recruitment and retention of underrepresented groups and make the climate more welcoming for all faculty members. An ad hoc committee on strengthening diversity was subsequently established by Chancellor Goldstein to develop an action plan based on the study.

During the years of the Master Plan 2012-2016, the University will engage in two core activities emerging from the diversity study.

- **Implementation of the "University Diversity Action Plan":** The "Diversity Action Plan" focuses on the areas of: leadership and accountability, recruitment, and climate and retention. This plan is designed to promote innovative recruitment and inclusion initiatives and programs; to foster a positive climate that supports faculty members and encourages them to thrive; and to ensure that Uni-

versity structures, policies, and practices support accountability for achieving relevant goals. It provides a number of recommendations that the University is committed to effecting during the period of this Master Plan. These recommendations include, but are not limited to: making diversity goals—and the strategies to reach them—specific targets of the annual Performance Management Process (PMP), assessing the need to provide supplemental resources to help the campuses achieve their diversity goals, and having college presidents ensure that campus diversity officers meet with search chairs early in the search process to develop plans for recruitment activities.

- **Diversity Conference:** The Office of Recruitment and Diversity will organize a biannual University Diversity Conference beginning in fall 2012. The conference will focus on faculty and staff issues and provide a significant forum for discussion, dialogue, and exchange of information on a range of critically important themes related to diversity and inclusion. This biannual conference will present an opportunity for faculty and staff to share ideas, learn about effective practices, and broaden their knowledge of diversity related topics.

In addition, CUNY will continue to promote faculty diversity through the following initiatives.

- **The CUNY Latino Faculty Initiative** performs outreach and recruitment activities to attract outstanding Latina/o candidates in all disciplines and to work with CUNY colleges to connect these candidates to open positions. The project is working to strengthen CUNY's efforts in the following areas: faculty recruitment, faculty retention, the CUNY pipeline, faculty mentoring, support for leadership development, and support for Puerto Rican, Latina/o, Caribbean, and Latin American Studies.
- **The Faculty Fellowship Publications Program (FFPP)** assists full-time, untenured faculty in the design and execution of writing projects essential to progress toward tenure. It provides a discipline-based writing group and the guidance of a senior faculty member. Participants have rated the opportunity to meet and develop professional relationships with colleagues from across the University as the program's most enduring benefit.
- **The Diversity Projects Development Fund** supports scholarly research projects, other educational and professional activities, and creative endeavors that promote diversity, affirmative action, multiculturalism, and nondiscrimination. These competitive micro-grants of up to $5,000, available to faculty and staff, allow the University to provide incentives to fund campus initiatives.

These activities help CUNY maintain and enhance its standing as a diversity leader among large, public university systems and allow the University to further benefit from the region's, and the nation's, diverse talent pool.

Undergraduate Honors Programs, Including Macaulay Honors College

If faculty constitute one key community within a university, students rest at the heart of another. As described previously, more top students than ever are choosing CUNY senior colleges. In fall 2011, the University accepted over 20,200 applicants with a high school GPA of 85 or above, 8 percent more than in fall 2010, and 105 percent more than in fall 2002.

The University has responded strongly and successfully to provide an excellent education for the increasing numbers of academically talented students. All senior and community colleges offer challenging courses and programs, including honors programs, for students who are well prepared for college. The very best baccalaureate applicants may seek admission into the Macaulay Honors College, CUNY's flagship program in honors education.

Established in 2001, the Honors College has evolved from an innovative concept to a nationally recognized beacon of excellence in public higher education. A generous gift from Linda and William Macaulay—he is a 1966 Honors graduate of City College—permitted the Honors College to purchase and renovate a landmark building on West 67th Street. In honor of this gift, the College was renamed William E. Macaulay Honors College at the City University of New York.

Designed by a committee of faculty and administrators from the system's senior colleges, Macaulay exemplifies the advancement of excellence in the integrated university. Students have a home campus (currently Baruch, Brooklyn, City, Hunter, Lehman, or Queens Colleges, or the College of Staten Island), but can enroll in classes at all of CUNY's colleges and programs, including at the Graduate Center.

Applications to Macaulay continue to increase: from the 3,828 freshman applications that the college received for fall 2008, to the 4,077 applications that the college received for fall 2011. In addition, more of the college's admitted students are choosing to matriculate. In fact, in fall 2011, about 50 more students accepted the offer of admission than the college expected. The academic credentials of Macaulay applicants also continue to impress, with mean SAT scores of admitted students rising from 1,288 in 2005 to 1,369 in 2011.

Similar to its sibling colleges at CUNY, Macaulay plans strategically for its own future while remaining a committed citizen of the integrated University. Unfortunately, the present Master Plan cannot detail every college's specific vision for its honors programs. Highlighting certain aspects of Macaulay's priorities and intentions through 2015 will serve as an example of all of the colleges' honors programs:

- Modifying the curriculum to increase its effectiveness and aligning Macaulay courses with the University's Pathways to Degree Completion Initiative, which provides a university-wide framework for general education.
- Providing additional research opportunities to students through the expansion of the Macaulay Research Matching Program.
- Collaborating more closely with other CUNY colleges to recruit the faculty who teach the four seminars that compose Macaulay's core curriculum.
- Increasing student diversity through an enrollment plan for underrepresented minority students and other activities.
- Improving student services, including advising and registration.

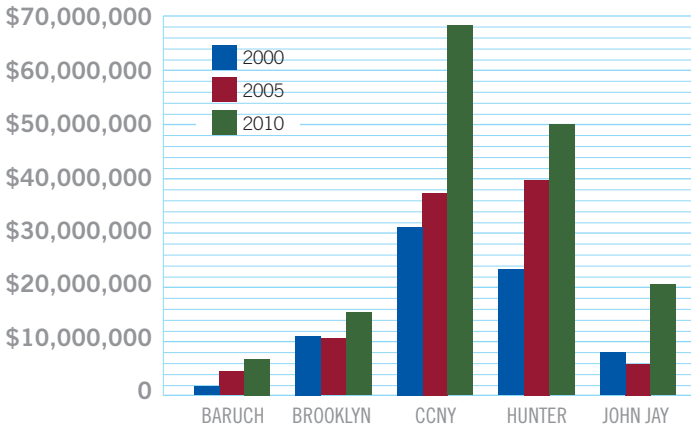
Excellence in Undergraduate Education

CUNY's future achievement will rely significantly on the ongoing efforts of the 19 undergraduate campuses to improve student outcomes for all students. Research on student success has identified promising practices aimed at improving course completion, as well as retention and graduation rates. CUNY is committed to promoting high-impact, evidence-based educational practices and policies across the continuum of a student's experience, including pre-enrollment services, acceleration through remediation, first-year programming, intensive engagement in general education and the major, and maintaining momentum through graduation. Only an ambitious and well-integrated set of approaches can significantly improve retention and graduation rates.

For example, the quality of the first-year experience is critical to improving first-to-second year retention rates. All CUNY campuses have implemented some combination of evidence-based practices in the first year, such as cohort-based learning communities, freshman seminars focusing on college success strategies, early-warning systems, and supplemental instruction, particularly for courses with high failure rates. The challenge is to sustain the learning gains demonstrated through high-quality first-year experiences, which can dissipate after the second year. High-impact practices must span the entire student experience, across levels and across the curriculum.

A growing body of literature supports the strategy of integrating services across academic affairs, student affairs, and enrollment management—with student engagement at the center. Central to this strategy is designing engagement, enrichment, and support services linked to the classroom or other natural points of contact. CUNY campuses are implementing and evaluating a wide range of integrated services, including experiential learning such as internships and field work, service learning and community-based projects, and academic support services such as supplemental instruction and tutors embedded in targeted courses. Academic support services in particular will be an area of University-wide focus over the coming years, for example, by bringing together directors of learning centers to identify and expand best practices related to the training and professional development of peer tutors.

Total External Research Awards at CUNY Colleges, 2000–2010



Source: CUNY Research

CUNY is well positioned to contribute significantly to the literature of student engagement and success, and will support efforts to evaluate programs and services with the aim of bringing to scale those that demonstrate the capacity to improve student outcomes. This includes an ongoing commitment to faculty development, and to providing opportunities for sustained collaboration, inquiry, and experimentation aimed at improving teaching and learning. Through CUNY's fourteen Centers for Teaching

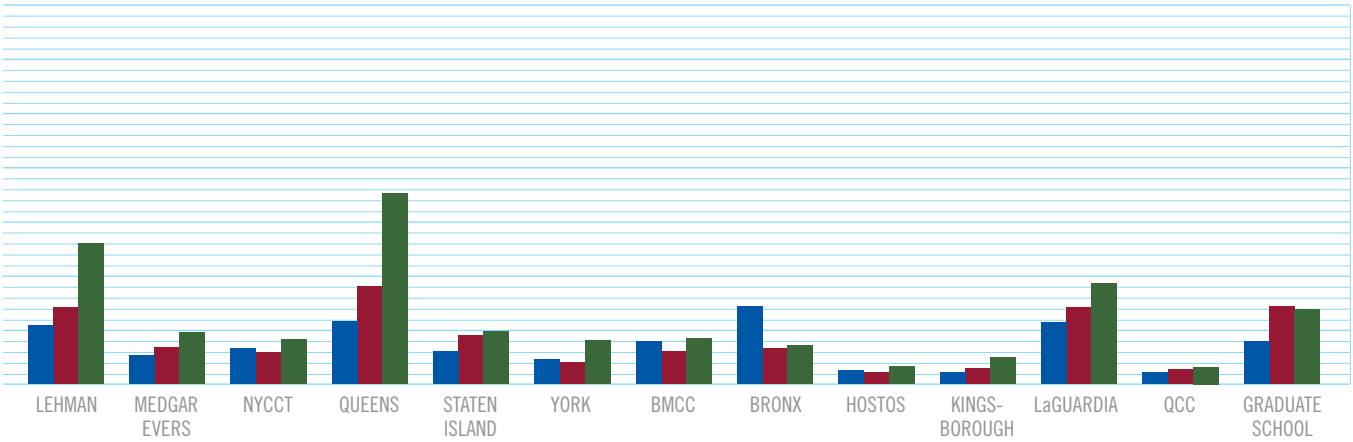
and Learning, and the many faculty development initiatives offered through departments across the campuses, CUNY is committed to promoting pedagogical excellence and innovation.

The Decade of Science

There are many specific areas in which faculty expertise, student learning, and University investment converge in the pursuit of excellence. One of the most notable is the University's Decade of Science initiative.

The importance of enhancing study in the areas of science, technology, engineering, and mathematics (known as the STEM fields) was apparent when CUNY prepared its previous Master Plan, which prominently featured the University's Decade of Science initiative (2005-2015). The national call for attention to these subjects has grown still louder in the years since then. CUNY has made much progress in this area since the 2008-2012 Master Plan was submitted and will achieve still more in the next four years.

All of the efforts mentioned here exemplify CUNY's commitment to creating a first-class research environment in order to educate the next generation of scientists and engineers, and to attract and retain research faculty of national prominence. The Decade of Science also broadens the University's rich tradition of research, fostering discoveries that benefit society and enhance economic development in the city and state. CUNY will continue to leverage the strength of the University to encourage cutting-edge research throughout the colleges by upgrading laboratories across the campuses, intensifying faculty recruitment efforts, and building or modernizing facilities.



Advanced Science Research Center

Perhaps the most visible manifestations of the University's investment in the Decade of Science are the construction of new science facilities and the renovations of existing ones on eight campuses. Central to this effort has been the planning and construction of the CUNY Advanced Science Research Center (ASRC), a shared facility that will foster the development of a University-wide integrated research network.

The Advanced Science Research Center will be operational in 2014, and plans for staffing and outfitting the ASRC are accelerating. During the next few years, the University will recruit and hire distin-

Artist's Rendering of the CUNY Advanced Science Research Center (ASRC)

guished faculty who will serve as directors in each of the key research areas: photonics, nanoscience, structural biology, neuroscience, and environmental science. A small cadre of additional research faculty will be recruited and housed at the ASRC. In addition, core facilities directors, technicians, and dedicated administrative staff will help operate the equipment and conduct the operations of the center. High-end core facilities and instrumentation will allow scientists from across CUNY to expand the scope and scale of their research. The ASRC will also facilitate the development of integrated research collaborations both within CUNY and between CUNY and peer institutions across New York State, and nationally.

CUNY Interdisciplinary High-Performance Computing Center

In support of the Chancellor's Decade of Science Initiative, the CUNY Interdisciplinary High Performance Computing Center (IHPCC) was established in 2007 to provide CUNY researchers, faculty, and students with cost effective, state-of-the art high performance computing facilities as an integrated university resource. The creation of this center is consistent with NSF reports concerning the optimal directions for campus cyber infrastructure. For example, the national President's Information Technology Advisory Committee's (PITAC) report titled "Computational Science: Ensuring America's Competitiveness; June 2005," stated that "Computational science—the use of advanced computing capabilities to understand and solve complex problems—has become critical to scientific leadership, economic competitiveness, and national security." "The PITAC believes that computational science is

one of the most important technical fields of the 21st century because it is essential to advances throughout society."

The IHPCC's activities and capabilities continue to expand rapidly as its resources are integrated into research and courses across CUNY. With external funding, the computational capability has increased by more than a factor of 10 since the Center was initially established. Those resources are now oversubscribed. To accommodate the ever-expanding growth in usage, the computational capability of the Center will be doubled by September 2012—a twentyfold increase in the past four years. We expect user requirements and the computational capability to expand again by a factor of 20 in the next four years as the Advanced Science Research Center and the Center for Urban Science and Progress develop. The IHPCC currently supports approximately 400 active researchers. This number is expected to increase to more than 1,200 by the end of the four-year planning cycle in 2016 when the IHPCC is relocated to the new Interdisciplinary High Performance Computing Building at the College of Staten Island.

Contemporary computational research requirements in "Big Data" are driving a need for enhanced data storage, retrieval, dissemination, and archiving. This was clearly illustrated by the March 29, 2012, White House announcement of a $200 million, multi-agency investment in the "Big Data Research and Development Initiative." In recognition of "Big Data" needs, CSI, in a coordinated effort by the IHPCC with researchers from CCNY, Hunter, Baruch, and the Graduate Center, was awarded $1.3 million from NSF for a multi-petabyte data storage facility, which is scheduled for installation at the IHPCC in 2012 and 2013. This facility will support researchers across CUNY in Environmental Sciences, Macromolecular Assemblies, Economics, Transportation Systems, Urban Analytics, Neuroscience, Phylogenetics, and other interdisciplinary research projects. We expect that the CUNY "Big Data" research requirements for data storage will increase by a factor of ten by the end of 2016.

The ASRC as well as CUNY research centers with "Big Data" requirements, particularly those in the Environmental Sciences, Economics, and Phylogenetics, require fast, high-capacity data transfer speeds between research equipment and the IHPCC for data storage and computational analysis. To accomplish this, CSI will spearhead collaboration through the IHPCC with CCNY and CUNY CIS, to establish a dedicated "Big Data" network prototype for optimal flow of scientific data, what is essentially a "Science DMZ." This is a term coined by the Department of Energy for its ESnet, a concept that has since been adopted by NSF. The Science DMZ essentially removes large, bulk research data transfers from campus networks (thus relieving the burden on those networks) and puts them on point-to-point, dedicated, secure networks, optimized for high-speed flow of bulk data. The IHPCC will implement a Science DMZ for "Big Data" to support the ASRC and other CUNY research centers in this proposed Master Plan.

In addition to the fast-paced research agenda, the IHPCC supports classes given at the Graduate Center, the College of Staten Island, Medgar Evers College, NYCCT, and Brooklyn College. We expect that the number of classes supported will grow substantially, and that every institution in the University will use the IHPCC in classes by the end of the next four years.

STEM Faculty

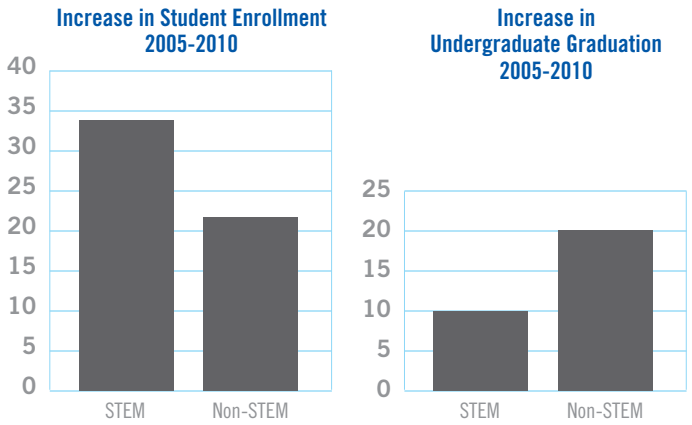
A corresponding effort to strengthen areas relevant to the ASRC is under way at the colleges, with the aim of fostering and integrating collaborative efforts. CUNY will continue to pursue a science cluster faculty hiring initiative, recruiting about 20 top-level research faculty at a rate of about five per year over the next four years, in selected STEM areas. Added to the current cadre of talented faculty, these individuals will inspire and energize students and play an equally essential role in forging the relationships that fortify the ties with industry and promote entrepreneurial activity.

Educating the Next Generation of STEM Students

As one recent report stated, "[O]ur education system is not producing enough STEM capable students to keep up with demand both in traditional STEM occupations and other sectors across the economy that demand similar competencies."[4]

One reason for this insufficient productivity is that too few STEM-interested high school students have the necessary foundational skills to succeed in college-level STEM disciplines. Not surprisingly, then, many who do enroll in STEM majors in college ultimately switch to non-STEM majors. Given the growing demand for STEM graduates, CUNY will continue to advocate for increased high school student participation and proficiency in the STEM disciplines. This includes working with the New York City Department of Education to ignite interest in these fields—for example, through its partnership on the New York City Science and Engineering Fair—as well as helping to define and communicate clear curricular pathways at the K-12 level to ensure student preparation (see also the section on Graduate NYC! in "The Mission Part Three").

Student Engagement in STEM Disciplines



CUNY is deeply committed to increasing both the number of students who enroll in STEM disciplines at CUNY and the number who graduate with STEM degrees. One way to meet this longstanding commitment is to involve students in research projects, especially at the undergraduate level, to enable

[4] Carnevale, Anthony P., Nicole Smith and Michelle Melton. STEM: Science Technology, engineering, Mathematics. Georgetown University, Center on Education and the Workforce, 2011.

them to make connections between the research process and classroom teaching. The CUNY University Faculty Senate recommends engaging students in research as early as the sophomore year, which is considered a high-impact practice by the Association of American Colleges and Universities (www.aacu.org/leap), shown to increase retention and graduation rates.

Fortunately, the colleges have many research opportunities for undergraduates, and these are increasing. Several college-based programs at the colleges are designed to increase the numbers of students from underrepresented groups who choose STEM careers. These include the Collegiate Science and Technology Entry Program, a New York State Education Department (NYSED) program on most of the senior and community college campuses; the Louis Stokes Alliance for Minority Participation, an NSF program on every undergraduate campus; and Minority Access to Research Careers, a NIH program at many of the senior colleges. Other undergraduate research experiences are available through: Research Experiences for Undergraduates, an NSF Program at Baruch and Queensborough; the Robert Noyce Scholarship Program, an NSF program at Lehman; the Quantitative Biology Project, an NIH program at Hunter; Broadening Participation in Computing, an NSF project at Brooklyn; Bridges to the Baccalaureate, an NIH program at LaGuardia, Medgar Evers, and Queensborough; and a host of others. Many of the colleges also involve undergraduates in research through their centers and institutes and with individual faculty—John Jay College's Program for Research Initiatives for Science Majors (PRISM) is one example.

CUNY has also taken a systemwide approach to involving undergraduates in research. CUNY supports a Summer Undergraduate Research Program to provide a cohort of undergraduates with the opportunity to participate in research with CUNY faculty. A three-year grant received during the summer of 2011 will allow the continuation of this program. Approximately 20 undergraduates a year participate in the CUNY program, and many of the colleges also have summer programs. At York College, for example, funding from the United States Department of Education Predominantly Black Institutions program has provided summer research opportunities for 25 undergraduates each year since 2010.

CUNY is also collaborating with the Council on Undergraduate Research (CUR), which has selected the University to participate in an NSF-funded program on Institutionalizing Undergraduate Research for State Systems and Consortia. Teams composed of senior college faculty and administrators from STEM fields will participate in an intensive workshop scheduled for this spring in which they will create a roadmap for accomplishing CUNY's long-term goals for institutionalizing undergraduate research.

Additional efforts to enhance and encourage undergraduate research experiences include:

- A centralized portal, scheduled to launch in 2013, for all undergraduate research programs operating across the University; this resource is expected to broaden participation, disseminate and standardize best practices, and assist in applications for external funding.
- Continuation of the CUNY Nobel Science Challenge, a systemwide competition that invites undergraduates to write essays focused on the scientific concepts behind the work of each year's Nobel prize-winning work.

- Sustained initiatives to increase participation in STEM of those from underrepresented groups, including women. These initiatives have included and will continue to feature large-scale events, such as the annual Inspiring Women Scientists forum, as well as small, targeted roundtables and workshops.

Research strength also relies on supporting a steady stream of motivated and talented doctoral students. Thus, CUNY will continue to develop the means for recruiting and supporting well-qualified graduate students in science areas that support the challenges of the 21st century.

A Culture of Evidence and Assessment

As indicated repeatedly in this plan, the University's efforts to maintain academic excellence are reflected in its concern for evidence-based practices and its interest in metrics that indicate specific aspects of student achievement and success. CUNY will take additional steps during the next four years to assess specific learning gains and other indicators of student achievement. As in recent years, CUNY will use relevant data where it is available, and where it is not, will seek to generate the needed data. CUNY has invested heavily in the data resources needed to accomplish these goals, and during the next four years it will build on this infrastructure to continue to nurture the culture of evidence for which the University has already achieved national recognition. At CUNY, assessment is an enterprise shared by the colleges and the central office. One example is the systemwide administration of surveys designed to generate data useful for assessment. Over the past four years, CUNY has fielded the Collaborative on Careers in Higher Education (COACHE) surveys of untenured and tenured faculty in order to evaluate faculty perceptions of working conditions; the National Survey of Student Engagement (NSSE) and a companion survey—the Faculty Survey of Student Engagement (FSSE)—to assess the engagement of students with academic and social life; and several surveys of student experience, including the Noel Levitz Student Satisfaction Inventory. These surveys provide the colleges with national and system benchmarks, as well as with data that can be combined with the results of local assessment activities. During the next four years, CUNY plans to continue this shared responsibility for assessment.

The Collegiate Learning Assessment (CLA)

Another example concerns CUNY's assessment of the general education of its students. For approximately a decade, the University administered the CUNY Proficiency Exam (CPE); students pursuing both associate and baccalaureate degrees were required to pass it as a condition of advancing to upper-division work and of receiving their degrees. This past year, after extensive deliberation, a task force recommended, and the Board of Trustees voted, that CUNY discontinue the use of the CPE. A new task force, composed of administrators and distinguished faculty, was charged to review and recommend an assessment tool that would shift the focus from high-stakes assessment of individual students to institutional assessment of learning gains. After a full, deliberative process, the task force selected the Collegiate Learning Assessment (CLA). The CLA is being used on hundreds of campuses nationally and will permit CUNY to assess learning against other institutions. It addresses the core learning outcomes of: reading, critical thinking, written communication, quantitative literacy, and information literacy.

The task force also developed implementation guidelines relative to sampling, recruitment and participation incentives, testing protocol, communications, and report analysis. In fall 2012, each undergraduate campus will administer the CLA (or its community college equivalent) to a representative sample of at least 100 first-time freshmen. The following spring, the instrument will be given to a sample of 100 seniors. The samples will reflect the full diversity of matriculated students, including remedial and ESL students.

The CLA results will be primarily used as a signaling tool to highlight differences in programs that can lead to improvements in teaching and learning. The task force has recommended that it be utilized as one component of a comprehensive set of assessments that include an appropriate mix of locally designed curriculum-embedded measures and nationally normed or externally derived measures. The CLA is not a comprehensive measure of general education outcomes nor is it intended to evaluate all aspects of institutional effectiveness. What it will do is help CUNY understand patterns and deal with aspects of a CUNY education that may be in need of change. After adopting the CLA, CUNY will also be able to join the Voluntary System of Accountability, an initiative of public four-year universities to supply comparable information on the undergraduate student experience to important constituencies through a common web report—the College Portrait.

The University as a National Model for Generation and Use of Data

Over the past four years, CUNY has forged ties with several prominent research organizations and has become a national laboratory for research on an array of academic initiatives. For example, MDRC, a nationally respected research organization, has conducted assessments of learning communities at Kingsborough Community College and Queensborough Community College, as well as performance-based incentives at several colleges. More recently, MDRC has been applying a rigorous experimental design in its evaluation of the Accelerated Study in Associate Programs (ASAP). CUNY has also made its data resources available to the Community College Research Center, at Columbia Teachers College, to conduct a series of studies (funded by the Bill and Melinda Gates Foundation) concerning placement into and progress through remedial sequences at the community colleges. CUNY's Paul Attewell, Distinguished Professor of Sociology at the Graduate Center, has received Gates funding for a study of remedial instruction in the University's summer immersion programs. The central office has itself funded 10 research projects on remedial and credit-bearing mathematics instruction, all using quasi-experimental designs. Three campuses (Baruch, BMCC, and CCNY), the central office, and the nonprofit organization Ithaka are collaborating in a randomized assignment, experimental design comparing an online with a face-to-face version of introductory statistics.

Over the next four years, CUNY will continue to build the data infrastructure that underpins its capacity for research and data-driven decision making. In a consolidated data warehouse, CUNY integrates the information necessary to track from beginning to end the academic career of every degree-seeking student who has matriculated at a CUNY college. The University is currently remaking its administrative data systems as part of the CUNYfirst project, described in section V of the Master Plan. As part of this project, the University will install business intelligence software that will enhance its access to real-time student data for purposes of assessment and decision support.

In addition to these systemwide assessment initiatives, the colleges maintain a robust program of academic program review. Long-standing CUNY Board policy requires each college to review its programs on a regular cycle, and progress toward this goal is monitored annually in the Performance Management Process (PMP) report. The PMP, established by Chancellor Goldstein over ten years ago, is CUNY's extensive, data informed, annual campus evaluation process involving a rigorous assessment of each campus's qualitative as well as quantitative data against the campus's and the University's annual goals. These goals are derived from the University's Master Plan, and the degree to which a campus meets those goals can have monetary consequences for the campus's employees, including its president. The PMP has been extremely useful in enacting change at the individual campuses that is consistent with the goals of the integrated university, as well as with the goals of the individual campuses. During the period of this master plan the University will continue to refine the measures used by the PMP and will apply the measures to achieve the plan's goals.

Rigorous and Relevant Degree Programs

Perhaps the most obvious advantage of an integrated university may be the range of programs offered and students served. CUNY's size and diversity permit it to offer appropriate educational experiences for students who arrive on campus with everything from minimal to the very best academic preparation. Students can pursue study in a range of disciplines, or interdisciplinary studies, from entry to the most advanced levels.

Looking forward, CUNY expects to continue its coordinated efforts to review both proposed and existing programs to ensure quality, rigor, and currency. Through the leadership of its faculty, the University has created model undergraduate and graduate programs in a number of disciplines. It will continue to work with faculty to monitor changes in disciplines and industries in order to prepare students to fully engage in the 21st-century marketplace of ideas and discoveries.

In the integrated university, individual colleges need not offer all programs; they can focus on niches to strengthen their reputations, or take advantage of local opportunities, or build on the interests of their faculty. At CUNY, the colleges typically establish a total of more than 50 new undergraduate and graduate academic programs a year. In developing these programs the colleges engage in environmental scans with attention to the economy, emerging industries, and degree marketability; local, regional, even national trends such as globalization or sustainability; and, of course, student interest.

Consonant with a culture of evidence and assessment, several colleges have discerned the need to review their existing academic programs for currency. This is consistent with central office concerns to establish curricular profiles for the colleges and create a system of "closing the loop" on academic program reviews.

In 2012 and 2013, as part of the concern for evidence-driven decisions, enrollments of programs that began over the past decade will be compared at the three-year mark with the original proposals' projections, and data from subsequent external academic program review summaries will be integrated into college profiles.

In general, as stated in the introduction to this plan, CUNY undergraduate programs are already well positioned to take advantage of the labor market in the next four years. However, new programs will always be needed as the environment changes.

Master's Degree Programs

Nationwide, master's programs have grown significantly over the past several decades. From 1998-99 to 2008-09, the number of master's degrees awarded nationally increased 49 percent, or by 216,800 master's degrees. CUNY had an increase of 45 percent in master's degrees awarded over the same decade. Going forward, the University will continue to evaluate these advanced degrees carefully, particularly in relation to New York City's needs and opportunities.

At CUNY, as across the country, education and business are the two largest master's degree fields. On the national level, over half of all master's degrees were awarded in these two fields in 2008-09, with each field claiming just over a quarter of the degrees (27 percent in education and 26 percent in business). At CUNY, these two fields together also enroll just over half of the University's master's students (52 percent in 2011), but CUNY's profile differs from the national one in that education enrolls many more students than business. At CUNY, education accounted for 41 percent of all master's students in 2011, with business accounting for only 11 percent, although they enroll roughly equal proportions nationally. Master's programs in business have, however, grown rapidly at CUNY in recent years. Between 1998-99 and 2008-09, CUNY master's degrees awarded in business increased by 106 percent, far outstripping a national increase of 57 percent. Education degrees at CUNY, in contrast, grew more slowly than the national average; nationally, master's degrees in education increased by 51 percent over the period, while they increased by only 28 percent at CUNY.

In the last year, however, the overall number of master's degree students at CUNY has declined. Between spring 2011 and spring 2012, the number of master's students fell 14 percent (1,474 students). The decline was sharpest in teacher education programs. A weak job market for teachers probably accounts for most of the decline, which might also be due to increased competition in this higher education sector. A continued decline in teacher education programs could have a significant overall effect on master's enrollment at CUNY, given that these programs account for two-fifths of all master's enrollments.

Business programs, the other mainstay of CUNY's master's programs, have also experienced an enrollment decline, but a much smaller one than that in education, with enrollments falling 4 percent from spring 2011 to spring 2012. This reflects a national decline in the enrollment of new graduate students in business.[5]

Therefore, during the coming year, CUNY will examine the business and teacher education enrollments in more detail, looking for any continuing trends, identifying the causes of any further enrollment decreases, and determining whether opportunities exist in these areas.

Beyond education and business, CUNY's master's students focus on many other fields. Public administration and social service professions rank not far behind business in enrollment and have grown slightly

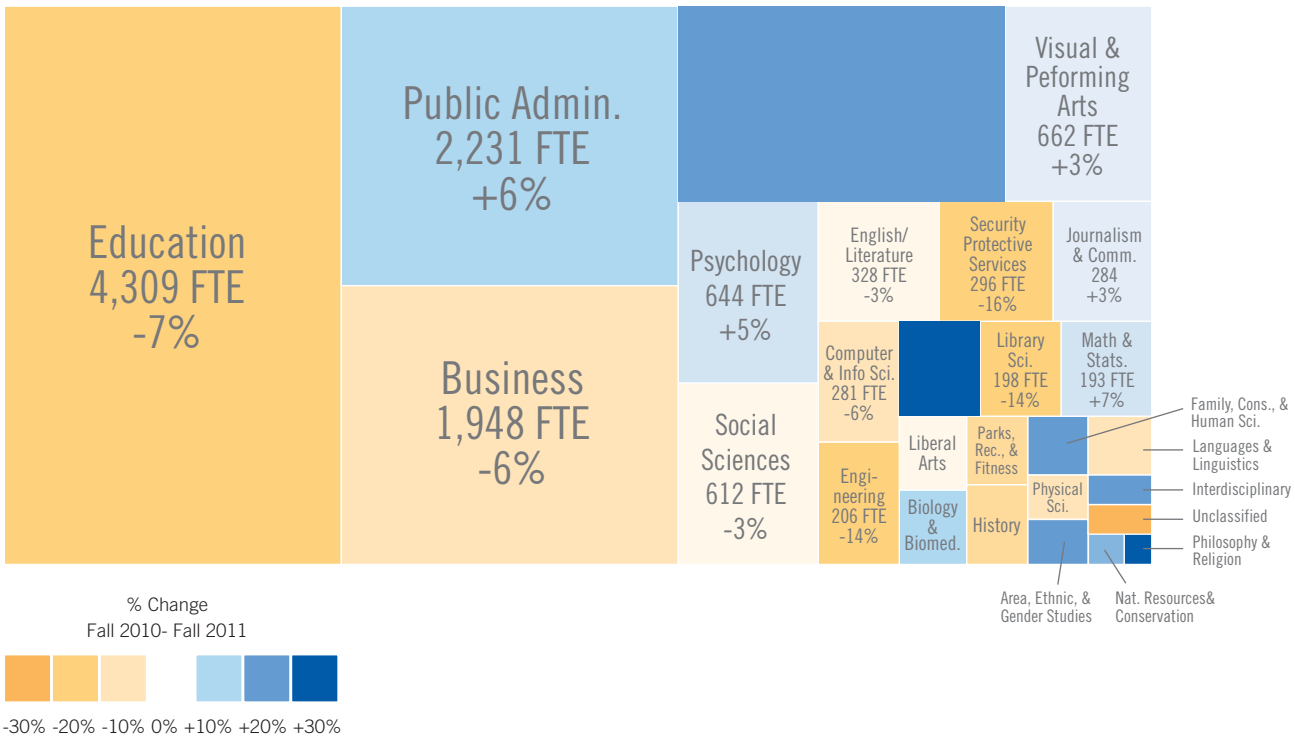
[5] Lewin, Tamar. "New Enrollment Dips a Bit at U.S. Graduate Schools," New York Times, September 22, 2011.

in the past year. The health professions rank fourth in master's program enrollments at CUNY and continue to grow rapidly, with an 8 percent enrollment increase from spring 2011 to spring 2012. If national trends hold steady, master's degree enrollment in the health professions is likely to continue to be robust. With New York City's many hospitals and public health needs, the health professions remain a prime area for growth and investment.

Among liberal arts fields, psychology master's program enrollments are the largest, posting only a small decline in the past year. Nationally, as at CUNY, enrollment in psychology is strong at every level, from baccalaureate to master's to doctoral programs. Master's programs in psychology play a bridging role between baccalaureate and doctoral programs but also function as a gateway to employment in many different social service and related occupations. At CUNY, the other social sciences combined enroll almost the same number of master's degree students as psychology does on its own.

After psychology and the social sciences, the visual and performing arts enroll the next largest numbers of master's students at CUNY. New York City is an international capital of the arts, and CUNY's graduates contribute significantly to the city's cultural life.

Full-time Equivalent (FTE) Enrollment in Master's Degree Programs, Fall 2011
with Percent Change from Fall 2010 to Fall 2011



Professional Science Master's Programs

For those students who may be interested in a science-based job in industry or government rather than in academia, CUNY has established a systemwide Professional Science Master's (PSM) initiative. CUNY PSMs will provide high-quality, professionally targeted graduate education to talented students in STEM fields. This initiative is being designed not only in response to student interest, but also to meet workforce requirements of regional industrial, government, and nonprofit employers.

CUNY has received a grant from the Alfred P. Sloan Foundation to develop these PSM programs, which are expected to produce graduates with cross-disciplinary scientific expertise and the business and social skills to manage complex projects. Scientific programs will be enhanced by "plus" curricula combining rigorous graduate study in a STEM discipline with skills-based coursework such as finance, project management, technical writing, communication skills, organizational behavior, regulatory affairs, and entrepreneurship. Employers commonly cite these skills as crucial to employee success, and in fact the curricula are developed with significant input from employer-partners. Partners such as IBM, Pfizer, Regeneron, and NASA will help provide internships and employment opportunities for program graduates. By 2016, CUNY will offer about 15 PSMs.

Summary of CUNY's Master's Degree Development 2012-2016

The CUNY Graduate School of Journalism recently won approval for the nation's first Master of Arts in Entrepreneurial Journalism; the program will launch in fall 2012. The Graduate Center has also committed to expanding innovative and interdisciplinary master's programs.

Looking ahead to 2016, CUNY aims to expand its offerings in professional science and health areas and to expand innovative programs. Equally important, it must hold its own in the professional fields that have long anchored its master's programs, including, critically, teacher education and business. Given the relative under-enrollment in master's programs in business compared to the national average, and given New York City's role as a world financial center and as the home to countless businesses large and small, enrollment growth in business programs over the longer term is likely. Teacher education remains strongly dependent on the local market for teachers, which tends to be cyclical, but the city's million-student public school system is a powerful long-term generator of demand. Teacher education programs, however, may have to become more active in student recruitment, and perhaps in program renewal, as competitors may increasingly emerge from the private sector.

Doctoral Programs and Doctoral Education

The landscape for doctoral education at CUNY has also changed in recent years. At one time CUNY's only home for doctoral education, the Graduate Center has shifted some of this responsibility. Many of these changes have been made possible thanks to developments and leadership at individual colleges, which have grown and prepared so as to rightfully claim shared academic leadership in several science fields. For instance, City College has become the Ph.D.-granting authority in engineering. In addition, new professional (practice-, instead of research-focused) doctoral programs have arisen that are increasingly based at the campuses instead of the Graduate Center. Even as these changes have occurred, the

Graduate Center has expanded its hiring of outstanding scholars and has enhanced its own national and international academic standing.

The doctoral landscape began to shift in 2005, when the Graduate Center established its first professional practice degrees: Doctor of Audiology (AuD) and Doctor of Physical Therapy (DPT). These degrees were new on the national stage, with professional bodies in these fields mandating a shift from master's degrees to new professional doctorates. This was part of a broader emergence of professional doctorates in health fields. In keeping with the assignment of the Graduate Center as the doctoral-granting unit of CUNY, the doctoral programs in audiology and physical therapy became part of the Graduate Center, the institution's historic focus on the liberal arts notwithstanding. In fall 2006, the Board of Trustees approved a Doctor of Nursing Science (DNS) degree to be offered by the Graduate Center in conjunction with the University's nursing master's degree programs at Hunter, Lehman, and Staten Island. Although this marked the Graduate Center's extension into a new field, the DNS is a research doctorate and thus fit within the Graduate Center's typical profile.

Nationally and at CUNY there has been much discussion of the appropriate place to house new professional doctoral programs. At CUNY these discussions have intensified because the new programs are physically based at colleges rather than at the Graduate Center. Advantages and disadvantages to different approaches were discussed in a report on "Options for Organizing Professional Doctorates at CUNY," prepared in January 2010 by the central office. The discussions resulted in a decision to determine each program's location on a case-by-case basis. This flexibility encourages innovation and allows each campus, including the Graduate Center, to evolve in its own way.

This concept has found recent expression in the development of Doctor of Nursing Practice (DNP) programs at Hunter College (with its program approved by the Board of Trustees in 2011) and in the 2012 proposal for such a program by the College of Staten Island. CUNY is successfully evolving toward a multifocal doctoral system, with the Graduate Center continuing to be the primary, but not exclusive, grantor of research doctorates and the colleges actively engaged in developing and supporting professional doctoral programs (and, at some colleges, research doctorates, primarily in association with the Graduate Center). It is likely that as a result of CUNY's flexible approach, which involves locating each program where it is most likely to flourish, that during the period of this plan some professional practice doctoral programs currently housed at the Graduate Center will move to the colleges that primarily sustain them. Further, it is also likely that, during the period of this plan, additional, new professional doctorates will be established at campuses other than the Graduate Center.

For instance, within the timespan of this Master Plan, the University will continue to study the feasibility of establishing an academic program, including a professional doctorate, in pharmacy. Currently, the only public doctoral program in pharmacy in New York State is located in Buffalo. The local private sector is responding to a need for practicing pharmacists: Touro College has recently opened a School of Pharmacy in Harlem and is a candidate for accreditation by the Accreditation Council on Pharmacy Education. However, public institutions such as CUNY are also obligated to provide avenues for students to attain professional degrees in high-need fields, and so the University will continue to

explore judiciously the advisability of providing high-quality, low-cost professional doctoral education in pharmacy.

The Graduate Center

The Graduate Center nonetheless remains essential to and emblematic of the paradigm of the integrated university. Its consortial model for doctoral education—drawing faculty from CUNY colleges within a structure of shared faculty governance—allows CUNY to offer the highest quality doctoral education. The consortial model also yields benefits for the undergraduate colleges, whose abilities to hire research-active faculty, attracted by the opportunity to work with doctoral students, are enhanced. In addition, as part of its "University Center" function, the Graduate Center also provides administrative support for the CUNY Graduate School of Journalism, the CUNY School of Professional Studies, and the CUNY Baccalaureate Program.

Thus, the agenda of the Graduate Center holds importance for the entire University. Again, it is not possible to delve deeply into the plans of each constituent part of the University in this plan, but several aspects of the Graduate Center's priorities bear mentioning here, especially because they encapsulate issues of affordability, career development, and service to the city and state that are repeated throughout this plan.

- First, even the Graduate Center's doctoral students, who have been attracted by and benefited from enhanced fellowship packages in recent years, have experienced the pressures of the financial climate and the market. The consequent teaching obligations they must assume are an important resource for the colleges and provide useful experience when the time comes to apply for full-time employment. However, just as other obligations can impede undergraduates' progress toward the degree, heavy teaching responsibilities can be detrimental to doctoral students' completion of their own scholarly work and research. The Graduate Center has made it a priority to further improve the fellowships with support from the Chancellery, and has also committed to expanding its own contribution via securing improved philanthropic support. As part of its fellowship improvement initiative, the Graduate Center will intensify its efforts to recruit students from underrepresented groups by means of increased financial aid, enhanced mentoring, and other supportive strategies.
- Second, in order to increase and diversify its graduates' professional prospects in a highly competitive marketplace, the Graduate Center will, in the next four years, expand its professional development efforts, providing students with the skills that they need to prosper both within and outside of the academy, with particular attention to the business, nonprofit, and cultural opportunities in the rich environment that is New York. To this end, the Graduate Center will establish an Office for Professional Development and Placement.
- Third, in order to deepen its research culture and raise its prominence as a national and international center of advanced learning and Ph.D. training, the Graduate Center will foster collaborative and interdisciplinary scholarship, especially by leveraging the depth and breadth of faculty excellence, the academic and cultural assets of New York City, and CUNY's scale. Toward this end, the Graduate Center will establish the Graduate Center Advanced Research Collaborative to advance theoretical research and to address pressing social, political, and economic problems of local,

national, and global significance. The collaborative will focus on overlapping areas of policy, building on strengths in urban politics and policy, urban environments, education policy and international relations, culture (as befits a university in the heart of New York), and theory.

The University will support the Graduate Center as it achieves these goals during the period of this plan. The Graduate Center, in turn, intends to put extra effort into finding the resources it will need, including expanding revenue not only through increased enrollment at the master's level, but also by increasing research funding and through fundraising.

CUNY's Libraries

The University's libraries—its information resources, services, and spaces—are and will continue to be essential to achieving excellence for CUNY faculty and staff across the spectrum of CUNY's degree and research programs. CUNY's libraries have a long, distinguished tradition as an example of the integrated university. CUNY's libraries share resources, collections, and technologies, across the campuses and beyond, through relationships in the city and state.

The CUNY library system consists of the college libraries and the CUNY Central Office of Library Services (OLS). OLS works with campus library faculty to coordinate and enhance library services. OLS provides the University with CUNY+ (CUNY's online catalog), negotiates University-wide contracts and licenses, manages cost-saving centralized cataloging operations, and subsidizes the CUNY digital library collection. OLS also provides forums for the University's library community to come together in functional groups for discussion and collaboration.

CUNY libraries are linked electronically by the CUNY+ integrated library system, which provides online access to information about the holdings at all campuses, including serials collections and titles that are on order. CUNY+ can be accessed from workstations on campus as well as from any Internet connection. CUNY faculty and students may use and borrow physical materials from any of the University's libraries regardless of their college affiliation, as well as being able to access onsite or remotely the online resources managed by the central office or their own campus library. CUNY faculty and students can access the electronic resources managed by a CUNY campus library other than their own when they are onsite at that other library.

The University licenses a growing number of information resources available over the Web. Librarians work in collaboration with other faculty and students to develop the digital collections and resources needed to support teaching, scholarship, and research. Because CUNY's libraries work collaboratively in supporting systemwide needs, CUNY is able to leverage the power of the system to negotiate substantial savings on purchases and licenses. CUNY is committed to ensuring that its libraries have the resources necessary to provide the collections and services that support the teaching, scholarship, and research mission of the colleges. Over the next four years, CUNY will also work toward the goal of enabling all faculty and students to have remote access to the entire set of electronic resources subscribed to across the University.

Enhancing Student Success Through Information Literacy

Information literacy is an aspect of critical thinking, focused on how to find relevant information, assess and evaluate content, and use that content legally and ethically. Information literacy skills are increasingly important as the amount of available information proliferates. CUNY's library faculty provide information literacy instruction to help students develop the skills necessary to find high-quality, vetted information.

Major goals of the Libraries include:

- Enhancing information literacy programs to better provide leadership to general education outcomes pertaining to research skills;
- Articulating best practices and benefits of for-credit information literacy courses taught in library departments by library faculty or in collaboration with faculty from other departments; and,
- Working with colleagues in the New York City Department of Education on initiatives to bridge the gap between research skills sufficient for high schools and those necessary for college.

CUNY has already established a set of information literacy learning goals and objectives for students to achieve by the time they complete 60 credits. By 2013, CUNY will draft CUNY- wide information literacy standards for the baccalaureate level, similar to what has already been accomplished through the associate-degree level. The libraries will then work with campus leaders, faculty, and administrators to ensure that the objectives are met.

Research Support

CUNY's libraries will continue to deploy emerging technologies such as mobile applications and Web-based services to support teaching, learning, and research. By 2013, CUNY will implement a recommendation service that draws upon the expertise of the scholarly community to suggest resources that researchers may wish to consult, as well as a discovery service that searches across databases to streamline searching and increase CUNY's return on investment in electronic resources. CUNY libraries already provide a host of options to obtain research support online. Almost all campus libraries respond to phone and email inquiries and some offer instant or text messaging. Several libraries have gone further by joining Ask-a-Librarian, a national network of reference librarians across the country that offers librarian assistance 24/7. Through 2016, CUNY libraries will continue to develop these virtual services to support faculty and student needs.

Further, the libraries will work to broaden awareness among all constituencies of important developments in the areas of copyright, open access publishing, and scholarly communication. OLS will work collaboratively with members of the University Faculty Senate to develop a CUNY-wide institutional repository in support of open access.

Access and Infrastructure Improvement

Even with technology that enables access to research facilities anywhere, anytime, CUNY libraries remain popular gathering spots for the University's student population. Accordingly, many colleges have been reconfiguring space to provide more group study spaces for collaborative learning, or offer quiet study areas for students who prefer that environment. Over the next four years, the libraries will work with colleagues in facilities management to ensure that CUNY's libraries provide a well-managed and supported "home base" for students while on campus. Specific goals include: ensuring that network bandwidth and wireless networks are adequate to support the delivery of library services and collections; ensuring sufficient electrical outlets and cordless chargers; reviewing space-utilization plans, facilities maintenance operations, and equipment needs; and furthering efforts to establish offsite storage options for library collections.

CUNY will also undertake several technology infrastructure projects during the period of this Master Plan including: exploring migrating the CUNY+ system to vendor-hosted support; re-indexing the catalog; implementing a more effective reporting capacity; and harmonizing bibliographic records between CUNY's local catalog and the global catalog (WorldCat) of the Online Computer Library Center (OCLC). OLS and the college libraries will also work toward eliminating duplicate cataloging records by merging holdings of CUNY libraries onto a single bibliographic record.

Collaborations Promote Success

The CUNY libraries continue to collaborate outside of the University through such organizations as the New York State Higher Education Initiative (NYSHEI). NYSHEI brings together public and private academic and research libraries to advocate within the state for changes to policies and for legislation that will have a positive impact on libraries, research, and economic development. In addition, CUNY collaborates with SUNY and New York State on issues such as procurement, resource sharing, and a materials delivery system. CUNY's libraries will foster collaboration with local library and information science professional degree programs to promote the libraries as a laboratory for developing professionals. CUNY will also continue to recruit and retain high-caliber, diverse library faculty and professional staff and support their professional development.

A vexing problem for CUNY students has been the high cost of textbooks. CUNY libraries will continue to work collaboratively with partners across the University as well as other stakeholders toward innovative solutions to the textbook affordability challenges encountered by students, with a particular emphasis on e-textbook collections. By 2013, CUNY will have identified some of the most frequently assigned textbooks used across the University and approached publishers about making these books available in electronic format.

CUNY's libraries play a vital role within the city and state as part of a network of libraries. Over the next four years CUNY libraries will seek opportunities to develop cost-sharing models in order to expand services. CUNY will work to establish a specific, indirect cost recovery percentage of grants that will be used to support development of library collections and services, and will provide centralized support for library-related grant applications by 2014.

Finally, in the context of the University's concern for evidence-based investment of resources, the OLS will provide support for the statistical reports libraries complete each year. CUNY will also participate in national efforts to develop new strategies to measure library effectiveness.[6] Of particular interest will be the results of the "Values, Outcomes, and Return on Investment of Academic Libraries" study funded by the Institute of Museum and Library Services. This study seeks to define and measure some of the ways in which a library creates value, and focuses on three main areas: teaching and learning; research; and the social, professional, and public engagement functions of libraries. Baruch and Brooklyn Colleges are participating in this initiative, scheduled for completion in 2012.

Academic Technology

Just as technology is integral to the work of the libraries, technology's impact extends into nearly every other academic corner of the University as well. Today's students are digital learners, immersed in the 21st-century media culture. They take in the world (and conduct much of their lives) via the filter of computing devices: sophisticated cellular phones, gaming devices, laptops, TVs, etc. With so much of their experience mediated by networks like Facebook and YouTube—vast and vastly popular networks that didn't even exist a decade ago—today's students participate fully in a whirl of change with which the University is challenged to keep pace. Precisely because technological applications are not ends in themselves, but rather new ways of accomplishing the University's missions and goals, the challenge is not merely to keep pace but to innovate, to be more proactive than reactive in uses of technology for academic purposes.

The Committee on Academic Technology

The last decade has seen the emergence of social networks, the expansion of bandwidth, and the electronic transformation of whole industries. To help the academic community keep pace and be as prepared as possible for future changes, the CUNY Committee on Academic Technology (CAT) was formed in 2008. With two appointees from each campus, the committee and its subcommittees watch over the use of Blackboard, the development of e-portfolios, the maintenance of software licenses, and the modeling of standards and practices for online, hybrid, and tech-mediated teaching and learning.

One of the CAT's subcommittees, Skunkworks, is the research and development unit. Skunkworks tries out new technologies and establishes protocols for evaluation. Because calls for academic technology "solutions" frequently do not come from the user community, this group's evaluation of new products and practices by faculty and student users in appropriate contexts is significant. Given proper support, Skunkworks will become CUNY's Consumer Reports for academic technology in the coming years.

It is important to stress that Skunkworks, and indeed CAT as a whole, must imagine as well as test innovative academic applications of technology. The acceleration of technological change litters the landscape with unexpected and often unintended consequences. New ways of consuming information are not simply new ways of learning, just as textbooks, whatever their format, are not the same as classes. The University has been innovative in its uses of academic technologies, but these uses are not adequately defined by established practices, even those academic technology uses that are relatively recently

[6] Please see http://libvalue.cci.utk.edu.

established. The University must continue to test and adapt new means and modes of instruction and scholarly activity, informed by CAT and other groups that speak for the user community, guided by CUNY's mission of access and excellence.

Online and Hybrid Learning

If access and excellence are core principles of the University's mission, then online and hybrid learning are integral to that mission (with hybrid courses combining online and face-to-face instruction). Online and hybrid courses and programs can provide a rigorous education to students for whom wholly classroom-based instruction is difficult to impossible because of work schedules, family obligations, physical disabilities, or other considerations. Such programs also offer ways of extending CUNY's reach to would-be scholarly collaborators in need of connection.

At the start of the new century, CUNY began working intensively with online and hybrid instruction, supported by funding from the Alfred P. Sloan Foundation. The resulting courses were highly successful; in evaluations students praised the amount of interaction and reported high levels of satisfaction. These courses seemed to create a social environment for learning and collaboration in ways that kept both students and teachers active and engaged.

CUNY's first fully online program, the CUNY Online Baccalaureate in Communication and Culture, was launched in 2006 at the School of Professional Studies (SPS). In 2008, an online BS in business began, and in 2009, CUNY's first fully online graduate degree, an MS in business management and leadership, was launched. Online bachelor's degrees, in sociology and health information management, opened in 2011, and three more, in psychology, information science, and disability studies, are beginning in 2012. One other fully online program is at John Jay: the Master of Public Administration, Inspector General Program.

The success of the online degrees, all at SPS except for John Jay's MPA, has encouraged planning for other online degrees at the campuses. It has also inspired a CUNY-wide initiative to increase the number of hybrid courses in CUNY, courses that are a third to three-quarters online. The Hybrid Initiative, an effort to increase the number of hybrid courses taught with effective practices, supports a significant ramping up of hybrid courses, consistent with the findings of a federal Department of Education report that hybrid courses may be pedagogically most effective.[7] In the next phase of the Hybrid Initiative, central support is taking two forms: (1) the creation of a resource site bringing together successful practices and strategies used in the Hybrid Initiative thus far, and (2) funding support for campuses that can demonstrate strategic planning for additional significant growth of their hybrid courses. Special emphasis is on extending impact, scaling up, and on determining whether learning outcomes in hybrid courses are comparable to those of traditional courses.

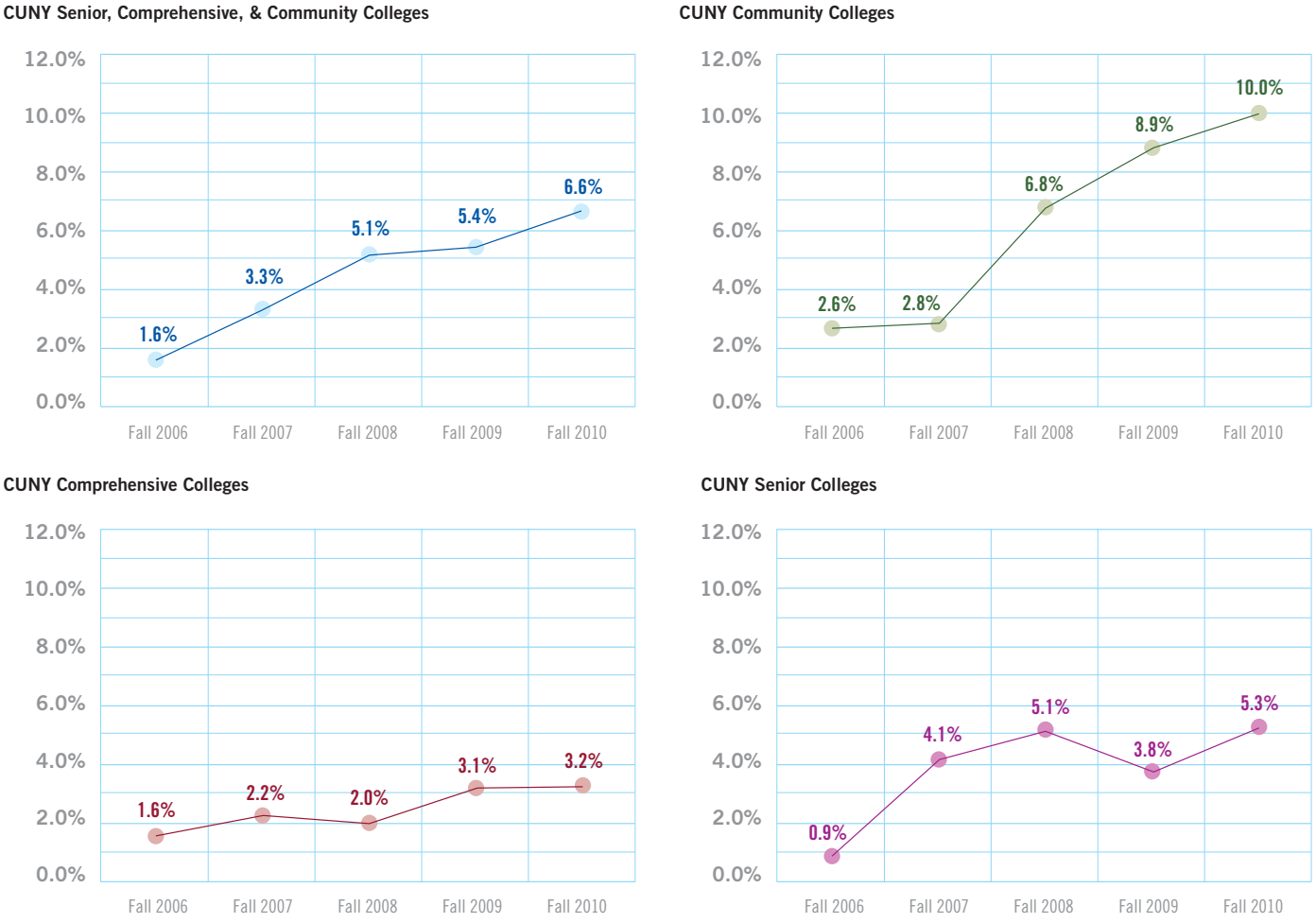
Online and hybrid instruction has also expanded the enrollment capacity of campuses and programs. In some cases, such instruction has accommodated a third more enrollments than the available class-

[7] Means, Barbara, and Yukie Toyama, Robert Murphy, Marianne Bakia and Karla Jones. Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. U.S. Dept. of Education, Office of Planning, Evaluation, and Policy Development, Policy and Program Studies Service, Revised September 2010.

room space. This is an important indicator for future enrollment planning and for the role technology and online instruction can play in reducing the impact of increasing enrollments on CUNY facilities.

Advances in academic technology have been heightened by the importance placed on them at the highest levels of the administration. Campus and University leaders have stressed the importance of academic technology, and particularly but not exclusively of online and hybrid instruction, within the array of pedagogical practices. Increasing such courses is a target in CUNY's Performance Management Process, by which colleges and their leaders are evaluated. In fall 2010, the percentage of instructional (student) FTEs offered partially or totally online on each campus ranged from under 1 percent to over 25 percent (at BMCC). The goal for 2016 is to triple the 2010 mean—a target of about 20 percent of instruction (measured as FTEs) delivered online either fully or partially. The use of academic technology in general, and of online and hybrid instruction in particular, will continue as a planned effort, consistent with the University's mission, and aligned with each college's goals.

Percentage of Instructional (student) FTEs Offered Partially or Totally Online



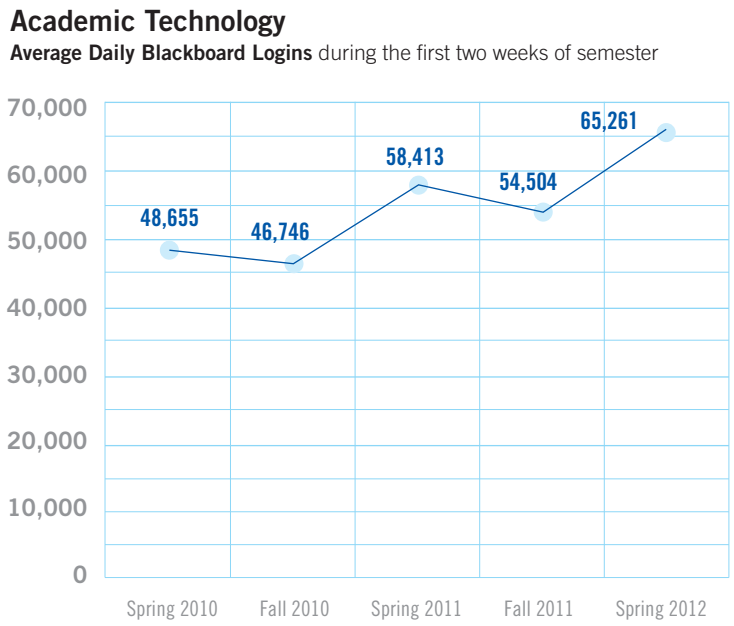
Source: 2010-11 Year-End University Performance Management Report

The Ithaka Experiment in Statistics

CUNY is participating in a national experiment comparing hybrid and traditional face-to-face versions of a statistics course. The hybrid course was developed by the Open Learning Initiative at Carnegie-Mellon University. The study is led by William G. Bowen, President Emeritus of Princeton University and the Andrew W. Mellon Foundation, and Ithaka S+R, a strategic consulting and research group. This research is innovative because of the rigorous design of the assessment of the effects of hybrid instruction, which entails random assignment of students into online or face-to-face course versions. This experiment compares student learning and satisfaction, as well as costs, in an introductory statistics course. Three CUNY campuses, Baruch, CCNY, and BMCC, are involved in this research, along with SUNY and the University of Maryland. This endeavor has important ramifications for CUNY with respect to both quantitative education and to stimulating the development and offering of more hybrid and online courses. This work also marks CUNY's participation in a nationally groundbreaking research study and presents the University as a strong advocate of evidence-based decision making.

Other Academic Technology Initiatives

CUNY is engaged in several other major University-wide academic technology initiatives, including collaborations across campuses using cutting-edge tools to improve instruction and share best practices.



- **Blackboard:** CUNY has reached a point at which most degree students regularly use its online course management system (CMS), Blackboard. Adopted as an enterprise (University-wide) CMS in 2004, and upgraded to a new version in 2008, Blackboard has become the shared landscape for learning in CUNY. In each of the past two years, the number of unique users of the system has gone up 50 percent. An upgrade to Blackboard 9.1, the latest version of the system, is scheduled to take place at all

institutions prior to the start of the summer 2012 term. Colleges are developing training and communications plans to prepare their user communities for the transition.

- **E-portfolio:** Sparked by the success of LaGuardia's efforts, many campuses are in the process of implementing, piloting, or reviewing the use of e-portfolios and evaluating their impact on learning. The e-portfolio is a new way of capturing student (and faculty) work in a Web-based interactive format. E-portfolios allow the user to preserve work done throughout their educational careers, reflect on that work, and share it with others, including potential employers and admissions officers. A CUNY e-portfolio conference is planned for spring 2013.
- **CUNY Academic Commons:** Formally launched in December 2009, the CUNY Academic Commons now has nearly 3,000 members—faculty, staff, and graduate students—and more than 350 working groups. The Commons is a cross-campus resource site that provides links to model projects and programs and also fosters community and faculty dialogue. Built by and for faculty, the Commons combines blogs, discussion forums, wikis, and social networking software that allow members to connect to one another across campuses and disciplines. By 2016, a total of more than 5,000 people, most of them faculty, will be Academic Commons members.

A generous grant from the Alfred P. Sloan Foundation will enable the establishment of The Commons In A Box, a new open-source project that will help other organizations easily install and customize their own Commons platforms. The first such partnership is with the prestigious Modern Language Association, which will use the new platform to create a Commons for its 30,000-plus members.

The development of The Commons In A Box broadens the mission of the original project as it begins to serve the needs of the wider academic community. In extending its suite of tools and functions to other constituencies, The Commons In A Box software will provide a framework for networks that are controlled by institutions and their members, and it will foreground the principles of open access, user privacy, and non-commercial sharing of intellectual work. By 2016, CUNY will be widely recognized as having provided the foundation for other universities and academic organizations to establish their own versions of CUNY's Academic Commons.

Toward 2016

Thoughtful investment in academic technology will play an important role in CUNY's ongoing commitment to its historic mission. The developments of the last few years, assessed and evaluated, have given the University a better sense of what works and what justifies greater investment.

Two points seem to be of critical importance. First, the work of the CUNY Committee on Academic Technology (CAT) and the growth of the Academic Commons in particular point to a compelling change in strategy: instead of literally buying into the innovations of others by purchasing commercial software, and letting that drive uses of academic technology, CUNY faculty and staff have learned to be innovative themselves, and to be mutually supportive of their innovations. Given all that has been done to resource the use of academic technology centrally through enterprise licensing and the use of student technology fee monies at the campuses, the most important investments in the coming years will be in support of the

work of such innovators, not in the hardware or software bought for them to use. Of course, that work must represent demonstrable and sustainable gains in increasing learning effectiveness and fulfilling the goals of the University for access and excellence. CUNY must constantly evaluate its uses of academic technology, ensuring that investments are justified and build on each other, instead of being discrete and unsustainable experiments.

Work in online and hybrid instruction is exemplary in this respect. CUNY's work with online and hybrid instruction indicates that fully online instruction, especially for whole programs, tends to make the most sense for special populations—for student constituencies who for one reason or another find that mode of instruction their one resource—while hybrid instruction seems to have much broader application but needs to show its power in enriching and not simply complicating the mode of instruction. The newest stage of CUNY's Hybrid Initiative includes a focus on learning outcomes, and rigorous experiments such as the Ithaka initiative can begin to provide answers. More such experiments will be conducted during the next four years.

A range of Web-enhanced, hybrid, and fully online courses should offer CUNY students a selection of instructional choices that speak to their learning and scheduling needs. One example, as CUNY defines a common core for general education, is huge potential for online offerings in a University sharing courses across campuses.

Perhaps the single most important lesson academic technology teaches is that investment must be, first and foremost, in people, for success will rest less on technology than on those who use it. Thanks to strategic hiring, CUNY is unusually rich in new faculty—a generation that is tech-savvy, practiced in online interaction, and open to new devices and directions. Veteran faculty have not necessarily fallen behind; one-third of the online and hybrid instruction now is by people who have been at the University more than 20 years. However, initiatives to train faculty must continue and expand, carrying innovations beyond the early adopters to the mainstream, with recognition given to those who commit to mentoring relationships. It is critically important that effective practices in the use of academic technology are duly rewarded. To take full advantage of the generational shift, the University must consider how to sanction academic technology uses and experimentation, especially among the untenured, who can feel vulnerable if they do not hew to traditional avenues of scholarship and teaching. CUNY needs innovators and risk takers, and those same people need academic recognition, through grant funding, personnel decisions, and administrative encouragement.

There will always be the need to invest still more in academic technology. CUNY's investment in Blackboard, the Hybrid Initiative, and the Ithaka experiment in statistics, supported centrally but defined on the campuses, are good models of central office/campus collaboration. With the CUNY Academic Commons, we now have a way of seeding dissemination still more broadly, as innovations at the campuses are shared through the Commons as a hub of mutual support and shared developments. The technological future will need constant development, oversight, assessment, and support. It is an ongoing process to which the University is committed, for it is an integral part of the CUNY mission to provide access to excellent education.

Strengthening the CUNY Student Experience

A variety of co-curricular structures and activities significantly enrich students' academic experiences. Some of the most effective structures include faculty-student interactions, active and collaborative learning, and supportive campus environments. These campus characteristics and activities also correlate with higher student satisfaction, retention, and graduation rates. Students who are connected to the college experience and participate in college life are more persistent and tend to achieve their educational goals.

A careful consideration of recent student trends at CUNY has been critical to planning for enhanced student engagement. In particular, enrollment trends indicate that the University can continue to expect enrollment increases over the life of this master plan, concentrated mainly at the community colleges. In addition, CUNY's student body continues to become more "traditional." For example, compared to the student body of 2002, fewer CUNY students are attending part time, fewer are working more than 20 hours per week, fewer are older than 25, more are entering CUNY as first-time freshmen (as opposed to transfers), and more are entering with no delay after high school graduation. As a result, our campuses, already the locus of community for so many students, must strengthen that essential role in the years ahead.

Over the next four years, CUNY is committed to enhancing opportunities for students to engage more deeply in their academic experience, whether through international study, residential life, internships, student clubs, or a variety of other activities. CUNY's Central Office of Student Affairs, in conjunction with campus-based student affairs offices, is finalizing a multiyear strategic plan that will emphasize priority areas and actions to encourage student success. Student services must work in tandem with academic initiatives to ensure that students have the tools they need to compete successfully in the workplace and to enhance the quality of life of their families and communities. Effective student activities can increase the value of a student's degree, opening up new choices and opportunities to graduates. Following are some examples.

Career Training and Skills Development

To compete in today's global marketplace, students must have opportunities to develop specific strengths and skills. Over the life of this master plan, the University will bolster its career centers and internship programs in order to expand the experiential learning opportunities that enhance students' marketability. More specifically, campuses must make greater investments in developing work experiences, certificates, undergraduate research opportunities, and industry partnerships that will build students' skills and ensure professional currency.

For example, a variety of collaborations, including private and governmental partnerships, can provide educational, career-related, opportunities for students. More specifically, CUNY is working with JPMorgan Chase to provide a workforce pipeline for students in information technology (IT) at Queens College. This partnership will work toward enhancing the IT curriculum at Queens College, utilizing feedback from JPMorgan's investment banking practices, while providing competitive internships and professional development opportunities for students. Expanding these experiential learning opportunities with private industry will position CUNY graduates to be more competitive in tomorrow's global workforce.

Campus Life and Student Engagement

As CUNY's enrollment has grown, one of the most pressing challenges for campuses is to create psychologically intimate and personally meaningful experiences within a large setting. Going forward, CUNY seeks to enhance campus-life experiences for students across its campuses, including but not limited to:

- **Campus athletics:** Developing institutional pride through athletics and related student life programming can enhance a sense of student belonging, connection, and identity, as well as a strong campus community. Creating a healthy spirit of competition with athletes, as well as with student fans, can foster long-term campus allegiance while improving students' satisfaction with the overall campus-life experience. Every CUNY college provides intercollegiate and intramural athletic opportunities, and the benefits of participation extend well beyond sheer physical fitness in the development of teamwork, leadership, and other skills. The CUNY Athletic Conference (CUNYAC) promotes the highest standards of intercollegiate athletic competition at the Division III level. Participating in an individual or team sport cultivates skills—such as team play and endurance—that carry over into students' academic lives. By 2016, CUNY will increase the percentage of its students participating in intercollegiate and intramural athletic opportunities by 5 percent and improve the number of student-athletes earning a GPA of 3.5 or above by 10 percent.
- **Student clubs and organizations:** Investing in student academic and honors clubs and organizations, such as CUNY's very competitive Debate Team, as well as other discipline-specific clubs and organizations, can heighten academic expectations and engage students in academically focused activities. Expanding student organizations for veteran students, international students, and students with disabilities are other examples of potential investments.
- **Residence life:** Over the last several years, new residential living facilities have been built for City College, Queens College, and the Graduate Center, and ground was recently broken for a student housing complex at the College of Staten Island. As CUNY grows its housing and residence life pro-

Artist's Rendering of Student Housing Complex at the College of Staten Island

grams, campuses must carefully develop residential programming to ensure an intentional experience that supports academic learning outcomes. To address this need, over the next four years, the University plans to invest in staff training and develop residential policies and programming expectations.

- **Faculty and peer mentoring:** Regular, focused, faculty-student and student-student interactions can enhance the quality of the collegiate experience and encourage academic success. Through meaningful mentoring relationships, students can learn about resources and opportunities while also gaining valuable guidance and insight about college and professional success. In fall 2012, CUNY will launch a pilot peer-mentoring program, funded by the Lumina Foundation and co-sponsored by the Hispanic Federation, to provide transition support for first-year students while leveraging technology to enhance the development of virtual learning communities.

- **Veteran student services:** CUNY is experiencing significant growth in its student veteran population. Since 2008, veteran enrollments have grown 53 percent across the University, including a remarkable 233 percent in the community colleges. This growth is due in part to enhanced GI Bill benefits, New York State Veterans Tuition benefits, and wars concluding abroad. CUNY campuses must have appropriate programmatic infrastructure, policies, and human resources to effectively guide veterans through the completion of their studies. Moreover, support systems must be enhanced to ensure our veterans receive needed leadership opportunities, physical and learning accommodations, and mental health services and support. To that end, Chancellor Goldstein announced the creation of a committee of the Council of Presidents to recommend changes in University policies and procedures in order to better serve CUNY student veterans and to improve their success in their studies and their preparation for the workforce. These new policies and procedures will be put into place by 2016.

- **Services for students with disabilities:** CUNY enrolls more than 8,000 students with disabilities. The University is dedicated to the full and equal participation of these students in all aspects of University life and offers comprehensive support services and a broad range of programs for all students with disabilities. Going forward, the University will:

  — Provide recommendations about how to best serve the growing population of students with Autism Spectrum Disorder and implement the recommendations as appropriate;

  — Establish a centralized Office of Deaf and Hard-of-Hearing Services (ODHS), reducing costs and improving service quality. CUNY serves more than 400 deaf and hard-of-hearing students, including over 120 students in need of sign language interpreter services. The cost to provide sign language interpreter services through private agencies is three times higher than it would be through professionals employed by CUNY.

  — Expand the use of computers with adaptive technologies to meet the instructional needs of students with disabilities inside of and outside of the classroom.

International Education

CUNY students hail from 210 countries and speak nearly 190 languages. The University's classrooms reflect the globally oriented workplaces students will inhabit as graduates and offer CUNY students rich

lessons in the importance of acquiring cultural competency. Building on this international student base, CUNY should become a clearinghouse for global education, expanding opportunities for students to build their international perspective and disciplinary reach through study-abroad programs.

CUNY's 2008-2012 Master Plan recognized the need to "do more to prepare our students to take active, informed roles in an international context." In the intervening four years, Chancellor Goldstein appointed a Presidents' Ad Hoc Committee on International Education to address the goals, challenges, and opportunities associated with these essential educational experiences. Among the recommendations issued by this committee in its January 2012 report are the following:

- **Recommendation 1:** Revise sections of the CUNY Tuition and Fee Manual in such a way that will encourage the development of faculty-led programs.
- **Recommendation 2:** Ensure that all CUNY students can easily receive information via the website and in publications about study abroad opportunities and special funding.
- **Recommendation 3:** Streamline the international agreement approval process and extend duration to five years. Transfer the approval process to each college with presidents having final signatory authority.
- **Recommendation 4:** Increase financial aid and scholarships for education abroad and develop supportive financial aid policies.
- **Recommendation 5:** Provide support to faculty to develop education abroad.
- **Recommendation 6:** Recognize contributions to increasing education abroad in the annual PMP assessment, under educational excellence and under faculty development.

Currently, only 0.6 percent of CUNY students study abroad in any given academic year. By 2016 this percentage will double.

THE MISSION PART TWO:
Maintain the University as an Integrated System and Facilitate Articulation Between Units

More than a half-century after New York State Education Law enshrined the concept of the integrated university as part of CUNY's mission and identity, embodying the principle in policy and practice remains an unfinished task. As recently as 1999, the aforementioned Institution Adrift report on CUNY issued by a Mayoral Task Force urged CUNY to "strive to become a unified, coherent, integrated public university system, for the first time in its history."

Perhaps the most transformational way in which CUNY is meeting its historic mission and the task force's charge is in the Pathways to Degree Completion initiative ("Pathways"). The first pages of this section of the Master Plan will introduce and explain Pathways and demonstrate how the initiative will, within a solid framework of academic rigor and innovation, unify and integrate the University as never before.

However, smoothing degree pathways is only part of this work. Ensuring that students move from one level of the University to the next requires that students complete each level, and CUNY's student retention and graduation rates are less than ideal. Therefore, this section of the Master Plan will also detail some of the steps that CUNY is taking to increase these rates.

Finally, this section of the Master Plan will describe some of the continuing cross-campus initiatives in which CUNY is engaged that enrich the academic experiences of students and faculty across the system.

Pathways to Quality General Education, Smooth Transfer, and Degree Completion

For decades, the CUNY system has posed challenges for students wanting to transfer among its colleges. Further, CUNY has not had an effective process for quality control of the courses that students wished to transfer. The Office of Institutional Research and Assessment estimates that in 2008-2009, CUNY's 17,000-plus baccalaureate graduates averaged 130 credits—significantly higher than the required 120—at a cost to them and to the state. Many of those excess credits are due to students not having received transfer credit for courses they had taken at their original colleges.

Past efforts to remedy this problem have proved insufficient. It is difficult to establish an effective transfer system when each college, and each department at each college, retains the authority to evaluate every transfer credit—to determine whether each course from another institution is the equivalent of a course at their own institution that satisfies the requirements of their own general education or major curriculum. It seems that, as one college has observed, "[O]nly the central authority of the system can bring the individual college faculty together to define requirements for General Education and disci-

plines that will eliminate obstacles for transparent and successful transfer of equivalent coursework from one institution to another."

The Pathways reform of general education and transfer at CUNY, established by a unanimous vote of the Board of Trustees on June 27, 2011, removes roadblocks to student progress and ensures that courses meet high standards. Once fully implemented, Pathways will help students transfer their general education, major, and elective credits seamlessly among CUNY's colleges, smoothing the transfer process and producing better-prepared students by setting high standards—as determined by faculty across the University.

The centerpiece of the Pathways initiative is a new, systemwide framework for general education that leaves course-specific decisions to college faculty and governance bodies. When it is complete, Pathways will:

- Raise the quality of content in general education courses at both community and senior colleges, by aligning curricula to rigorous, agreed-upon learning objectives;
- Give students more opportunities to explore and take chances and to study in more upper-division classes than most can now;
- Better enable students to do minors or to double major;
- Put CUNY more in line with regard to the number of credits required by most U.S. universities for general education;
- Remove uncertainty from the process of transferring among CUNY colleges.

The process of developing the Pathways framework engaged all constituents of the University community. The Chancellor, after seeking nominations from the colleges and the University Faculty Senate, established a task force, composed primarily of faculty and chaired by the Dean of the CUNY School of Law, to develop recommendations for a general education, common core framework defined by learning outcomes. The task force comprised two committees: a 16-member steering committee and a 39-member working committee to advise it and serve as a communication channel with the colleges. The task force sent draft recommendations to the entire CUNY community, revised those recommendations based on feedback received, and submitted final recommendations to the Chancellor, who accepted those recommendations in December 2011.

The task force's general education recommendations build on the excellent general education curricula already developed by CUNY's campuses. In recognition of the distinct characteristics of the various CUNY colleges, flexibility for individual campuses has been maintained. From the beginning, the process of defining the framework's content areas and outcomes has been faculty-driven; every committee has been and will continue to be predominantly or entirely faculty. The recommended structure puts students at the center of the University's academic enterprise, with clearly articulated, challenging outcomes and defined pathways. It is the result of an inclusive, consultative process that engaged the entire University and reflects suggestions and concerns offered by every CUNY campus.

The 30 credits of the Common Core of general education will develop a broad range of knowledge and skills and build a solid intellectual foundation upon which students can engage in study and analysis at

successively higher levels as they progress in their studies. The required portion of the Common Core consists of: English Composition (six credits), Mathematical and Quantitative Reasoning (three credits), and Life and Physical Sciences (three credits).

The other portion of the Common Core, the Flexible Core, consists of 18 credits: six three-credit liberal arts and sciences courses with at least one course from each of the following five areas and no more than two courses in any discipline or interdisciplinary field: World Cultures and Global Issues, U.S. Experience in its Diversity, Creative Expression, Individual and Society, and the Scientific World.

To ensure the quality of the Common Core across the University, the Pathways resolution passed by the Board of Trustees in June 2011 specified that the University Office of Academic Affairs, working with the colleges, "will facilitate the expeditious review and approval of all courses proposed for the Common Core with the assistance of a CUNY-wide committee, appointed by the Chancellor." To that end, in early March 2012, Chancellor Goldstein announced the establishment of the CUNY Common Core Course Review Committee. This committee was charged with the task of reviewing courses submitted by the colleges to ensure that they meet the designated learning outcomes for the corresponding Common Core curricular areas. The committee consists entirely of tenured faculty and is divided into eight subcommittees, one for each area of the Common Core.

Baccalaureate-granting colleges will add six to twelve "College Option" general education credits in disciplinary or interdisciplinary areas of their own choosing so that graduates with a baccalaureate degree will complete a total of 36 to 42 credits in general education.

In addition, disciplinary committees have been established, again based on a nominating procedure including the colleges and the University Faculty Senate, to determine the first three to six courses that lead into the largest transfer majors. Members of these committees are tenured faculty, very knowledgeable about curriculum in their areas, and highly regarded within their disciplines and communities. The President of the Graduate Center is chairing this phase of the initiative.

The Pathways courses will be first offered in fall 2013. By 2016, the first associate-degree holders who have taken the entire Pathways Common Core will be transferring to CUNY senior colleges. As a result, by 2016, CUNY's undergraduate retention and graduation rates should start to increase significantly.

Community Colleges

Community colleges are the fastest-growing sector of higher education; they currently enroll close to half of all U.S. undergraduates. Much of the enrollment surge at CUNY has been at the community college level, driven in part by the recession, and by the need to update skills and find lower-cost, high-value college alternatives. Community colleges are a critical pathway for many students seeking baccalaureate and advanced degrees. Graduation rates at community colleges throughout the nation, though, have long been disappointing—overall, approximately 22 percent earn degrees within three years and just 16 percent at large urban schools. President Obama has challenged community colleges to educate an additional five million students with degrees, certificates, or other credentials by 2020.

A report by the Center for an Urban Future notes that, "[l]ow graduation rates exact steep costs to

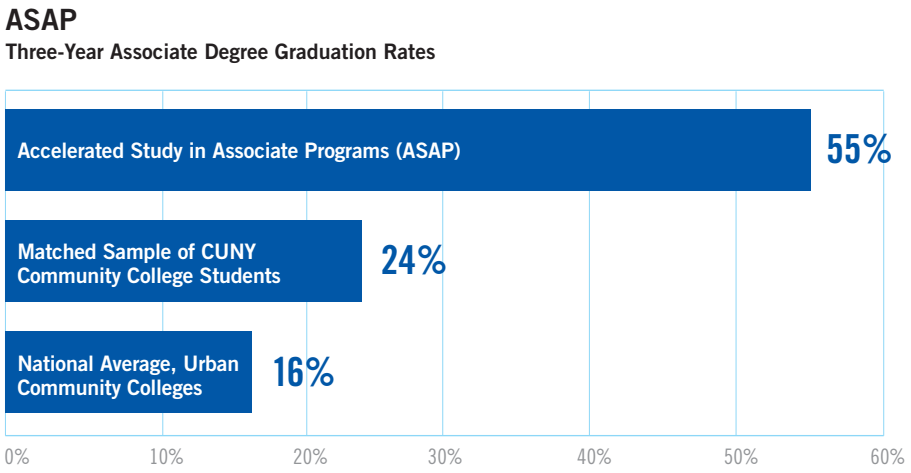
individuals, businesses, the economy and taxpayers. Increasing the number of community college students who graduate will not only make it easier for employers to find qualified workers, it will dramatically raise the employment prospects of graduates and put them on a career track with significantly higher earning potential. And, of course, with higher earnings comes more spending in the local economy, higher tax receipts and more effective public investments in the form of operating aid and grants."[8]

Each of the community colleges of CUNY has developed programs on its campus that have shown positive results in improving retention and graduation rates. From the development of learning communities at Kingsborough, to the establishment of curricular academies at Queensborough, to the use of e-portfolios at La Guardia, faculty and staff are consistently assessing their work to ensure that students are achieving greater levels of success. Many of these interventions have been part of large nationwide efforts to impact student success and have been rigorously evaluated by organizations such as MDRC and the Community College Research Center of Columbia University. Major foundations including Gates, Robin Hood, Helmsley, Hecksher, Walmart and others have reinforced the good work of CUNY's community colleges with large grants that invest in the best practices that have been implemented on CUNY campuses. Over the next four years, CUNY will continue to play an active role on the local and national stage, sharing with colleagues those practices that have proven successful, as well as continuing to support faculty and staff innovation to improve graduation rates. In September 2011, CUNY hosted "Reimagining Community Colleges: A National Colloquium." Educators from 26 states and the District of Columbia gathered to examine the mission, structures, and practices of community colleges. In opening remarks Chancellor Goldstein said, "If we don't reimagine community college education, and convince the marketplace of its tremendous value to our future, our country's entrepreneurial capacity and its educated workforce—that is, our social and economic front line—will be seriously compromised." Two CUNY initiatives, described below, are leading the way in rethinking community college education in support of significantly increased student success.

Accelerated Study in Associate Programs (ASAP)

ASAP has proven to be one of the most successful community college programs in CUNY's—as well as the country's—history. Created in fall 2007 with funding from the Mayor's Center for Economic Opportunity (CEO), the program is designed to help students earn their associate degrees as quickly as possible, with a goal of graduating at least 50 percent within three years. The fall 2007 cohort exceeded the goal and achieved a 55 percent three-year graduation rate versus 24 percent for a comparison group. The ASAP graduation rate was three times the national urban community college three-year rate of 16 percent. The fall 2009 cohort, primarily low-income students with developmental education needs in one or two courses, realized a two-year graduation rate of 28 percent versus 7 percent for a comparison group, and will likely meet the 50 percent target by next summer after three years in the program.

[8] Center for an Urban Future. Mobility Makers. November 2011



ASAP program elements include required full-time study, a cohort model with block scheduled courses, a limited number of majors, consolidated class schedules, small class size, comprehensive advisement, academic and career development services, and special programs to support student success. Students with developmental needs take these courses immediately and continuously and attend tutoring. The program aggressively promotes winter and summer course taking to increase credit accumulation momentum. Financial resources provided to remove the barriers to full-time study include waiver of any balance between financial aid and tuition/fees, free use of textbooks, and monthly Metrocards. Students also report that close, personal relationships with program staff and structured support are instrumental in helping them complete their degrees.

ASAP is now at six community colleges and current enrollment is 1,338. Student demographics mirror those at other CUNY community colleges. The students are largely minority and low income. Most work, and many have children and are the first in their families to attend college. Many are also overcoming challenging personal circumstances, but ASAP students are nevertheless succeeding in previously unimaginable ways.

The program employs a rigorous evaluation agenda that includes quantitative and qualitative data analysis. Data, including student outcomes, are constantly examined to assess program efficacy and to make adjustments if appropriate. ASAP is currently involved in a random assignment experiment led by MDRC, one of the most respected independent organizations conducting research in higher education. Students with one or two developmental needs have been randomly assigned to either ASAP or traditional community college education at CUNY. The first results of this experiment are being released by MDRC in spring 2012. A complete financial analysis of ASAP, including determination of the cost per graduate as compared to the cost per student, is also being conducted in spring 2012.

Initial funding from the CEO has now been baselined into the regular operating budget of the University. ASAP has become a model both within and outside of CUNY. The program is regularly cited in major publications on community colleges, at national higher education forums, and by respected funding and policymakers as a successful evidence-based program.

Several CUNY community colleges have already adopted or will be adopting features of ASAP. The Queensborough Freshman Academies, which began in fall 2009, are modeled on ASAP design features including blocked course taking, coordinated student support services, and a connected community of learners. Bronx Community College and Kingsborough Community College are piloting a program drawing from ASAP's intensive academic advisement and support model that will work with students on public assistance who have earned at least 30 college credits to help them graduate within one year.

Chancellor Goldstein has announced that the University will expand ASAP over the next three years, to reach an enrollment of more than 4,000 by fall 2014. The expanded ASAP will continue to provide core services but the delivery methods will be modified to serve the larger cohort. Teams at each community college are working to develop strategies to address priority areas including movement through remediation and gateway courses, a summer program, and staffing and infrastructure needs. Although the expanded program will operate on a lower per-student cost, it will nevertheless require additional funding to serve three times the current number of students. The expansion of this initiative underscores the Chancellor's resolve to act boldly to prepare students for the demands of an increasingly competitive economy.

The New Community College at CUNY

In September 2011, Governor Andrew Cuomo approved the establishment of The New Community College (NCC) at CUNY. The University's first new college in more than forty years, the NCC is the realization of Chancellor Goldstein's visionary charge, in 2008, to develop a new educational model for a community college that would enhance student academic achievement and the timely attainment of degrees.

The New Community College will open in fall 2012 with 300 students. By year 5 the current facility at 50 West 40th Street will enable the NCC to serve approximately 1,100 full-time-equivalent students. A permanent facility, to be constructed, will enable NCC to enroll 3,000-5,000 students.

The overarching priority of NCC is to significantly improve student learning, retention, and graduation by rethinking community college education and practice. These goals have been the primary drivers in the development of an innovative, new educational model based on extensive research and consultation. Many principles underlying the design of the NCC have been derived from the lessons learned with ASAP. With the new model the NCC aspires to achieve a three-year graduation rate of 35 percent among a student population that is often least likely to persist in higher education.

Mathematics Education

In all areas of CUNY undergraduate education, by far the lowest success rates are in mathematics. Consistent with national data, in most CUNY lower-level mathematics courses, over 50 percent of students who start a mathematics course never successfully finish. Mathematics is the largest impediment to CUNY students progressing from one to the next level of the University.

For some time, the colleges and the central office have been engaged in a variety of collaborative efforts to improve student success in mathematics at every level. Many activities are under way to enhance mathematics readiness, improve mathematics pedagogy, and increase success rates. Changes in

policy have been developed in consultation with the Mathematics Discipline Council, which consists of the chairs of the mathematics departments across the University.

For example, based on analyses of the relationship between COMPASS mathematics scores and the likelihood of success in the next mathematics course in the sequence, CUNY raised COMPASS standards on both the pre-algebra and elementary algebra modules that are used for placement. The new policy sets cut points at 35 on the pre-algebra module and 40 on elementary algebra. The new policy also raises CUNY's Regents-based mathematics proficiency standard. For fall 2012 and thereafter, applicants may demonstrate proficiency by scoring 80 or higher on any one of the new Regents exams and successfully completing Algebra 2 and Trigonometry or a higher-level high school course.

Based on additional analyses demonstrating that, following initial placement, CUNY mathematics departments' departmental exams were better predictors of future class performance than were COMPASS scores, CUNY has now eliminated the requirement that CUNY use the nationally normed COMPASS exam for exit from mathematics remediation. In addition, CUNY convened a panel of mathematics faculty and charged them with establishing common standards for satisfactory completion of the arithmetic and elementary algebra remedial courses. These standards are being used to develop an exam that all mathematics departments will use, thus holding all CUNY students to the same mathematics performance criteria in these subjects.

CUNY is also considering making available, for use in classrooms or learning labs, software that provides diagnostic information about a student's strengths and weaknesses to which instruction could be tailored. Students could then focus on competencies that they need to learn and bypass lessons on material they have already mastered.

CUNY is also exploring several alternative remedial pathways in mathematics, especially for students not planning to major in a STEM area. Toward this end, CUNY may pilot Statway, a course sequence with a special focus on statistical literacy, and/or Mathway, which focuses on general quantitative reasoning skills. Both of these are currently being piloted by the Carnegie Foundation for the Advancement of Teaching. BMCC participated in Carnegie's Quantway project and through this project developed a course in "Mathematics Literacy." BMCC now plans to create a new developmental pre-algebra sequence that shortens the time to mastery of basic skills in mathematics.

CUNY has developed other initiatives to promote excellence in mathematics. Some of these are described on "Math Matters," a website dedicated to CUNY mathematics teaching and learning (www.cuny.edu/academics/initiatives/cuny-math-initiative.html).

For example, for the past three years CUNY has bestowed the Chancellor's Awards for Excellence in Undergraduate Mathematics Instruction. Chancellor Goldstein established these prestigious yearly awards to recognize faculty who have implemented an outstanding, evidence-based instructional method for teaching undergraduate mathematics, either developmental or credit bearing. These instructional techniques must positively impact student learning and have the potential to be used with many students. This awards program, which annually gives up to six awards of $5,000 each, will continue to increase awareness and usage of mathematics pedagogy and resources.

As mentioned earlier in this plan, in spring 2009, CUNY launched a grant program, Improving Undergraduate Mathematics Learning (IML), to support research on undergraduate mathematics instruction. Applicants were to test methods for increasing student success in mathematics. Ten faculty teams—27 faculty members from eight different CUNY campuses—were awarded grants ranging from $32,000 to $86,000. The final reports have been posted on the Math Matters website and are being further disseminated in conference presentations, CUNY publications, and peer-reviewed journals.

Another new initiative is the biannual conference for CUNY mathematics faculty hosted by the Office of Academic Affairs, CUNY's Mathematics Discipline Council, and the Center for Digital Education. These conferences provide an opportunity to discuss, share, and disseminate best instructional practices in undergraduate mathematics instruction at CUNY. This year the conference theme, "Effective Instructional Strategies," will be considered in the context of technology, curriculum, pedagogy, and faculty development.

Many colleges are finding success in the use of technology to aid mathematics instruction. At Baruch, for example, the Mathematics Department has used technology to solve two problems: listening in class and doing homework. Several faculty are using tablet PCs to project work on the board, which they then post on Blackboard to enable students to write less and listen more. Faculty are also using online homework programs that generate different problems for different students. The programs grade the homework and report the grade to the instructor. Baruch gives regular workshops for faculty on the use of technology and has begun experimenting with hybrid courses in pre-calculus. Faculty piloting these courses have found their students active and engaged. CUNY will be looking for other ways to use technology to enhance student success in mathematics, as well as to share the results of successful innovations.

In summary, during the period of this master plan, CUNY will continue to find ways to identify the most promising practices and encourage their broader adoption across the University and across the country.

Additional Examples of CUNY-Wide Academic Initiatives

Several additional CUNY programs have successfully harnessed the power of an integrated system through cross-college collaborations that increase student opportunity and more efficiently make use of limited resources. These programs serve as examples of intra-university partnerships that utilize CUNY's scale to offer benefits not otherwise available to students. Going forward, the University will continue to consider joint initiatives in order to maximize resources and enhance students' academic experience.

Dual-Joint Degree Programs

The colleges have continued to develop dual/joint degree programs. As Kingsborough Community College states, "The strategy of developing joint degree programs [is] the 'gold standard' for successful partnerships with CUNY senior colleges." For example, Kingsborough offers four jointly registered programs with Brooklyn (and is working on a fifth), two with John Jay, and is working on a joint program in nursing with the College of Staten Island. Queensborough now has a joint program with Hunter in nursing, as well as dual/joint degree programs with York in Pharmaceutical Science and Biotechnology. BMCC is in the initial stages of developing a dual degree in nursing with Hunter, and another in liberal

arts with Baruch's School of Public Affairs. John Jay's Justice Academy, a joint admission program developed in partnership with all six CUNY community colleges, is a highly successful model of collaboration within the University. CUNY will continue to develop these sorts of dual-joint degree programs.

Institute for Language Education in Transcultural Context

CUNY has an exceptionally rich set of linguistic resources both in its students and in the communities surrounding its campuses. The University is thus extraordinarily well poised to advance the study of languages and produce graduates who are trained in the use of the transcultural and translingual tools required to enter multilingual markets, both globally and locally.

CUNY offers instruction in about 25 languages, and roughly half of CUNY's students speak a language other than English at home. To leverage these resources, within the first year of this Master Plan, the University will establish a CUNY Institute for Language Education in Transcultural Context. The institute will be housed at the Graduate Center and will also receive foundational support from Hunter College, Queens College, and the CUNY Central Office.

As currently envisioned, the institute will coordinate the high-level research, leadership, and advocacy necessary to deepen, broaden, and catalyze CUNY's significant strengths in world languages and cultures, at both senior and community colleges. It will accomplish these goals through multiple means, including collecting and analyzing data on language teaching at CUNY and fostering the exchange of best practices in language instruction. The institute will aim to fully develop immersion programs and study abroad opportunities and it will foster the strategic development of less commonly taught languages. Finally, the institute will develop models for teaching heritage-language courses and creating attractive, content-driven minors with an eye toward heritage-language speakers.

CUNY-Theatre Development Fund Collaboration

Bridging Education and Theatre (BEAT) is a program that introduces the CUNY community to New York City's performing arts through a range of programs designed by the Theatre Development Fund (TDF) and tailored to the needs of the CUNY community. Given that 80 percent of CUNY students remain in New York City after graduation, this partnership will help them become lifelong theatregoers, able to enjoy and participate in a vital and vibrant part of the cultural life of the city.

BEAT, which was piloted during the 2010-11 school year by Baruch, Brooklyn, and Lehman Colleges and by LaGuardia Community College, has doubled in scope for its second year and is now available as well at Hunter and John Jay Colleges, New York City College of Technology, and Queensborough Community College. The program expects to expand each year, eventually to all 24 CUNY campuses.

BEAT has already launched four programs at the campuses involved in the initiative:

- Production Process: an enrichment program in which theatre professionals from different performing arts disciplines participate in moderated discussions on various aspects of theatre production for an audience of CUNY students;

- Mentoring: in which a theatre professional mentors a group of CUNY students through a credit-bearing course that combines theatre-going with academic work in a specific discipline;
- Internships: CUNY students participate in for-credit internships in their field of study at TDF and throughout the theatre industry; and,
- Ticketing: each school has a group participate in TDF's "New Audiences of New York," a program that introduces theatre, through attendance and education, to underserved groups across the five boroughs. Students from each campus attend theatre performances and participate in pre- and post-performance discussions.

TDF is also offering discounted annual TDF memberships for students, faculty, and staff at the eight participating campuses.

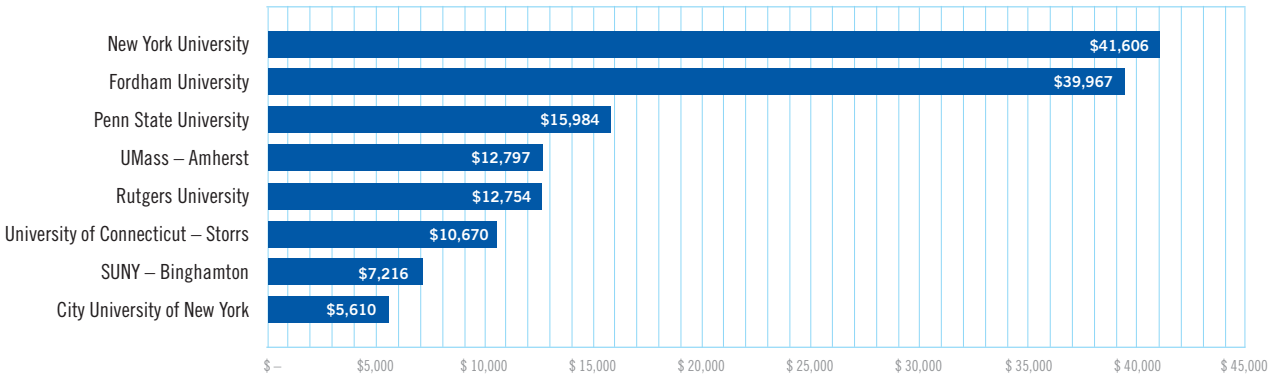
Creative Writing MFA Consortium

In the fall of 2007, the Office of Academic Affairs supported an initiative to coordinate projects among the four CUNY MFA programs in creative writing. This initiative led to the formation of an affiliation group, comprising representative members from Brooklyn, City, Hunter, and Queens Colleges. The group's first collaborative effort was major sponsorship in the 2008 Association of Writers and Writing Programs (AWP) annual conference. Since its initial successful launch at the conference, the group has continued to meet to initiate further collaborative projects, including: the annual Turnstyle Reading Series (a mixer for graduate MFA students and writing faculty) and the Celebration of the Chapbook (an annual chapbook festival featuring prominent chapbook presses from around the country). Last year, the group added to its initiatives a commitment to secure tuition funding for the CUNY MFA students in creative writing because "low tuition does not equal zero," especially in New York City. The top-ranking creative writing programs in the country all offer full support. Offering tuition abatement to students is crucial to staying competitive (as well as aligning with the group's vision of the arts). Toward this end, the representatives have been meeting with the University Dean for Institutional Advancement to create a tuition abatement prospectus and strategy to approach funders. In 2012-2016, CUNY will continue and build projects that benefit both the students and faculty of the four CUNY MFA programs in creative writing, and launch a campaign for full tuition abatement.

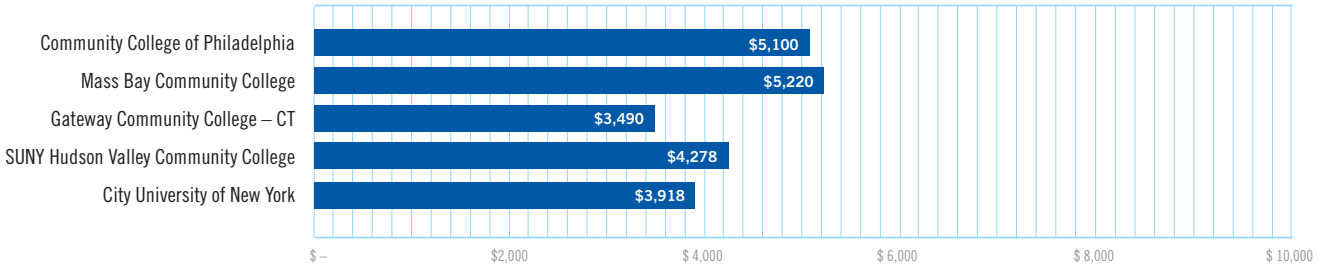
THE MISSION PART THREE:
Expanding Access

New York State Education Law is clear when it stipulates: "The legislature's intent is that ... the university will continue to maintain and expand its commitment to academic excellence and to the provision of equal access and opportunity...." Having outlined core components of academic excellence as envisioned for 2012-2016, this Master Plan now turns to the ways in which access to excellence will be expanded to meet the evolving needs of New York's diverse populations.

Tuition and Fees at 4-Year Universities in the Northeast
2011



Tuition and Fees at Community Colleges in the Northeast
2011



Financial Aid

Significant as are CUNY's stable revenue projections for the next four years, challenges remain. Although CUNY tuition is in the lowest decile of public universities nationwide, too many students are financially stressed. They encounter an array of constraints as they struggle to gain a foothold in society.

To ensure that students can access and complete a college education that will support their advancement, CUNY will continue to take a lead in advocating for the availability of robust state and federal financial aid.

New York State has a rich program of financial aid through the Tuition Assistance Program (TAP), and students can also receive Pell Grants through the federal government. However, New York City is expensive, and many demands compete for limited resources. CUNY will therefore continue to lobby the state and federal governments and to present the case that the best investment the United States can make—the investment most likely to help America advance economically and enable it to compete in world markets—is an investment in higher education.

The legislation that has provided CUNY with stable funding for the next four years includes a provision directing CUNY and SUNY to conduct studies of the TAP program and to develop recommendations to further improve student financial aid in New York State. This dialogue has begun. Among the important issues to address are the needs to increase the maximum TAP award up to the highest public sector tuition in New York State, address a disparity with the TAP award calculation as it pertains to independent students, and expand tuition assistance to part-time students.

CUNY is committed to ensuring that no student in need of financial assistance is denied access to the University. To that end, funds have been budgeted to help students with severe financial needs to bridge the gap between the maximum TAP award and tuition. In addition, a $5 million Student Financial Assistance Program ($2 million for a student employment program, $2 million for textbooks to be held in the library, and $1 million for an additional tuition waiver program) will provide further financial assistance. Few public universities take money from their operating budgets and dedicate it to financial aid for students; that CUNY does so reflects the values of its leadership.

The University is also concerned that students' financial aid be protected from annual budget battles, and that the state and federal governments be realistic regarding the years needed for students to graduate. On the federal level, the Chancellor will continue to mobilize leadership as evidenced by the two national summits cited earlier in this plan, and will continue to fight reductions to the Pell program. In addition, he has endorsed efforts to provide financial assistance to undocumented students and to establish pathways to citizenship, as well as financial aid, through the Dream Act and similar legislation.

In addition, CUNY's Office of Admissions will build on its proactive efforts to assist students in understanding the cost of college, the types of financial aid available, and the requirements and deadlines for aid applications. Through its comprehensive website, extensive in-person and electronic outreach, and expert counseling, the admissions office will continue to serve as a one-stop resource center for all students.

The challenge of maximizing financial aid is an example of the University's focus, as is borne out in this Master Plan, first, on students having rigorous, high-quality educational experiences, and second, on doing whatever is necessary to keep students on track to have those experiences.

Responding to Basic Student Needs: The SingleStop Initiative

CUNY students' financial needs are not limited to funds for tuition. Sixty percent of CUNY students come from the lowest income brackets in America. Many face challenges with housing and food security,

health insurance, and other basic needs. These challenges can make it difficult—or impossible—for CUNY students to attend or stay in college. In response, CUNY partnered with the SingleStop program and the Robin Hood Foundation, in 2010, to make students aware of their eligibility for public benefits. As a result, in the past two years, the University has been able to deliver close to $40 million in public benefits to students enrolled at our community colleges.

To sustain these important programs, CUNY will begin discussions with SingleStop USA and the Robin Hood Foundation to determine a timeline for institutionalizing staff, services, and benefits technology. Moreover, during the next four years, CUNY will examine whether such services can be replicated at the comprehensive and senior colleges.

Preparing for College Success

CUNY receives 70 percent of its students from the New York City Department of Education (DOE). The University invests substantial resources in serving these public school students and in serving out-of-school youth. These services focus on preparation for and entry into college and movement through the first year.

The goals of these pre-college programs are linked closely to the University's mission: (1) to improve the academic achievement of high school students so that fewer students require remediation upon entry to college, and (2) to accelerate credit accumulation and degree completion for students who meet readiness standards. The work attempts to eliminate obstacles in the transition from high school to college and takes place through college/public school collaboration and curricular alignment.

Several University initiatives have received national recognition in this regard. College Now, for example, is an enhanced dual-enrollment program that provides multiple pathways to college readiness including college-credit courses, preparatory courses, workshops, experiential-based summer programs and access to campus facilities and cultural offerings. As studies showed that students benefited from participation in College Now, the program was scaled up. In 2010-2011 it served approximately 20,000 students at all of the undergraduate colleges and over 350 NYC public high schools. In 2012-2016 CUNY will continue to perform rigorous research and evaluation on the effects of its dual-enrollment programs. College Now is developing a quasi-experimental study on the effects of the program and is considering moving toward a random assignment evaluation (an experimental design).

Newer initiatives have borrowed successful practices from College Now. At Home in College (AHC), for example, is a Robin Hood Foundation funded college transition program that works with students from DOE high schools and CUNY GED programs serving students who are on track to graduate but who have not met traditional benchmarks of college readiness. The program prepares students for CUNY's placement exams, provides workshops that help them complete the Free Application for Federal Student Aid (FAFSA) and the CUNY online application, and provides advisement support the summer before matriculation and during their first year at CUNY. Initial outcomes have been positive, including gains in college enrollment, gains on the CUNY Placement Exams (and less need for remedial coursework), and higher persistence rates into the third semester compared to a similar CUNY cohort. AHC is scaling up;

in September 2011, it was serving about 1,800 students in partnership with 62 NYC public high schools, and by 2016 it expects to serve 3,000 students.

Graduate NYC! College Readiness and Success

In August 2010, the Bill and Melinda Gates Foundation awarded New York City $3 million over three years for the Graduate NYC! College Readiness and Success Initiative. Bringing together the resources of the Mayor's Office, the NYC DOE, The City University of New York, several city agencies, and an extensive group of local community-based organizations, Graduate NYC! is committed to the goal of significantly increasing the number of CUNY graduates by 2020. Each stakeholder shares the belief that improving high school and college outcomes for all students is imperative to the city's long-term health and economic stability, and that they must work together for either to succeed.

In 2020 the city will hold its major education institutions accountable for the following:

- Increase the percentage of high school graduates meeting college readiness standards from 38 percent (of 2010 graduates) to 67 percent; Increase the percentage of high school graduates going directly to college by 21 percent;
- Three-year graduation rates for CUNY associate degree students will increase from 10 percent for students entering in 2006 to 25 percent for students entering in 2017, and the four-year graduation rate will increase from 15 percent of students entering in 2005 to 40 percent of students entering in 2016; and,
- Six-year graduation rates for CUNY baccalaureate students entering in 2014 will increase to 61 percent (from 47 percent of students entering in 2003).

To achieve these ambitious goals, work is taking place both within and across the city's education and youth-serving institutions. Each college and each organization involved in this effort has significant work to do to raise academic rigor, enhance advisement and student support services, measure and report progress, scale up promising practices, and ultimately improve student outcomes.

Graduate NYC! provides an environment to facilitate CUNY's work with the NYC DOE, to enhance undergraduate education, and to advance CUNY's national standing and leadership with regard to student success. Neither CUNY nor the DOE can do any of this alone. The work expands on what has been learned from programs such as College Now and At Home in College and must ultimately happen through partnerships among colleges and secondary schools, enhancing access to, and successful completion of, college.

To move this initiative forward CUNY will work with the DOE to:

- Develop a comprehensive action plan to better align CUNY and DOE programs and curriculum to improve college readiness and success in reading, writing, and mathematics;
- Understand the impact of new state assessments, and develop protocols for using new Regents Exams and/or the new national Common Core State Standards assessments to better diagnose students' needs prior to graduation;

- Develop and expand high school, senior year interventions for students who do not demonstrate college readiness on existing assessments, and increase opportunities for students to take "catch-up" courses in high school, including those offered by College Now, At Home in College, and the Early College schools;
- Develop more effective and consistent communication strategies regarding basic college readiness factors, including CUNY's skills proficiency benchmarks, and the consequences of not passing the CUNY skills assessment tests;
- Enhance coordination and communication among the city's education institutions, youth-serving city agencies, community-based and nonprofit organizations, and local funders to align and strengthen efforts to better support students and families;
- Pilot new collaborative structures through which high school and college faculty can work together to improve college readiness;
- Develop data infrastructure and common metrics to hold all entities accountable to improving student outcomes, and report progress toward goals to all constituencies;
- Use the CUNY/DOE data exchange to track the performance of high school graduates as they enter college and as they progress through their programs;
- Increase opportunities for eligible students to begin earning college credit while in high school in order to build momentum toward graduation.

To date, several discrete projects have emerged from this work, including the four described below.

The CUNY-DOE Curriculum Alignment Project

This project brings together faculty and curriculum development experts from CUNY and the DOE to generate curricular units and performance-based assessments that are aligned across high school, remedial, and college gateway courses in English and mathematics, and with the new national Common Core State Standards. CUNY faculty will include representatives from community and senior colleges, and from the departments of mathematics, developmental skills, and teacher education. Faculty teams, through an intensive curriculum development process, will design units and assessments that can serve as exemplars to be disseminated widely throughout CUNY and DOE. In fall 2012, faculty will field test newly developed units and collect student work resulting from those units. In spring 2013, faculty teams will evaluate student work samples and refine curricular units as needed. With this curricular unit design as a foundation, the project will be brought to scale using course redesign through 2014 that aligns standards across DOE and CUNY in targeted remedial, college gateway, and teacher education courses.

The CUNY-DOE Early Intervention Program

To begin to approach the readiness issue on a systemwide level, CUNY will launch a pilot in summer 2012 to identify and work with high school seniors in selected NYC public high schools who are on track to graduate but who do not meet CUNY college readiness standards. The program will provide opportunities for these students to develop college-level mathematics, reading, and writing skills by the time they graduate.

CUNY and NYC public school administrators and faculty will work together to determine how existing assessment tools can be used to provide more complete information about students' college readiness by the end of the 11th grade. This information will be used to place students in the appropriate 12th grade intervention. A range of courses or activities designed by experts from DOE and CUNY will be offered to help prepare students for success on both the CUNY Assessment Tests and in first-year courses. A professional development component will allow English and mathematics faculty teaching in this project to meet regularly to discuss curriculum and student work. Workshops and advisement services by high school guidance counselors and college mentors will provide information about postsecondary education opportunities and benefits, financial aid, and college entrance requirements. Students who demonstrate that they are already prepared for college will instead be encouraged to take college-credit courses, through existing College Now partnerships, with a focus on courses that align explicitly with CUNY's new general education Common Core.

CUNY and Community Based Organizations Support

CUNY will also work with several Community Based Organizations (CBOs) to support those organizations' college success initiatives. There are many CBO programs that build on a foundation of effective strategies in youth development to help young New Yorkers transition to college. The CUNY team will help these organizations build their capacity to support students more effectively through the college admissions and enrollment processes, including helping these students understand what college readiness is in order to maximize college access and retention efforts. CUNY will also provide pertinent data and expert analysis of students' academic progress through CUNY, and will facilitate conversations around these reports so that CBO staff can develop a better understanding of how to use the data to inform programming and practices.

Early College High Schools

CUNY's network of 12 early college schools represents another type of partnership with the DOE that helps students enter and complete college. These schools offer a carefully integrated curriculum that allows students to graduate from high school having earned one to two years of transferable college credit. Early results suggest that these schools are effective in supporting students who have been historically underrepresented in higher education. For example, in 2011, 95 percent of the students at Hostos-Lincoln Academy in the South Bronx graduated on time, and 40 percent earned both an associate degree and their high school diploma. Approximately 45 percent of these students entered ninth grade below grade-level proficiency in English and math, and roughly 45 percent were English language learners. The newest early college school, P-TECH, emphasizes both college and career readiness through closer alignment with industry and higher education. It is the result of a partnership among the NYC DOE, CUNY's New York City College of Technology, and IBM. Focused on computer science, P-TECH students will have opportunities to explore various careers through internships and mentoring provided by IBM and other New York companies. Graduates will be first in line for jobs at IBM.

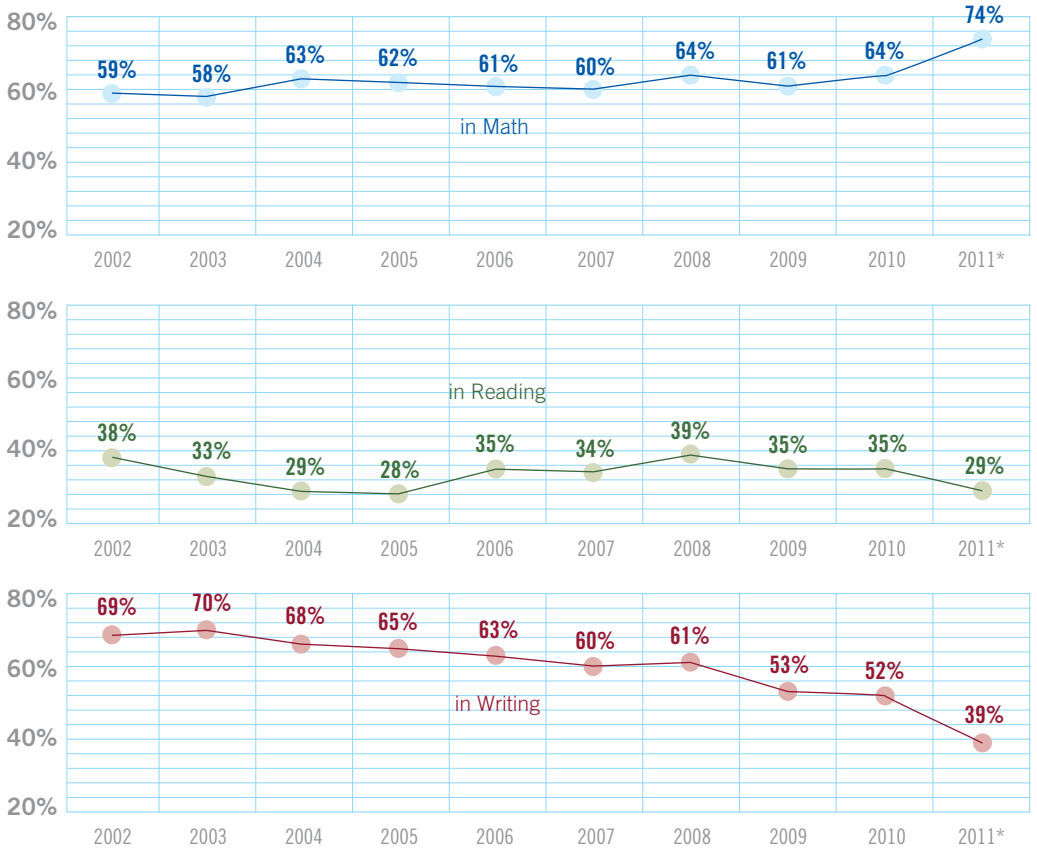
CUNY has agreed to work with the DOE on three additional 9-14 College and Career schools. The first will open in September 2013 and the others will follow in 2014. Each school will have an industry partner. The health care industry is being considered for the school opening in 2013.

Developmental Education and Remediation

In addition to there being an increase at CUNY of the numbers of students with excellent preparation, there has also been an increase in the numbers of students with very weak preparation. Approximately 80 percent of the students who enter community colleges require remediation in at least one subject, and there are significant numbers (19 percent of all first-time freshmen at the community colleges in fall 2011) of "triple-remedial" students (students who need remediation in all three areas of reading, writing, and mathematics).

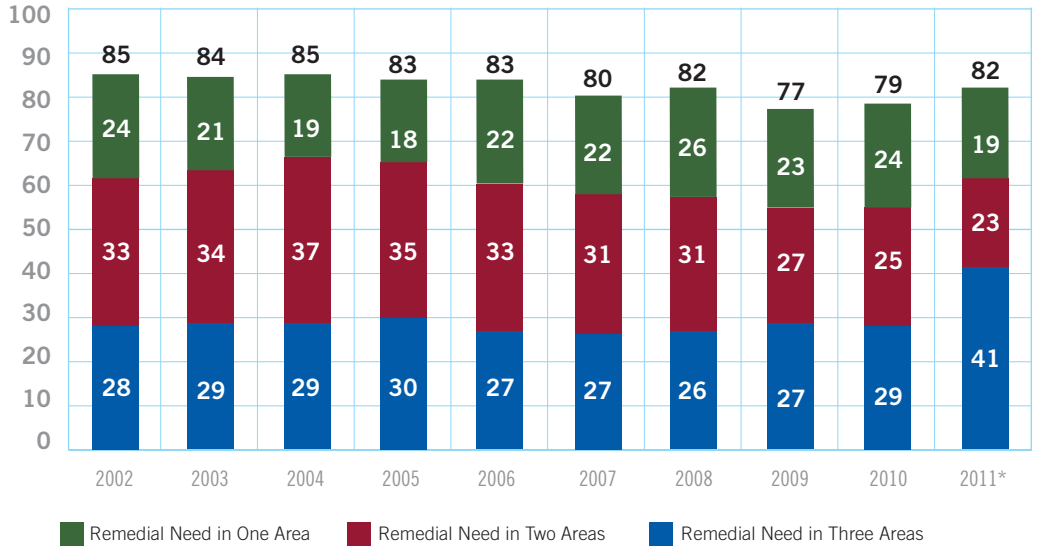
There is no question that the high numbers of students needing remediation is tied to CUNY's, and other urban community colleges' low graduation rates. Just one-quarter of CUNY community college students who need at least one remedial course graduate with any sort of a college degree within six years. Less than 10% of triple remedial students do so. Too often students become mired in what a recent report of Complete College America called the "Bermuda Triangle" of higher education, that is, remedial classes.

Percentage of First-time Freshmen Entering Community College with a Remedial Need



* In Fall 2011, the minimum math score needed to avoid remediation was increased.
Fall 2011 data is preliminary

Percentage of First-time Freshmen Entering Community College with a Remedial Need



* In Fall 2011, the minimum math score needed to avoid remediation was increased.
Fall 2011 data is preliminary

As this population has surged, it has become clear that the principles of access and opportunity are meaningful only when they are tied to another key concept: college completion. To that end, CUNY has broadened efforts to find new ways to provide support and special programming for remedial students.

CUNY Start

CUNY Start is an intensive immersion program that began in 2007, as a pilot, to provide a bridge to college for students enrolling with a GED diploma. By fall 2011, it had expanded to all six CUNY community colleges and the College of Staten Island with a total annual enrollment of 1,200.

CUNY Start offers underprepared high school graduates, prior to matriculation, intensive preparation in academic reading, writing, mathematics, and college success skills. These students have a high school or GED diploma, but their CUNY Assessment Test scores indicate the need for significant remediation. The program seeks to have students complete their remediation as quickly and effectively as possible, and to foster higher levels of persistence and graduation once students start their degree programs.

Similar to a decades-long successful CUNY program for English language immersion, CUNY Start students are admitted to CUNY, but defer matriculation in order to enroll in intensive non-credit instruction. They pay only a $75 student fee, allowing them to reserve their financial aid allocations for credit-bearing coursework leading to graduation. Instruction in the program is very intensive—25 hours a week in the full-time program and 12 hours a week in the part-time program. The curricula have been developed by instructional experts, and the teachers are trained in effective teaching practices. As part of the program, advisers teach weekly college-success seminars and provide individual support to students, and work closely with college financial, academic, and student support offices to help students make a smooth transition into degree program studies.

Results to date have been quite strong in terms of student gains on the CUNY Assessment Tests. Most participants make enough progress to pass at least one CUNY Assessment Test, and many completely test out of remediation (during CUNY Start's first two years, 66 percent of students completing the full-time program tested as fully exempt from required remediation by the end of one semester). Those who do not gain exemption nevertheless make gains that result in significantly reduced remedial needs. Outcome data from the part-time program are similarly strong.

A rigorous assessment of CUNY Start will be conducted, starting in summer 2012, and will encompass: (1) studies to see how the performance of program participants compares with that of students in other developmental education interventions, and (2) longitudinal studies to examine whether or not program graduates' improvements on CUNY Assessment Tests translate into improved retention and greater likelihood of timely degree completion. If initial results are maintained, the program could become a primary path into the University for students with significant developmental needs. Currently, more than 80 percent of the students entering CUNY's community colleges have some developmental need, and the University can only realize its mission if it finds ways to effectively prepare them for college work. CUNY Start offers a promising approach that helps students enhance their academic skills before taking on the challenge of college classes.

Additional Strategies for Students with Remedial Needs

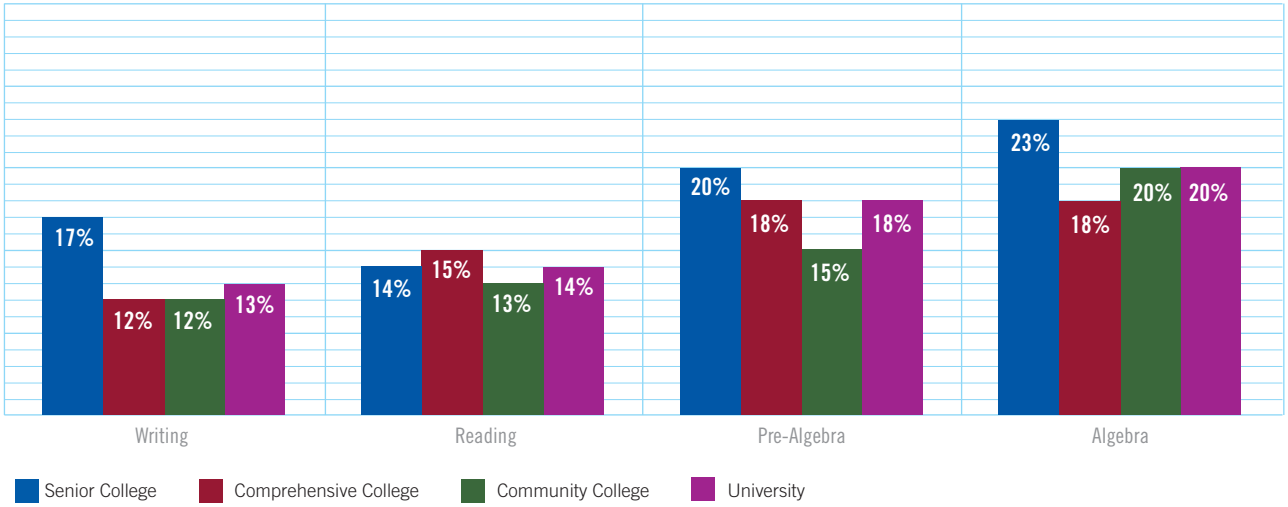
Over the next four years, CUNY plans to enact the following additional, evidence-based changes to support increased success for students who need remediation:

- Increase student participation in summer and winter immersion classes for enrolled students. Design a communication campaign to educate students on the advantages of enrolling in immersion and consider requiring students to do so. Identify immersion models that are particularly effective. Develop a more systemic approach to recruitment for immersion programs.
- Revise University policies to better align with what is known about what works in developmental education. Require students who have remedial needs at the beginning of their first semester to take remedial instruction that term and to progress through their remedial course sequence continuously until they exit, with the goal of completing all reading, writing, and mathematics remediation in the first year. Enforce this policy with registration stops.
- Allow flexibility in the placement of students in college-level courses for those who score just below the cut score. Implement one or more pilots to mainstream those students and, if data are available, evaluate similar pilots undertaken at CUNY colleges in recent years.
- Train staff at community and comprehensive colleges to better understand the full range of available remedial and college transition programs and which students may be best served by each of those programs, so that staff are better able to communicate with students regarding those options.

Other recommendations will be studied as well. These include recommendations to: streamline remedial sequences; expand the use of academic technology to supplement developmental skills classroom instruction and train faculty in using these technologies; disseminate information about and support

Remediation

Average Percentage Increase in Basic Skills Test Scores after Summer Immersion
Fall 2010



Percentages are based on admitted first-time freshmen who did not meet the basic skills requirement on their initial test attempts and subsequently re-tested during the summer. Percentages were derived by taking the change in test score (pre-and post-immersion) divided by the possible number of points on each test. The numerator is the average difference between each student's initial test score and his/her last test score prior to the fall term. The denominator is the maximum number of points that can be earned on each test (10 possible points on the writing test based on a scale of 2-12, and 100 possible points on each of the other tests based on scales of 0-100).

pilots in contextualized learning in reading, writing, and mathematics; and consider ways to scale up models of intrusive advisement in a cost-effective manner. CUNY will also continue to examine closely the evidence regarding increases in student learning resulting from the course redesign strategies promoted by the National Center for Academic Transformation (NCAT), and will continue to consider using these strategies deemed successful.

Improving the results of remedial instruction is central to raising graduation rates. As Bronx Community College wrote, "We have been and will continue to explore and support interventions designed to help developmental students complete their non-credit course sequences more quickly, and to determine how such interventions can be brought to scale while retaining their effectiveness." CUNY, as a system, is ideally positioned to chart new directions in developmental education.

English as a Second Language (ESL)

In addition to remedial instruction, CUNY is a leader in serving students with English language needs. Of the roughly 230,000 CUNY undergraduates enrolled in fall 2011, 44 percent spoke a native language other than English. Another 14 percent of CUNY undergraduates report that their families speak a language other than English at home. This means that roughly half of CUNY undergraduates speak a language other than English, with their linguistic diversity encompassing 193 different languages.

CUNY will continue to ensure that offering a wide variety of options to English Language Learners is a priority. Programs include full-time courses, one-on-one tutorials, laboratories, as well as services tailored specifically for adult learners at all levels. In particular, the CUNY Language Immersion Program (CLIP) provides full-time immersion for first-time freshmen with English language needs who have not passed their ACT Reading and/or Writing Skills Tests. Upon completion of study in CLIP, students return to their home campuses for placement into college-level courses.

SEEK and CD

SEEK (Search for Education, Elevation, and Knowledge) and CD (College Discovery) are the two City University long-standing higher education opportunity programs designed to assist high-potential, low-income students who otherwise might not be able to pursue a college degree because they are not academically well prepared. In July 2011, SEEK was renamed the Percy Ellis Sutton SEEK Program. This change memorializes the contributions of Percy Sutton, who led the New York State legislative delegation that drafted the law creating the SEEK Program in 1966.

SEEK and CD will continue to serve as venues for piloting best practices and demonstrating successful collaborative efforts between academic departments and student support services divisions. CUNY is committed to integrating and sharing the benefits of SEEK and CD innovations in instruction, counseling, academic support, student leadership development, advocacy, and professional development within and without the larger CUNY community.

SEEK and CD professionals have become increasingly aware, when establishing admission profiles, of the need to consider the programs' limited budgets and their mission to provide access to students who truly need services. The newly convened SEEK/CD Enrollment Management Task Force is charged with recommending enrollment and budgeting models. The recommendations are expected to be comprehensive and to mark a major departure from previous practice. Under discussion are areas such as transfer, reallocating freshmen, pre-college credits, and financial-aid award components.

A newly constituted assessment committee will develop and implement a program-wide assessment plan that establishes standard metrics of effectiveness for SEEK and CD including effectiveness of out-of-class activities such as counseling, tutoring, and co-curricular activities. The data will provide objective evidence that will be used to improve outcomes in SEEK and CD programs. Additionally, during the period of this Master Plan, CUNY will develop standardized electronic formats for various reports and will explore database management systems that all campus programs might use in their counseling and academic support components. CUNY will also investigate new ways to use technology (e.g., instructional software, diagnostic instruments, and electronic inventories) to deliver support services.

CUNY will also continue to convene two signature biennial conferences for SEEK and CD, "Sharing What Works" and "Tutor Talk," and will expand participation. Additionally, recognizing that merely earning a degree is not sufficient to guarantee student success, the SEEK and CD programs have increasingly been expanding initiatives designed to improve students' soft skills. Coursework is being supplemented with co-curricular activities such as internships, community service, community reads, and study abroad. Ongoing professional development activities, including an increase in support of program professionals who present at regional and national conferences, will help staff envision and promote such programs.

CUNY is in the process of organizing a CUNY-wide SEEK/CD student organization, an initiative that could potentially embrace thousands of students. By 2016, this organization will energize and mobilize SEEK and CD students who are passionate about their studies and their historic roles as members of the nation's first higher education opportunity programs, created when local and state civil rights agendas were being enacted. Members of the organization will have the opportunity to interact with SEEK and CD students from all of

CUNY's undergraduate colleges. They will learn how to be effective leaders at their campuses and in their communities, engage in advocacy at the city and state levels, expand their social and educational networking, and discover ways to contribute to and preserve opportunity programs in CUNY and in the city and state.

Funding for SEEK and CD is a constant issue that requires student and staff lobbying efforts as well as administrative negotiations and planning. During the next four years SEEK and CD administrators will explore external funding sources to augment present city and state funding to increase the monies available for resources and student services.

In sum, despite the development of innovative practices in both SEEK and CD over the years, there remains a need for better services, more resources, and continued creation of initiatives aimed at improving student performance, retention, and graduation rates. Access and opportunity for a college education continue to be challenges that thousands of academically and economically disadvantaged youth experience.

The CUNY Black Male Initiative Institute

CUNY has a public responsibility to provide leadership concerning the challenges facing African American/black males within higher education and to raise its voice vigorously to help mobilize efforts to achieve social and educational equity for this group. The CUNY Black Male Initiative (BMI) was established in academic year 2005-2006 after a task force, created by Chancellor Goldstein, issued a report and recommendations. Although the resulting entity focuses on underrepresented populations in higher education, BMI's extensive programs are open to students regardless of race or gender.

The initiative has been expanding and refining its programming since its inception and today includes projects on every CUNY campus, from mentoring programs to career workshops. Looking ahead, the BMI will continue to foster the participation and success of students from severely underrepresented populations in higher education in concert with the University's priorities. This includes targeting specific areas of need through CUNY-wide initiatives that address college readiness, higher education reentry, teacher education, and graduate education. The BMI's annual conferences reflect that focus; its most recent conference addressed the need to connect African American and Latino students to graduate and professional school opportunities. The BMI will build on these efforts to strengthen the pipeline to college and to professional and personal advancement.

One of the 2005-06 task force's recommendations was that "[t]he University should establish an Institute for the Achievement of Educational and Social Equity for Black Males to ensure that the University's intellectual and organizational resources are marshaled to address the issues that this Task Force has been investigating." In his testimony to the New York City Council Finance and Higher Education Committee on the 2012 City Executive Budget, Chancellor Goldstein returned to this recommendation. He has called for the development of a proposal for a BMI Institute focused on advanced research. This institute would elevate the work of the BMI to a national level. In the next year, the University will seek funding to support the BMI Institute, including funding for fellowships for researchers or CUNY graduate students completing doctoral dissertations that address issues of equal educational opportunity as well as those issues of race, ethnicity, and diversity as they relate to education, particularly higher education.

THE MISSION PART FOUR:
The University Must Remain Responsive to the Needs of its Urban Setting

"The university must remain responsive to the needs of its urban setting," states Section 6201 of the New York State Education Law. Shortly thereafter, the law reiterates: "Only the strongest commitment to the special needs of an urban constituency justifies the legislature's support of an independent and unique structure." This section of the Master Plan focuses on the myriad ways in which the University remains steadfastly responsive to the needs of its urban setting and urban constituency, while simultaneously fueling New York's social and economic engines in ways that were undoubtedly not envisaged when the law was drafted in 1961. Indeed, if New York City is at the beating heart of the state's economic development, CUNY provides the sustaining muscle and lifeblood.

The importance of New York City to the health of New York State has been clearly expressed in the New York City Economic Development Council's Strategic Plan (co-chaired by CUNY Chancellor Matthew Goldstein), which described New York City as "the state's primary economic engine." However, the city faces significant challenges, with one-fifth of its residents living below the federal poverty line. "This, along with aging infrastructure, a shortage of affordable housing and continuing challenges in public education, generates outsized demands on the local tax base, which are exacerbated by reductions in state and federal aid. As a result, New York is among the most heavily taxed cities in America." Add to this the pressure of increasing global competition, and it isn't difficult to see another layer of challenge facing the portion of the city's population that is "unprepared to participate in the modern workforce and, therefore, chronically unemployed or earning less than required to enjoy a reasonable standard of living." In meeting this challenge, CUNY is essential.

The New York City Regional Council's Strategic Plan is based on four key pillars: improving quality of life; creating a pro-growth, pro-jobs environment; investing in the future; and fostering innovation and inter-regional cooperation. These pillars depend on prominent industries and large institutions—including CUNY—to build on the city's multiple strengths, "while ensuring that economically distressed communities and populations have greater opportunities to participate in the benefits of that growth." That message resounds throughout this section of the CUNY Master Plan.[9]

[9] New York City Regional Economic Development Council, Strategic Plan, 2011. Available at http://nyworks.ny.gov/themes/nyopenrc/rc-files/nyc/REDECFINALNYC.pdf

Workforce Development

During the period of this Master Plan, the community colleges of CUNY will continue to play a leadership role in local economic development efforts through delivery of workforce training programs. For example, given that the tourism industry is a principal driver of the local New York City economy, Kingsborough Community College has been engaged in a number of workforce development programs to prepare both youth and unemployed adults with the skills needed to enter this industry and/or improve their current positions. With a $1M Community Development grant from the U.S. Department of Labor, Kingsborough trained and placed several hundred individuals across New York City for entry-level jobs in restaurants, hotels, and other customer service positions. This is just one example of the extensive work being accomplished by the community colleges of CUNY in the area of workforce development.

However, to view these programs as merely short-term training is to ignore their impact and continued potential to serve as yet another access point for individuals who wish to pursue further education. CUNY has been a leader in developing training programs that accrue "banked credit" for those who participate. This means that should a student wish to pursue a degree upon successful completion of the training, he/she would be awarded a designated number of credits toward his/her degree. Faculty have worked hard to develop these bridges from non-credit to credit programs, which have served as a powerful motivator for youth and adults alike who might never have envisioned that they could pursue higher education. This "bridge model" is now being adopted by other community colleges across the country.

The CUNY Jobs Task Force

The University has always supported continuous assessment and updating of curricula to reflect current practices in the field, and the development of new programs and majors in emerging and evolving areas. Currently and moving forward, these objectives are being furthered by initiatives such as the CUNY Jobs Task Force, appointed by Chancellor Goldstein.

This task force has been surveying employers in five industries important to New York City, in order to better understand local labor market trends. This work is grounded in investigation of the following key questions:

- What current jobs requiring a college degree are difficult to fill? What are the jobs and skills of the future that require a college degree?
- How can CUNY and other institutions of higher education better prepare students for the labor market today and in the future?

The Task Force finished its preliminary report in April 2012. Research indicated that employers are looking for the following skills among entry-level workers with college degrees:

- An appropriate balance between deep, specific skills and general knowledge referred to as "T-shaped skills"—i.e., immersion in one field and broad knowledge across fields
- Creativity and curiosity and a broad understanding of the world that is often obtained from a well-rounded liberal education

- Written and oral communication skills; that is, the ability to effectively articulate and present ideas
- Analytical skills, namely the ability to arrange, understand, assess, and interpret increasing amounts of data
- Business process skills, including project management, process management, and client management
- Learning agility and flexibility, such as the ability to change course and learn on the job
- Cultural competence, namely the ability to serve a diverse customer base in the United States and abroad
- Previous exposure to work

The Task Force presented a range of recommendations, both those specific to certain industries and the following broad recommendations, to CUNY colleges and other institutions of higher education:

- Build deeper and more meaningful relationships with industry, including finding ways to invite and use industry input, from student internships to faculty/staff site swapping, and make it easier for industry to access CUNY;
- Provide career guidance by assisting students in exploring their interests and aptitudes, as well as career pathways, and by providing job search skills training;
- Facilitate work experience before graduation by arranging internships and summer employment opportunities; and
- Simulate workplace conditions that will help students acquire business skills.

The immediate next step of the Task Force will be to gather comprehensive information about existing activities and practices at the CUNY colleges.

Center for Innovation and Entrepreneurship

As noted earlier in this plan, during the Decade of Science CUNY has built significant capacity in research, especially in science and engineering, positioning the University as a major regional resource for economic development. During the period of this Master Plan, the University will expand on its burgeoning entrepreneurialism and increasing number of collaborations with business and industry through the establishment of a CUNY Center for Innovation and Entrepreneurship. The University has received $2 million in capital funds from the New York City Council for this initiative.

This center will encourage the development and commercialization of novel and cutting-edge research. It will fast-track new technologies from the laboratory into the marketplace. Training will be provided to assist faculty inventors in a variety of areas including developing business plans, performing market research, launching spinoff companies, and applying for Small Business Innovation Research and Small Business Technology Transfer grants.

The entire University will benefit from a flourishing culture of entrepreneurship. Faculty involvement

in applied research with ties to industry will receive increased research funding from private companies, and there will be greater involvement, donations, and investment by alumni in the University. Recruitment of top-notch faculty will become easier as productive researchers, who are interested in commercializing their inventions, will be attracted to CUNY. University-industry collaboration will also encourage the creation of startup companies that will both generate a new source of revenue for CUNY and have a positive impact on local economies. Faculty working with private companies will be able revitalize career-oriented graduate programs and contribute to the development of new professional programs. Opportunities for student involvement in internship and research programs in the private sector will increase, thus enhancing CUNY's ability to expand career prospects for its graduates, and consequently increasing student recruitment and retention.

In its initial phase, the core function of the center will be as a business incubator for CUNY faculty—offering its tenants a physical infrastructure, professional mentorship, opportunities for collaboration, and a host of supportive and administrative services. The Center will have a CUNY-wide scope and will embrace entrepreneurship in science and engineering as well as in non-science based companies. The Center will initially occupy approximately 6,000-10,000 square feet at an external commercial site, and is expected to house between 15-25 companies when fully operational.

This Center will integrate several existing University-wide services that facilitate entrepreneurship, including technology transfer, intellectual property, and legal assistance, as well as research administration. The CUNY Technology Commercialization Office will provide direct support on issues related to technology transfer, agreements and contracts, and licensing to Center tenant companies. Such integration of different functional domains is vital for creating an effective system capable of expediting legal and financial transactions with investors, companies and the business community.

This initiative recognizes the need to establish a CUNY Innovation and Entrepreneurship Fund. This fund will be used to attract external financial support for CUNY's efforts in generating, sponsoring, and/or incubating companies. Such a fund would provide an excellent mechanism for creating and developing interest among alumni and other private investors. CUNY will leverage internal resources to set up this fund and help raise external resources.

CUNY's strength has always been in the talent and expertise of its faculty. In scaling up innovation and entrepreneurship, CUNY will be broadening the University's rich tradition of research that benefits the colleges and the University, as well as the local and state economies.

Educating Teachers and Early Childhood Educators for New York

As is well known, CUNY occupies a historic place as a training-ground for New York's teachers. Currently, pressing questions are being raised on the quality of teacher education programs across the nation. These challenges have been largely fueled by two issues: (1) persistent achievement gaps (disparities in performance on achievement measures) across white and black students, wealthy and poor students, and U.S. versus non-U.S. students (in terms of international comparisons); and (2) the fact that a large percentage of students graduate from high school unprepared to do college-level work.

In New York State, the Regents have initiated education reform on many fronts, and CUNY has participated in several reform efforts. For example, CUNY participated in the committee to revise the New York State Teaching Standards. Also, CUNY participated in the task force that the Regents have established to recommend the new process for evaluating in-service teachers and principals. Further, the New York State Education Department (NYSED) is providing CUNY with a multimillion dollar award to lead faculty professional development efforts (for University faculty) at CUNY and at private universities in New York City in the areas of the Regents Reform agenda.

The New York Regents Reform Agenda also includes changes in teacher certification requirements and tests. To meet these changes and to ensure that CUNY education schools and departments continue to prepare high-quality teachers, during the period of this Master Plan, CUNY will place added emphasis in teacher preparation in four areas:

- Enhancement of preparation of teacher education students related to their clinical skills in the classroom;
- Enhancement of preparation of teacher education students related to understanding and managing data on K-12 student learning and using such data to drive instruction of K-12 students;
- Enhancement of preparation of teacher education students relating to teaching diverse learners, including English Language Learners, students with disabilities, and racial and ethnic minority students;
- Integration of the national Common Core State Standards (CCSS) of K-12 student learning into candidate preparation, particularly related to the preparation of mathematics and English teachers. This will require collaboration with college departments beyond teacher education, e.g., mathematics, social studies, English, etc.

Moreover, CUNY will be taking significant steps to increase evidence-based teacher preparation. CUNY will embark on an analysis, unprecedented in scale, of the performance of its teacher education graduates. In 2011, CUNY amended its data sharing agreement with the NYCDOE (wherein student performance data is exchanged between the two systems) to include DOE transfer of teacher performance data to CUNY. Data for graduates from CUNY's teacher education programs teaching in the city school system, from 2005 onward (and comparison data on non-CUNY teacher education graduates), will be transferred to CUNY. These data will include information on retention of teachers, placement in high-need schools, and value-added scores. Value-added scores estimate the impact of a teacher on student learning and achievement by statistically controlling for the effect of all other variables and looking at the test scores of the teacher's students. Each student's past test performance is used to project the student's performance in the future. The difference between the child's actual and projected results is the estimated "value" that the teacher added or subtracted during the year.

This DOE database on teachers will be brought together with CUNY's data on these same persons when they were CUNY students. Analyses will then be conducted, e.g., on the relationships among teacher candidate characteristics, teacher education program features, and job performance. Informa-

tion from this database will be examined, for example, to see if there are program features that correlate with high performance elementary or secondary school teaching and, when such features are found, they will be expanded across the system. In contrast, program features related to less effective teaching will be eliminated or modified. During this Master Plan period, CUNY will also be enhancing its partnership relationships related to teacher preparation:

- For approximately 12 years, CUNY and the Lincoln Center Institute (LCI) have enjoyed a collaboration in which CUNY teacher preparation candidates receive LCI resources to be prepared in arts education and in development of high-level cognitive-imaginative capacities. The goal is that, when these students become teachers, they will develop these cognitive capacities in their own students. Throughout this 12-year period there has been little data on the efficacy of the program. Consistent with CUNY's move to more evidence-based teacher preparation, funding has been transformed from simple program support to a more strategic use of program resources involving assessment of the efficacy of program practices on teacher education candidates.
- CUNY is now the exclusive partner of Math for America (MfA) in New York City. This is a comprehensive partnership agreement that will enhance the quality of teacher preparation at CUNY in several ways. The benefits to teacher preparation at CUNY include having academically outstanding fellows receive their master's degrees at CUNY in a newly designed, state-of-the-art program, securing their service in city schools for several years, and provision of induction experiences to CUNY graduates teaching mathematics in NYC schools. This partnership provides MfA and CUNY with the opportunity to lead the national discussion on implementation of best practices in teacher preparation and professional development for mathematics education.
- Through collaboration with the Mayor's Office, CUNY created a TV series called "We Are New York," designed to teach English to immigrant adults as they learn about city services through volunteer-led conversation groups. The series was awarded two Emmys. It has been on Channel 25 and cable outlets for two years and is available online with corresponding sets of instructional materials. This volunteer effort has involved CUNY students via community service and internship requirements, and has provided these students with a better understanding of the immigrant New Yorkers they will be serving when they become social workers or other human services professionals. Given that it is important that teachers-in-training also learn about city services and the perspectives of the immigrant parents of their students, CUNY is working with the Mayor's Office to devise ways, through practica or internships, to involve CUNY education students in this work as well.

In the area of developing the workforce that relates to education, the Early Childhood Professional Development Institute (PDI) is a public/private partnership that brings together a range of city and state agencies, a consortium of private funders, and CUNY to build a comprehensive system of workforce development for individuals who work with young children in New York. The PDI works at the University, city, and state levels to support the workforce development of all early childhood educators in New York to ensure a comprehensive and exemplary early childhood system. The PDI just received approval from the State Education Department to establish the city's only credit-bearing Child Development

Associate (CDA) credential and will now begin teaching the courses and move to increase the number of CDAs earned by assistant teachers in Head Start programs and other early childhood centers. This will enable individuals to move into compliance with federal regulations and provide the college-based foundation for individuals who can then build their careers and advance through the system.

The PDI has been responsible for building and operating the workforce development system for the state now known as New York Works for Children. Components include a competency-based Core Body of Knowledge, Early Learning Guidelines, and a statewide workforce registry. PDI will launch New York Works for Children in the next year and continue to establish it over the next five years. For the first time, the city and state (and higher education) will have systems that are able to track and analyze the early-childhood workforce. This ability will enable the field to introduce higher expectations, more effective teacher preparation and professional development, and assess accountability. It will also contribute essential data to inform the improvement of current public policy and the development of new policy.

Health Care

Health care employment is a leading economic engine in New York. In 2009, employment in this sector constituted nearly 12 percent of all employment in the state. In New York City alone, there are more than 420,000 health sector jobs, including about 365,000 in the private sector and 55,000 in the public sector.

Each year, through its network of over 150 degree programs in the health professions, CUNY prepares a large pool of highly qualified, culturally diverse personnel who are dedicated to providing quality health care services to all New Yorkers. Thirteen CUNY colleges offer nursing programs with degrees ranging from the Licensed Practical Nursing certificate through the Doctor of Nursing Science and the Doctor of Nursing Practice degrees. CUNY colleges also offer programs in environmental health, biomedical science, chemical dependency counseling, community health and urban public health, dental hygiene, exercise science, health care administration, health education, health information technology, occupational therapy, and physical therapy, as well as other health professions such as respiratory therapy, radiologic technology, surgical technology, and a host of others. Indeed, the health care industry relies heavily on CUNY to provide the workforce it needs.

The health care industry is going through enormous change. Passage of federal health reform legislation and implementation of New York's Medicaid Redesign plan are accelerating changes in the health care delivery system. Changes expected between 2012 and 2016 include:

- A trend toward community-based services;
- Care coordination among multiple providers and transitions across care settings;
- A multi-disciplinary team approach;
- Incorporation of technologies such as electronic health records.

The future health care delivery system will thus be more focused on primary and preventive care, with a greater emphasis on effective management of chronic diseases. The success of all of these reforms will ultimately depend on the adequacy of the workforce.

These and other workforce changes will impact the education of health care professionals across the University. A major priority from 2012-2016 will be to align the health professions programs with federal and state health care legislation and with recommended reforms. Nursing provides a good example of what is being done and what must be done.

Nursing

Registered Nurses (RNs) are the single largest occupation in the health sector, constituting 18 percent of all jobs in the industry. However, spending cuts resulting from the economic downturn plus recent hospital closings, mergers, downsizings, and hiring freezes have made the local job market more competitive for new nurse graduates. It is difficult to anticipate precisely how these patterns may shift by 2016. However, because of the current circumstances and the new emphasis on community-based services, the University has become more active in implementing "transition-to-practice" programs that facilitate the re-deployment of new AAS nurses to expanding health sectors in community-based settings.

Recent national reports and changes in personnel practices reflect a strong preference for a more highly educated nursing workforce. There is a broad consensus among nursing faculty, nursing professionals, and many employers that the BS in nursing is preferred over the AAS degree. In 2009, the Carnegie Foundation recommended the baccalaureate degree as the appropriate credential for RNs entering the profession. The 2011 Institute of Medicine (IOM) report recommended an increase in the proportion of nurses with a baccalaureate degree to 80 percent by 2020. CUNY currently has nine AAS degree programs and six baccalaureate programs. To align CUNY's nursing programs with current trends, the University is working to increase its capacity at the baccalaureate level. CUNY is already experiencing a dramatic surge in enrollment in RN to BS programs. The annual number of graduates from these completion programs has increased 145 percent in the last four years. For the reasons cited above, this trend is likely to continue during 2012-2016, and CUNY will continue to encourage students to pursue more advanced (baccalaureate) study.

There are several models for providing a seamless transition from the AAS to the BS in nursing within an integrated university such as CUNY. One is the dual-enrollment/dual-degree program that was approved last year between Queensborough Community College and Hunter College, and which enrolled its first cohort this year. Hostos, Bronx, and LaGuardia Community Colleges are partnering with Lehman College to develop similar programs. New York City College of Technology, Staten Island, and Kingsborough are collaborating on another model, a "1-2-1" dual degree option in which nursing students earn their AAS in three years and their BS degree at the end of the fourth year. These models that directly link AAS and BS degrees in nursing will continue to be developed through 2016 and beyond. By 2016 there will be about 400 nursing students enrolled in these types of collaborative, career-ladder programs.

Another IOM recommendation is to double the number of nurses with a doctorate by 2020. CUNY's Doctor of Nursing Science (DNS) program, which is a research-oriented degree, is a critical component in the effort to increase CUNY's capacity at the BS level by growing CUNY's own nurse educators. The DNS program has essentially reached its capacity (about 55 students enrolled each year) and will maintain that enrollment. Recently CUNY received approval for a new Doctor of Nursing Practice (DNP) program

at Hunter College. Hunter recruited its first DNP cohort this semester, and new DPN degrees are being developed by Lehman and Staten Island. In the next four years, about 175 students each year are expected to enroll in doctoral degree programs in nursing at CUNY.

To improve students' clinical competencies, another major priority in preparation for work in the health care professions, CUNY is developing state-of-the-art Dedicated Educational Units (DEU) at several affiliated hospitals. In a DEU, a unit of the hospital is transformed into a dedicated learning environment, with hospital personnel brought into the education team to help design the program. DEUs are expensive—they require a high teacher-to-student ratio—but they represent the pinnacle of affiliation between a provider and a college. Currently, CUNY has a DEU partnership with Long Island Jewish Medical Center a hospital growing in size and importance. CUNY is negotiating a similar partnership between Hunter and Lenox Hill Hospital. CUNY will also be considering a possible partnership between York and Forest Hills hospital. The goal is to establish DEUs throughout the CUNY system at the rate of one new DEU a year through 2016.

Technology in Health Care Education

Health care programs provide additional opportunities to take advantage of new academic technologies. The use of electronic health records is now being integrated into many of CUNY's health care programs. As hospitals and doctors move toward use of electronic health records, CUNY graduates in 2016 will be well qualified to step into interesting, well-paying jobs.

CUNY is developing an online nursing completion program to be housed in the School of Professional Studies. In addition, campuses are being encouraged to develop online BS nursing completion programs for incumbent workers whose schedules make it difficult to attend classes. This is an effective strategy for incumbent workers because the students have already done most of the clinical work. These online programs save classroom space and at the same time provide access to CUNY for groups of students who might not otherwise be able to complete the baccalaureate degree in nursing. These programs will also allow the University to continue its growth over the period of this plan in a field that is critically important to New York City.

Simulation labs are transforming nursing education and education in other health professions. They prepare students for a complex clinical environment, which often calls for split-second decisions, by allowing them to practice with simulated patients in a nonthreatening environment. CUNY has developed simulation labs at all the campuses that offer nursing degrees, and is about to contract for a survey of these labs in order to develop recommendations about how they can be enhanced.

A new simulation center, the New York Simulation Center for the Health Sciences, said to be the most sophisticated facility of its kind in the United States, is an unprecedented collaboration between CUNY and the New York University Langone Medical Center. Participants in the simulations will include Langone medical students, BMCC nursing students, and students in programs for paramedics and respiration therapy. Such inter-professional education (training nurses, physicians, and other health professionals together) is progressive and significant because the ability to deliver team-based care will be fundamental to the new health care system (see also the subsequent Facilities section on Initiatives).

Other Priorities in Health Care Education 2012-2016

In the coming years of this Master Plan, CUNY will also:

- Support research activities by health professions students and faculty;
- Provide educational resources for needy students enrolled in health professions programs;
- Expand workforce research in the health and human services professions;
- Develop and expand initiatives to reduce health-risk factors on CUNY campuses; and
- Support global initiatives in the areas of health and social services; for example, developing service-learning activities in other parts of the world.

The CUNY School of Public Health (SPH) at Hunter College

The Master Plan 2008-2012, submitted in June 2008, stated that, "The University looks forward to opening its new School of Public Health." In September 2008, the Board of Trustees appointed Dr. Kenneth Olden, former head of the National Institute of Environmental Health Sciences, as Founding Dean of the new school. By spring 2010, CUNY had hired 18 new tenure-track faculty to teach in its public health programs, and by September 2011, the doctoral program in Public Health (established in 2007) had enrolled 99 students and appointed more than 35 faculty from across the university.

The SPH at Hunter College brings together several existing CUNY-accredited public health programs: MPH programs at Brooklyn and Lehman Colleges; BS, MS, and MPH programs at Hunter College, and the newly developed DPH program at Hunter and the Graduate Center. Four specialization areas are offered by the doctoral program: Community, Society and Health; Epidemiology; Environmental and Occupational Health; and Health Policy and Management.

This new collaborative school expands CUNY's capacity to prepare the diverse professional workforce needed to meet 21st-century challenges of public health, widens a pathway into public health for the many New Yorkers who cannot afford the tuition at New York's private public health-training programs, and serves an innovative interdisciplinary research and teaching mission. By integrating the resources of the previously independent programs in a single school, CUNY is better able to strategically invest its resources to develop a world-class public school of public health.

In its first decade, the SPH at Hunter College is focusing on four key themes that reflect the critical public health challenges that will guide its research, education, and service activities:

- Contribute to healthier, sustainable cities
- Promote healthy aging through the lifespan
- Prevent complex chronic diseases and improve their management
- Eliminate health disparities and advance health equity.

The school has made remarkable progress since its inception. In June 2011, the SPH moved into a new, 147,000-square-foot green building in East Harlem, with state-of-the-art teaching and research facilities.

SPH shares this building with the Silberman School of Social Work at Hunter College. This strategic co-location provides an excellent opportunity to integrate social and behavioral sciences with public health practice to address some of the most intractable health problems in socioeconomically disadvantaged communities like East Harlem. Indeed, the school has embraced the community and is deeply immersed in its concerns and activities via partnerships such as the East Harlem Assessment and Geographic Information Systems (GIS) Mapping Project, a unique prevention and health promotion program; and Eat, Sleep, Play, a health initiative that unites a team of faculty with expertise in obesity working with the Children's Museum of Manhattan to help children and families make simple changes in the areas of nutrition, sleep, and play to build positive lifelong habits. In these and countless other collaborations, the SPH at Hunter College aims to make a significant positive impact on the health and well-being of East Harlem within its first decade.

Other important indicators of the school's growth and maturation are its full, five-year accreditation, effective July 1, 2011, by the Council on Education for Public Health, and the amount of external awards that the SPH's faculty are securing for the school—more than one million dollars in grant support during the 2010-2011 academic year.

Over the next four years, SPH at Hunter College will establish its reputation as the top location for engaging in teaching, research and service to create a healthier New York City and promote effective, efficient, and equitable evidence-based solutions to pressing health problems facing urban populations around the world. To realize this mission, the SPH works with communities, nonprofit and private organizations and institutions and government at all levels to build the capacities that help people lead healthier and more productive lives. The ultimate goal of these activities is to improve the health of communities in New York City and beyond.

Continuing Education

Continuing education—particularly as it relates to workforce development—has always been a crucial component of the city's economy. CUNY's continuing education programs have also, historically, served as a conduit to higher educational attainment and professionalization: individuals may begin by taking a single non-credit course, complete additional coursework toward a certificate, and ultimately enter a degree program. Today's unforgiving economy has only reinforced the importance of lifelong learning—the pursuit of skills and knowledge needed to advance in the workplace. This development has highlighted the need for approaches to education that are relevant to changing demography, the marketplace, and new technologies. CUNY's non-degree programs—adult and continuing education and workforce development—have always been a home for such new initiatives. In Academic Year 2010-2011 they served more than 200,000 students. Although these programs are found on almost every CUNY campus, one of the newest is a product of the integrated university.

CUNY Career PATH (Preparation of Adults through Training and Higher Education)

In September 2011, CUNY received a landmark grant totaling nearly $20 million for a three-year project, Career PATH, to offer out-of-work adult New Yorkers and those who want to change or advance in their careers a new way to retool for today's job market. This grant, administered by the U.S. Department

of Labor in coordination with the U.S. Department of Education, is among 32 nationwide and the only one in New York State. The project is a cross-campus collaboration, with central administrative support, involving a consortium of six community colleges—Borough of Manhattan, Bronx, Hostos, Kingsborough, LaGuardia and Queensborough—and two comprehensive colleges, the College of Staten Island and New York City College of Technology.

Career PATH aims to strengthen connections among college transition programs, as well as among occupational training and degree programs, while building CUNY's capacity to recruit and serve adult learners. It will enhance opportunities, especially for nontraditional students, many with lower levels of preparation and others who are English Language Learners.

Ensuring Quality in Continuing Education

Consistent with the University's emphasis on a culture of assessment and accountability, CUNY is working to collect better data in order to analyze and improve the quality of Adult and Continuing Education (ACE) programs and services. A recent grant from the Ford Foundation is helping to move this initiative forward.

CUNY's central and campus staff are collecting information on the management of continuing education programs, as well as on program and student outcomes. These staff are also working with consultants and examining strategies at other universities across the country in order to develop a systemwide approach to data collection. This ACE Quality Initiative includes adoption of a program quality framework, implementation of program quality assessment strategies, implementation of a reporting process for colleges, and provision of support to campuses in their improvement efforts through technical assistance.

In 2012-2016, ACE will continue to develop the components of a system that, with the use of appropriate technology, will assess and improve workforce development and continuing education programs across the University. Such a system will increase the ability to track program outcomes for students; increase effectiveness and efficiency in the use of program resources; enhance ability to measure, analyze, and improve program operations; and enhance the ability to collaborate with community organizations, employers, and other organizations to support workforce development programs.

Service to the City and State

CUNY will continue to meet the needs of city and state government to improve the skills of employees and of individuals working for organizations under contract with governmental agencies to provide services to New Yorkers. The University will also continue to partner with the government to address vital public policy concerns and to improve the quality of services to New Yorkers. In addition to developing online and face-to-face degree and certificate programs, CUNY will continue to develop customized programs, credit-bearing and non-credit bearing, to meet the needs of employers and other organizations, including unions, government agencies, and nonprofits.

The Green Workforce

CUNY has been collaborating on the development of an energy management and indoor air-quality training initiative with the NYC Department of Citywide Administrative Services. The targets for this training have been facility professionals responsible for the management of 325 million square feet of

office space and other buildings in the city's real estate portfolio. The training provides these staff with the knowledge to recognize and address energy-related operations and maintenance needs in their buildings, while helping NYC meet its goal of reducing energy use and greenhouse gas emissions by 30 percent by 2017. Participants can earn an industry credential in running energy efficient buildings. Results have been excellent and agreements have been extended to reach additional classifications of building operators including electricians, thermostat repairers, and HVAC technicians. To date, CUNY has trained more than 750 facilities management personnel working in eight city agencies. So far this training has been face to face, but CUNY has been asked to help develop an online format that will result in a hybrid version in 2013. There is also a video in development on energy efficiency for building occupants.

Coastal Storm Plan Personnel Training Program

To prepare for the potential impact of a large coastal storm, the New York City Office of Emergency Management (OEM) has developed a Coastal Storm Plan (CSP). Key components of the plan are the establishment of evacuation centers and hurricane shelters to serve up to 600,000 residents who may seek public shelter in the event of a severe storm. CUNY has been involved in an ongoing collaboration with OEM to prepare the volunteers who will manage an evacuation and the shelters. CUNY has developed training materials and provided pre-incident training to orient volunteers and management to the plan in advance of the identification of a storm, and self-paced online training to thousands of volunteers for the jobs they will perform should a storm hit and evacuation be necessary. The first test of the training during Hurricane Irene in fall 2011 by all accounts was quite successful.

Going forward, CUNY will also continue to provide support to the Regional Catastrophic Training Consortium (New York, New Jersey, Connecticut) by developing materials used by the regional jurisdictions to train response teams on their roles and responsibilities in the event of an evacuation.

Other Initiatives

CUNY is engaged in a large variety of ongoing initiatives of specific benefit to the New York City region. These include the New York City Housing Authority (NYCHA) Executive Leadership Program, a seven-day, intensive professional-development program designed to provide NYCHA department directors with a unique opportunity to strengthen their skills and effectiveness; partnerships with the New York State Offices of Children and Family Services and of Temporary and Disability Assistance to provide distance learning and professional development for thousands of human services employees across New York State; and Citizenship Now!, which helps CUNY students and New York's immigrant community access higher education and improve their career opportunities by assisting them in the path to citizenship. Citizenship Now! has become a major force among immigration service providers in New York, doubling its capacity since the submission of the Master Plan for 2008-2012. Today it serves more than 11,500 individuals a year. In addition, the scope of its services has expanded beyond providing assistance with citizenship and immigration applications. Citizenship Now! has developed educational initiatives, including online seminars, to better prepare immigration professionals, as well as volunteers, to serve immigrants in New York. In 2012-2016 Citizenship Now! will:

- Increase the number of weekend mass citizenship assistance events from twice a month to three times a month;
- Hold mass citizenship application assistance events weekly at the CUNY express location in Washington Heights;
- Initiate and implement a fundraising effort seeking support from individuals and foundations; and,
- Increase citizenship application fee waiver services.

CUNY TV

CUNY TV, the University TV station, located at the CUNY Graduate Center, operates in a full HDTV environment. In November 2011, with a $4 million endowment from the Radio Drama Network, and the approval of the Chancellor and the CUNY Board of Trustees, the CUNY TV studios were named "The Himan Brown TV and Radio Studios at The City University of New York." Himan Brown, a founding member of the CUNY TV Advisory Board, was a pioneer of radio drama programming with such famous radio series creations as "The Thin Man," "CBS Mystery Theatre," "Dick Tracy," and "The Inner Sanctum."

CUNY TV is currently merging with WNYE-TV, channel 25, and WNYE radio, the stations of the Office of the Mayor of The City of New York. With this merger CUNY TV will receive its own digital broadcast channel (channel 25.3) and an HD radio station (91.5HD), both for exclusive use by the University. These channels will give University Relations and CUNY TV the ability to brand CUNY across the city and tristate region to more than 7.3 million households. CUNY TV will continue to operate cable channel 75 in the five boroughs of NYC, reaching an additional 1.7 million subscriber homes. This tremendous increase in audience base will greatly advantage CUNY TV in 2012-2016 in seeking foundation and corporate support and institutional sponsorships for its many projects.

The use of the new technology of HD radio will be developed at CUNY TV as a cost-effective delivery medium with content for new immigrant audiences with very specific needs and interests. Lifelong learning programs on citizenship, educational opportunities, and survival skills (banking, transportation, health, and wellness) will be developed in multiple languages for these populations. This initiative is tied to the new radio station that will be up and running in mid-2013 and that will begin with public service announcements. Cultural programs for various groups, in their own languages, will be acquired or produced at CUNY TV. Strategies will be developed for print and Web components to complement the radio content, produced in partnership with the many ethnic newspapers published in the city.

During the next five years, channel 25.3 will expand the branding of the University as a major academic resource to the city, state, region, and nation. CUNY TV will enhance its efforts to present "lifelong learning through quality television" with public affairs programs hosted by NPR's nationally acclaimed radio host Brian Lehrer. Other projects include a science magazine "Science & U," looking at science in daily life, a series of conversations with "Irish Writers in America," and "Working," a look at the people who work, their unions, and their future. Bill Moyers' new PBS series "Moyers and Company," is also being produced at CUNY TV. Finally, CUNY TV will, of course, continue to offer high-quality arts and cultural programs acquired from both national and international sources. External funding is being sought for these projects.

CUNY TV has received six regional Emmy Awards for its magazine series "Nueva York"—a weekly, half-hour program that presents arts, cultural, and public affairs content in Spanish (with English subtitles) to the Latino communities in the New York City. The series is carried on Mexican PBS and their Direct TV channel throughout North and Central America. CUNY TV has received a total of 28 Emmy nominations for its programs and has been recognized with several "Telly Awards" and "Communicator Awards."

Advanced Media Services

The University has emerged as a national leader for advanced media services in higher education. The explosion of new media platforms and opportunities for content distribution combined with the strategic development of related technologies have positioned the University website, www.cuny.edu, and the CUNY portal as the leading University communications platforms.

Together, this website and companion intranet now serve more than 2 million unique visitors per month with 10 million page views. They deliver rich media and other important communications to enhance and assist the University's core mission of teaching, research, and public service.

With this strong foundation, during the next four years, www.cuny.edu and the CUNY portal will expand production capabilities in support of every aspect of the University experience. These plans include collaborations with Academic Affairs to produce and distribute faculty lectures and other learning tools. Special focus will also be directed toward enhancing the student experience through partnerships with Student Affairs, Admissions Services, and Financial Aid. These programs will include tutorials and presentations on how to apply for scholarships, complete the Free Application for Federal Student Aid (FAFSA), find affordable housing, or prepare for finding a job. They will also include wayfinding videos targeted to veterans; international, undocumented, and transfer students; and other specialized groups of students.

The University's advanced media group will also seek opportunities for partnerships with the colleges, both in production and distribution. Reciprocal arrangements for effective deployment of this group's midtown digital editing, production, and webcasting facilities are planned. The new Advanced Media Group studio is scheduled to open in September 2012 in Times Square, and expanded arrangements with the colleges will move forward in 2013. The expanded production capabilities are tied to the opening of this new studio as well.

The Advanced Media Group will continue to innovate and share expertise on new and emerging distribution applications for social media, YouTube channels, iTunes University, HD radio, audio podcasting, and Wi-Fi broadcast networks. As new communications platforms and distribution technologies emerge in the four years ahead, the University will be well positioned through its advanced media services group and partners to nimbly deploy resources in support and enhancement of the University's core mission.

Sustainable CUNY: Structuring Change in New York City

As the nation's largest urban university, CUNY plays a transformational role in New York City's sustainable future. CUNY is dedicated to integrating sustainability into the University and the surrounding metropolitan area through its curriculum, policy work, research, capital projects, and workforce and economic development activities. CUNY is leading this transformation through the work of Sustainable

CUNY, a broad program composed of three key pillars: the CUNY Sustainability Project, citywide Sustainable Energy projects, and CUNY SustainableWorks.

CUNY Sustainability Project

In June 2007, Chancellor Goldstein accepted Mayor Bloomberg's PlaNYC "30 in 10" University Challenge to reduce carbon emissions on its campuses by 30 percent by 2017. The CUNY Sustainability Project was established to respond to this challenge and a core team formed to help each campus create a 10-year sustainability plan. As part of this project, CUNY colleges also responded to New York State Executive Order Number 4 calling for state agencies to green their procurement management, enhance recycling and waste management, and develop a sustainability plan. This project seeks to integrate sustainable practices into CUNY's operations, curriculum, and research and by partnering with civic and business leaders, to establish CUNY as a leader in areas that fall under the rubric of sustainability.

The campus plans identified over 800 actions to implement by 2017. At the end of 2011, CUNY had already reduced its emissions by 19 percent, more than halfway to its goal of 30 percent. PlaNYC, through the Department of Citywide Administrative Services (DCAS), reserved $30 million dollars for CUNY infrastructure projects, with a $30 million dollar match from New York State, to be distributed by 2017. As of December 2011, $19,293,000 had been allocated for projects, including funds for energy audits at the community colleges.

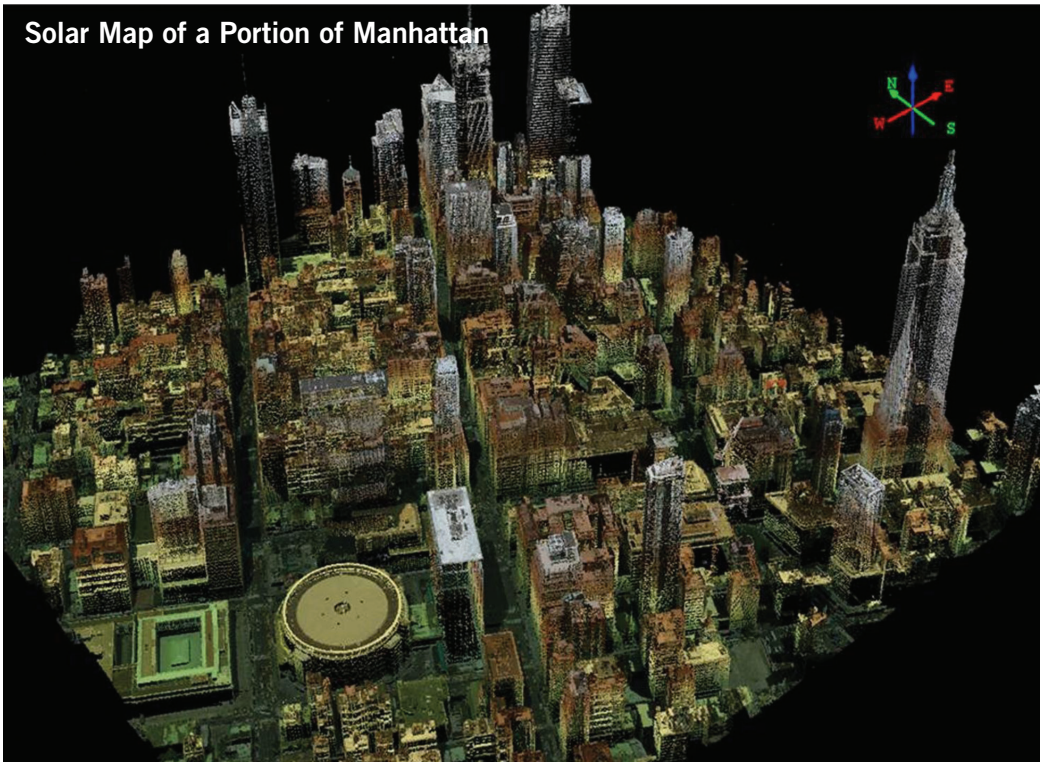
Many degree programs now include sustainability components, and more than 100 continuing education classes cover various sustainability topics. Through the Green Energy Training program at the Center for Sustainable Energy at Bronx Community College, hundreds of students have been trained in solar system design and installation, home energy auditing, and geothermal technologies. Solar teaching labs at Bronx and LaGuardia Community Colleges and Medgar Evers College will ensure that CUNY can meet the demand for green jobs and that clean technology is being piloted at the campuses.

Looking toward 2017, all new CUNY construction projects will continue to seek LEED Silver certification or higher. The rooftops of most of CUNY's buildings have been assessed for their potential to host solar power, with a dozen put forward as potential sites. Further, two large solar installations at LaGuardia and Borough of Manhattan Community Colleges, when completed, will further increase the use of renewable energy at CUNY. By 2013, all campuses will have had a full energy audit, providing the colleges with the documentation needed to secure additional funding for projects that will reduce emissions.

Sustainable Energy

In 2007, Sustainable CUNY was named the lead of the U.S. Department of Energy Solar America City Partnership for New York City. Partnering with the NYC Economic Development Corporation, the Mayor's Office of Long-Term Planning and Sustainability, Con Edison, and others, Sustainable CUNY is working to strengthen and enable the solar market by addressing the barriers to using solar energy, and expanding workforce and economic development initiatives.

In June 2011 Sustainable CUNY launched the NYC Solar Map, the largest LiDAR-based map in the world. The map was built at Hunter College's Center for the Analysis and Research of Spatial Information by faculty and graduate students with support from the High Performance Computing Center at the College of Staten Island. The map is an interactive online tool that displays the solar potential (along with the costs, incentives, and payback period) for every one of the one million buildings in New York City. It is a key foundation for a new energy infrastructure for the city and is being used as a platform for the development and placement of other clean technologies. In addition, the development of a pilot in 2012 for an online permitting tracking portal will be the first time that utilities, as well as city and state agencies, have collaborated to create a streamlined energy infrastructure process in the city, establishing a new level of cooperation. CUNY also will implement a powerful suite of solar tools that includes the distribution of data acquisition systems for solar arrays that display real time information to the owner and the utility, and a NYC Solar Guide to provide clarity on permitting processes. Sustainable CUNY is currently taking applications from the various solar installers who are interested in adding the data acquisition systems to their customer's solar arrays, with installation likely beginning in late spring of 2012.



Solar Map of a Portion of Manhattan

In late 2011, Sustainable CUNY won a third grant on behalf of NYC from the U.S. Department of Energy as part of the national SunShot Initiative. Thirty organizations collaborated with CUNY on its "SunShot NY" plan, which endeavors to make solar energy more affordable, by 2020, by driving down the administrative costs for installing photovoltaic systems (PV) in the city and eventually in major jurisdictions in New York State.

CUNY SustainableWorks

Having successfully developed a collaborative process that enables the solar market, CUNY SustainableWorks is continuously working to leverage that platform to enable the market for other cleantech innovations and processes through the following:

- **Sustainable Business Leaders Advisory Board:** Established in 2010, over thirty city agencies, workforce development entities, academia and businesses leaders work across the continuum to grow the green economy.
- **NYCleantech Collaborative (NYCC):** Initiated in January 2012, this membership organization of leading industries identifies key flagship cleantech projects that can make a substantial difference to the city's sustainable future and collaborates on streamlining entry to the marketplace. NYCC also works with the Con Edison Scholar Programs that provides hands-on cleantech project management experience for CUNY graduate students.
- **CUNY SustainableWorks Commercialization Program:** Through a million dollar investment fund, this program supports emerging cleantech, and works with NYCC to provide a pathway into the marketplace. The program operates out of the Collaboration Center located at the Borough of Manhattan Community College.
- **CUNY Ventures:** In an effort to enable the market for cleantech and generate new revenue streams, CUNY Ventures was established as a for-profit initiative. One initial project, through SunShot NY, will use IBM's Intelligent Operations Center™ (IOC) technology solutions to track data from various sources and provide analytics on PV performance data and local grid impacts. Future plans include furthering the partnership with IBM to expand the IOC to be a smarter tool for use in any city, with services bringing in funds to CUNY while engaging faculty and students on cutting-edge solutions to 21st-century challenges.

Administrative Technology

The relatively close proximity of the CUNY campuses facilitates, and necessitates, the sharing of resources and services that would be much more difficult—and less needed—were the campuses more physically dispersed. As noted previously, students transfer frequently among the campuses. Employees also frequently change their home-base campus, and both students and employees may spend a day, a month, or a term on another campus. Such frequent human interchange, in order that it be productive, requires that the administrative systems across the system communicate with each other and facilitate the work of all students and employees, not just those on a particular campus. These shared administrative services, including services involving administrative technology, also provide economies of scale and result in better service to students and faculty while reducing costs to the University. Such services both promote and are the product of the integrated University.

A prime example of such shared resources is CUNYfirst, a University-wide initiative to upgrade and integrate database systems that manage student administrative, human resources, and finance business processes. CUNYfirst will replace dozens of aging software systems that do not interact with a single

database. CUNYfirst will enable the sharing of student, staff and administrative information that can be accessed anywhere by users, based on their role in the University (e.g., student, faculty adviser, budget manager, etc.). The main focus of CUNYfirst is to enable common solutions and lead to standardized business processes that will advance productivity, University-wide purchasing (and thus advance cost savings), and consolidation of work efforts currently replicated around the University.

CUNYfirst is being implemented in phases. Base systems for human resources, financial management, faculty workload reporting, and budgeting have already been launched. A new academic system is in place for students, faculty, and professional staff at Queens College and Queensborough Community College. The remainder of the academic launch plan is as follows.

- Wave 2A (Spring 2012): Bronx, Hostos, and New Community Colleges, CUNY Law, Lehman College
- Wave 2B (Summer 2012): Kingsborough and LaGuardia Community Colleges
- Wave 3 (Academic Year 2012/2013): Borough of Manhattan Community College, Brooklyn, Medgar Evers and York Colleges, College of Staten Island, New York City College of Technology
- Wave 4 (Academic Year 2013/2014): Baruch, City, Hunter, and John Jay Colleges, Graduate Center, Graduate Schools of Journalism, Public Health, Social Work, and the School of Professional Studies

Other CUNYfirst applications currently on the project calendar include:

- Position Budgeting: March 2012
- Work Study Payroll (Queens and Queensborough Students): Spring and Summer 2012
- Financial Aid (Queens, Queensborough and New Community Colleges): Spring 2012
- Procurement: Accounts Payable/Purchasing (City of New York entities only): June 2012
- Procurement: Accounts Payable/Purchasing (Senior Colleges): June 2013
- Outbound/Inbound Payroll Interface: Fall 2012
- Procurement: Accounts Receiving/Expenses: Schedule to be Finalized
- Advanced Financial tools (Asset, Deal and Cash Management): Schedule to be Finalized

The Integrated Financial Aid Processes system is scheduled to be implemented a year after the academic launch for the colleges. A University-wide admissions system is under study to be launched in 2013-2014.

All CUNY employees will be trained to use the new tools available in CUNYfirst, with training available in traditional face-to-face classes and online.

An IT strategic plan supports the challenges and evolving needs of the University through a variety of cost-effective enterprise technology solutions. Relocating the University's Data Center to 395 Hudson Street in Lower Manhattan, and enhancing and upgrading it, has been an important part of efforts to continue to meet the demands of projected technology growth.

During the period of the Master Plan, there are plans to:

- Enhance and support University communications through an integrated video teleconferencing system and a mobile technology integration strategy;
- Support email communications through enterprise email for administration and faculty;
- Identify collaborative procurement opportunities and savings through shared licenses;
- Provide for and support a University-wide common infrastructure that will improve network speed, application performance access, and reliability; and,
- Develop a University IT Disaster Recovery (DR) and Business Continuity plan to ensure that critical enterprise applications continue to function at all times.

Even now, enterprise technology is helping to decrease central office expenses so that resources can be reallocated to the primary missions. Over the next four years, for example, the Office of Human Resources Management (OHRM) will engage in the following activities to help the University operate more efficiently:

- OHRM is in the process of centralizing the payroll units of all campuses at two sites: 395 Hudson Street and 555 W. 57th Street. When centralization is complete, OHRM expects savings from economies of scale and the reduction of errors.
- OHRM is in the process of centralizing benefits, which will improve the quality of the service provided to faculty and staff as well as reduce costs.
- OHRM is exploring the feasibility of a central onboarding site to facilitate the administrative work associated with hiring faculty and staff. OHRM will continue to work with the CUNYfirst team to roll out major modules in the Human Capital Management pillar, including enhancements to the Talent Acquisition Module, Mass Reappointment, and outbound payroll. These CUNYfirst developments will streamline the administrative work involved in hiring and providing service to faculty and staff.
- OHRM will develop an enterprise-wide system for tracking time and leave.

To ensure that technology continues to play a strategic role in supporting the mission and operations of the University, CUNY is committed to the recruitment, retention, and professional development of IT and relevant staff that is necessary to gain maximum advantage from the use of technology in the 21st century.

Facilities: Building New York's Future

Facilities resources are an integral component of every successful university. CUNY is responsible for ensuring that these resources are available and appropriate to meet the needs of students, faculty, and staff within the context of CUNY's urban setting. The University's Capital Program received $2.7 billion in New York State appropriations between Fiscal Year 2008-09 and Fiscal Year 2011-12 to address the needs across all 24 institutions. The funding includes projects that will add to CUNY's 300-building, 27 million gross square feet facilities portfolio. To develop the right mix of small, medium, and large classrooms; state-of-the-art laboratories; research facilities; study areas; and communal gathering spaces, all

equipped with current technology, CUNY works closely with the administration, faculty, and students at each college.

At the base of every good building is its foundation. CUNY has been reinforcing its foundation over the past four years with a series of prioritized initiatives that were established to address various concerns within the facilities domain of the University. Communication and collaboration with the colleges is vital to the success of these initiatives.

Initiatives

First, CUNY has made the transition away from using the construction services of the Dormitory Authority of the State of New York (DASNY) on major capital projects, a step outlined in the 2008-2012 Master Plan. CUNY now has eight major projects in design or construction: Baruch College's Field Building at 17 Lexington Avenue, the Brooklyn College Performing Arts Center and the New Science Building, the new CUNY Law School, New York City College of Technology's New Academic Building, the Queens College Kupferberg Center, the Interdisciplinary High Performance Computational Center at the College of Staten Island, and the York College Academic Village. These projects—comprising 1.5 million gross square feet (GSF), at an anticipated cost of $1.5 billion—will be built with construction management provided by CUNY, not DASNY. CUNY has hired additional staff in its Contracts and Construction Management Units and implemented innovative procurement approaches to deliver these projects. Additionally, a Unit of Vender Integrity and Investigation has been established to monitor the firms selected for CUNY- coordinated projects.

The second initiative, the "state-of-good-repair" effort, began in 2007 with a survey completed by each college for all buildings over 5,000 square feet. Details for bringing each building up to a state of good repair were collected and analyzed by a consultant who then attached a dollar amount to the necessary maintenance and upgrades. The criteria and protocols were established in coordination with facilities counterparts at SUNY to ensure consistency and to demonstrate the overarching need at all of New York State's public higher education institutions. The results showed CUNY's needs were more than $4 billion over a 10-year period; a portion of which were included in the University's 2008 through 2013 five-year capital request. The study demonstrated to state and city officials CUNY's significant needs, which in turn led to $500 million in state Critical Maintenance appropriations to individual senior colleges, and $500 million in state appropriations to CUNY-wide lump sum projects. The community colleges received more than $200 million in Critical Maintenance appropriations, composed of 50/50 matching funds from the city and state. Most importantly, 415 projects have been initiated at the senior colleges and another 77 projects at the community colleges. The individual projects are identified and prioritized in close consultation between CUNY central and campus personnel. Examples include: restoration of the Shepard Hall façade at City College; escalator upgrades at Hunter College; Ingersoll Hall HVAC and Science Building HVAC projects at Brooklyn and Queens Colleges, respectively; and central plant upgrades at Lehman College. At the community colleges, projects include Phases I and II of the campus-wide utility upgrades at Bronx, the first two phases of the replacement of the Center 3 façade at LaGuardia, central boiler plant replacement and HVAC upgrades at Kingsborough and BMCC, electrical upgrades at

Queensborough, and roof replacement and bathroom upgrades at Hostos. These efforts will continue as projects are completed and new issues arise.

The third initiative involves financing and developing new CUNY facilities through public/private partnerships.

- **Residence Halls:** In 2006, CUNY opened its first public/private residence hall on the City College campus. In fall 2011 the Towers at City, a 589-bed residence hall, was 91 percent occupied. In 2009, Queens College opened the Summit, a 506-bed residence hall on campus, which had a fall 2011 occupancy rate of 98 percent. The Graduate Center Apartments, offering bright, modern, airy, and affordable housing for graduate students, postdoctoral fellows, and members of the faculty opened in fall 2011 (100 percent occupancy). Additionally, the College of Staten Island has a 454-bed residence hall designed and ready for financing in early 2012. The University is exploring opportunities for the Manhattan colleges to occupy a shared facility.
- **Silberman School of Social Work at Hunter College and the CUNY School of Public Health at Hunter College:** Opened in fall 2011, the Silberman School of Social Work at Hunter College and the CUNY School of Public Health at Hunter College involved the purchase of a property in East Harlem in order to relocate the Silberman School from its current leased facility on Manhattan's Upper East Side. A new 147,000-square-foot building was constructed on the purchased land to provide the school with a permanent, owned facility. This public/private partnership was made possible through the sale of the leased facility on East 79th Street, including the school's lease interest at that site, to a developer who was required to build the new facility in East Harlem before taking possession of the 79th Street building.
- **New York Simulation Center for Health Sciences:** Also opened in fall 2011, the New York Simulation Center for Health Sciences is a joint venture between CUNY and New York University (NYU) Langone Medical Center. The Simulation Center, located on a floor at Bellevue Hospital, is the largest state-of-the-art training facility for first responders, emergency response workers, health care students, and professionals in the nation. CUNY provided the capital dollars for the renovation of the space, and NYU will provide an equivalent amount in operating funds, anticipated to cover the first decade of operations. Funding for this project was made available through Assembly Speaker Sheldon Silver, who saw the need for a training center following 9/11; he appropriated $10.5 million in the state budget, which was matched by Mayor Bloomberg in the city budget.

New York Simulation Center for Health Sciences

- **CUNY Law School:** A new facility for the CUNY Law School is currently undergoing renovations, to be completed and ready for classes in summer 2012. The existing Law School building is a converted junior high school that was modified, but not completely renovated, for the Law School's use. That facility is difficult to access using public transportation and does not function well for program delivery. Therefore, consideration was given to relocating to another site in Queens that could be designed specifically to meet the Law School's needs. Through a solicitation process, several developers proposed sites throughout Queens, including Citigroup, owners of 2 Court Square, an office building and training facility in Long Island City. The purchase of a 260,000-square-foot condominium unit in 2 Court Square provided the optimal solution, because it was a built facility with limited need for renovations. Many of the space types required for program delivery were already built out and relocation could occur more quickly than had CUNY constructed a new building. Additionally, the building's location provides accessibility to mass transit that will permit the Law School to develop a part-time evening program and to provide greater pro-bono legal representation throughout the five boroughs.

Artist's Rendering of CUNY Law School

- **The New Community College at CUNY:** The next major public/private partnership project is for the New Community College (NCC). In May 2011, NCC took occupancy of leased space at 50 West 40th Street in midtown Manhattan, which formerly housed a branch of the Katherine Gibbs School. This building was chosen for its convenient location and space configuration. The existing arrangement of classrooms, offices, library space, and gathering spaces can easily accommodate NCC in its early years; additionally, the building borders Bryant Park, which provides a type of campus. Because the leased facility can only accommodate approximately 1,200 full-time students, the University also has a long-term plan for NCC at 1 Amsterdam Avenue, near 59th Street in Manhattan. This site is

currently occupied by John Jay College's North Hall. John Jay is vacating the building in early 2012 when its new 630,000-square-foot facility, located between 10th and 11th Avenues and 58th/59th Streets, is completed. One Amsterdam Avenue has approximately 830,000 square feet of air rights that can be divided to create a 400,000 square foot home for NCC and allow for the sale of 430,000 square feet to a developer. As part of the sale, the developer will be required to build, at minimum, the core and shell of the NCC facility. The future 400,000-square-foot building will allow NCC to grow its enrollments to 3,000-5,000 students. Solicitation for a developer will be disseminated in early 2012, with selection of a development partner expected in spring 2012. Construction will commence as quickly as negotiation and funding allow.

CUNY is also exploring options for a public/private partnership with Memorial Sloan Kettering Cancer Center that includes the relocation of Hunter College's health science programs from the Brookdale campus at East 23rd Street to East 73rd Street, closer to the main campus. The new facility will also provide space for research and instruction for science programs currently located in outdated, undersized space on the main campus. This project is an opportunity for Hunter College to expand its science facilities resources and reduce the travel distance for students and faculty working in the sciences.

The fourth and final initiative focuses on improvements in the area of facilities planning and implementation. These can be categorized generally, within two areas: master plans and innovative procurement approaches.

Consideration for capital projects on a campus begins with the college's facilities master plan. In 10-year cycles, and as programmatic changes occur or real estate opportunities arise, CUNY reviews and revises the facilities master plan of each campus. Since 2007, the facilities master plans for five campuses—Baruch, Brooklyn, Staten Island and York Colleges, and LaGuardia Community College—have been updated and approved by the Board of Trustees. The Hostos Community College facilities master plan update is currently under way; another seven colleges—City, Hunter, Medgar Evers, New York College of Technology, BMCC, Kingsborough, and Queensborough Community Colleges—are preparing to undergo facilities master plan updates.

CUNY and its consultants begin each of these plans with a space-needs analysis calculated by applying current CUNY space guidelines, approved by the state Board of Regents in 1972, to existing and projected enrollments. Because CUNY and higher education have undergone many changes over the last 40 years, benchmarking against other public urban institutions has also been factored into these analyses. However, CUNY cannot continue working with outdated metrics; therefore a project to develop new space guidelines for the University began in July 2011. The new guidelines will promote 21st-century learning and all that it entails, including:

- The use of technology throughout the curriculum, research areas, and administrative functions;
- The provision for increasingly active learning environments;
- The building of community through student gathering and study spaces; and,
- The maximization of facilities resources.

Unlike the 1972 space guidelines, which are a series of formulas contained in a document and used by a limited few in master plans or major building projects, the new space guidelines will be an interactive electronic tool for more efficient management of space on the campuses. This tool is expected to be in use by early 2013.

At a more immediate level, from campus to campus the majority of space types are similar; therefore CUNY takes advantage of its unique five-borough radius when planning renovations and new facilities. Spaces that function with maximum benefit to the students, faculty or staff are identified and act as models for future projects. Examples are the LaGuardia Community College Student Information Center and the Office of Administrative and Information Services at Hunter College. These two sources of enrollment services have been visited by planning staff from many of the other colleges as examples of how to make the administrative requirements of attending school easier to navigate.

Additionally, project data are shared through the Capital Improvement Plan (CIP) database. CIP is the tool used by all 24 institutions to request capital projects. It contains the scope, cost estimate, schedule, justification, and program components of every requested project. CIP allows read-only access by any CUNY college facilities administrator of another college's data. This eliminates the need to start from scratch when one institution is considering a project similar to a project recently completed. Furthermore, cost estimates, square-footage requirements, and timelines are all better projected when benchmarked against comparable projects.

Turning to innovative procurement approaches, it is essential first to understand that all CUNY capital projects are designed by licensed architects and engineers. In order to acquire these professional services, CUNY has procured design and construction requirement contracts that allow the University and the colleges to expedite capital projects.

Because CUNY is an integrated university, all 24 institutions are able to benefit from the requirement contracts. Furthermore, work of a similar nature can be bundled across campuses to achieve scale-of-magnitude savings and to accelerate necessary improvements. To that end, 14 laboratories at eight campuses will be upgraded using services and construction provided through the requirement contracts. These upgrades will support the Decade of Science in a more immediate fashion than the large-scale new science facilities at City, Brooklyn, Lehman, and Hunter Colleges. The specific scope of work is developed for each laboratory with input from faculty representing their respective colleges. The fast turnaround for these projects—14 months from design to construction completion—quickly improves life and morale on the campuses.

The requirement contracts have streamlined CUNY's ability to meet facilities needs at the colleges. The requirement contract solicitation resulted in more than 350 responses. The city's architecture, engineering, and construction community is very interested in working with CUNY, and this method of procuring services allows firms to compete fairly for CUNY's capital projects and provides CUNY with contracted firms ready to begin working as appropriations are made and are available for expenditure.

Capital Budget

The capital program has two components: 1) The funded 2011-2012 Capital Plan and 2) the 2012-2013 Capital Budget Request. The state provides 100 percent of the capital support for the funding for senior

colleges and 50 percent for the community colleges, with the city providing the matching 50 percent for the community colleges. The University cannot access the state funding for the community colleges without the city match.

CUNY has generated new support for the University through private donations and several colleges have successfully attracted donor contributions for capital projects. Examples include: Brooklyn College's receipt of approximately $18 million for its Performing Arts Center, $10 million of which came from Leonard and Claire Tow (Class of 1950 and 1952, respectively); and $5 million from Max Kupferberg (Class of 1941) for the Kupferberg Center for the Arts at Queens College. Both of these projects are in currently in construction.

The enacted 2011-12 state budget provided $315 million in new appropriations for CUNY. The budget included $284 million for critical maintenance projects at senior colleges, and the balance of $31 million for critical maintenance projects at community colleges. These numbers are significantly less than the amounts in CUNY's request. As a result, the State Division of the Budget understands that CUNY will be seeking additional annual appropriations to fund its capital program over the next five years. Included in the request are: replacement of boilers at Brooklyn College; HVAC upgrades in Steinman Hall at CCNY; Thomas Hunter Hall infrastructure upgrades at Hunter College; replacement of elevators in Namm and Voorhees Halls at New York College of Technology; and continued funding for ongoing projects at the community colleges such as the utilities upgrades at Bronx, upgrades in the 500 Grand Concourse building at Hostos, and the façade replacement of Center Three at LaGuardia.

CUNY requested over $5.6 billion in funding from the state and city for its 2012-13 through 2016-17 five-year capital plan. The University's capital request is divided into four categories: CUNY-wide programs, CUNYfirst, the Enterprise Resource Planning initiative, and individual campus projects. The CUNY-wide construction programs are requests for funding to address small-to-midsize major reconstruction projects across all the campuses. The programs consist of the following categories: Health and Safety, Facilities Preservation, ADA Compliance, Mechanical and Infrastructure Upgrades, Certificate of Occupancy/Public Assembly, Science Lab Upgrades, Asbestos Remediation, Energy Conservation, and Bathroom Upgrades. The projects within these programs were identified through building-condition assessment surveys, and by college and central office staff. The identified need in each of the CUNY-wide programs far exceeds the available funding; consequently, the campus facilities officers and project managers from the University's Department of Design, Construction and Management monitor the list of projects and the actual conditions on campus to address the most critical needs as quickly as possible. More specifically, when Local Law 11/98 work (involving building façade inspections and repair) is identified, an example of which is $4.9 million worth of work on BMCC's Chambers Street building, the University is able to make corrections immediately.

The University requested funding to support a key initiative of the 2012-2013 capital program, that of critical maintenance. This encompasses projects intended to bring CUNY campuses to a state of good repair, including repair of interiors, building envelopes, roofs, mechanical systems, electrical systems, chiller and boiler plants, and fire alarm systems. As noted earlier, this initiative was completed in con-

junction with the State University Construction Fund for SUNY colleges. Due to the age and magnitude of the facilities portfolio, the University requested $2.6 billion over the five-year period for this initiative as well as individual projects lined out for each of the schools. The $284 million appropriated in the 2011-12 budget will initiate this work at the senior colleges, and the remaining balance will be requested in upcoming budget requests.

Several active projects received the funding required for completion or to progress to the next phase in the 2011-12 budget. These projects include everything from building renovations to new, large mixed-use facilities. The projects address the Chancellor's Decade of Science initiative, space deficits, and infrastructure requirements, as well as replacement of obsolete buildings and quality of life improvements on the campuses.

The Advanced Science Research Center (ASRC) Phase I and the CCNY Science Facility are separate entities with shared core science facilities and amenities and are in construction on the South Campus of City College, with anticipated completion in summer 2014. Phase I of the ASRC (described in the section "The Decade of Science") will be a shared research facility that supports the concept of an integrated university by providing state-of-the-art laboratories and core facilities in one location for specific members of University's research faculty. At City College, the Science Division currently occupies facilities that cannot be cost effectively renovated to support research at the College. The new four-story Science Building will address this need by providing an additional 200,000 gross square feet (GSF) of research space, and the first of the two ASRC buildings will be a 189,000 GSF, five-story building. In a joint venture, the firms of Flad & Associates and Kohn Pederson Fox Associates (KPF) have designed these two buildings, and construction began in summer 2008. The two-building complex will be constructed at a total estimated cost of $744 million. Design funds for Phase II of the ASRC, a 215,000 GSF building, contiguous with the Phase I building, are requested in year 2013-2014 of the next budget cycle.

At Lehman College the University is also constructing a new science building in two phases. The first phase building, designed by the firm of Perkins + Will, will be a learning tool, as Lehman's premiere science programs focus on the plant sciences and ecology. Within the interior courtyard a "living-machine" will use plant life to recycle water for toilets in the building. The state provided $78.7 million in the prior five-year capital plan for the Phase I portion of the building, which will provide 66,185 GSF of space for instructional and some research use. Construction began in summer 2008. Funding for the Phase II portion, at an estimated cost of $242 million, was requested in the new FY 2012-2017 Five-Year Capital Budget Request.

The state previously provided appropriations for the Roosevelt Hall project at Brooklyn College. Brooklyn College's 1995 master plan recommended renovation of Roosevelt Hall, an existing 1937 physical education building, for use as a science building. The University has determined that the existing structure cannot be converted for this use and must be demolished in order to create an appropriate science facility for the College. CUNY hired the firm of Mitchell/Giurgola to design Phase I, a 180,000 GSF instructional building. The new facility will house the lower-level instructional labs across the science disciplines at Brooklyn College. This interdisciplinary approach will highlight all of the science pro-

grams, which is intended to draw more students into the majors. The cost of the building is estimated at $350 million; the balance of funding is included in the FY 2012-2017 Five-Year Capital Budget Request.

At Queens College, facilities upgrades for the sciences are already under way. Mitchell/Giurgola Architects designed an addition to Remsen Hall, one of Queen College's three science facilities. The new instructional and research space was completed in 2010. Phase II of the science upgrades will renovate and/or create research labs, offices, and classrooms in the existing building. The cost of the Phase II work is estimated at $74 million and is included in the FY2012-13 through 2016-2017 Five-Year Capital Budget Request.

One challenging project was the replacement of Fiterman Hall for Borough of Manhattan Community College. The building was badly damaged on September 11, 2001. Pei Cobb Freed & Partners has designed the new 377,000 GSF building to rise on the site of the original structure. It will house classrooms, lecture halls, offices, student meeting spaces, and a virtual library linked to BMCC's main Chambers Street building. Construction will be completed in time for the fall 2012 semester. The project is fully funded at $325 million.

The new North Instructional Building at Bronx Community College will be the first academic building constructed for the college since the campus was purchased from NYU in the early 1970s. The firm of Robert A.M. Stern Architects has designed a beautiful new classroom and library building that will close off the North Quad, as intended in the original campus master plan. The $102 million building will be completed in the summer 2012.

At New York City College of Technology, the New Academic Science Building will address the college's acute space deficit by building an approximately 350,000-square-foot facility on the site of the Klitgord Building. The new building will be a mixed-use facility with classrooms, computer labs, science labs, a 1,000-seat auditorium, physical education facilities, administrative offices, student services, a nursing simulation center, and a dental hygiene clinic. Perkins Eastman Architects has designed this $405 million project. The state has provided $252 million in appropriations for this project; the remainder is requested in the FY 2012-2017 Five-Year Capital Budget Request and is the University's highest priority for funding.

CUNY is in negotiations on behalf of Hunter College to purchase a floor of Weill Cornell Medical College's new Medical Research Building (MRB), to be constructed at 69th Street between York and 1st Avenues. This 21,000 GSF condominium will be a standard laboratory floor designed for life sciences research. In addition to occupancy of its laboratory floor, Hunter scientists will have access to core research and conference facilities in the MRB, including the vivarium, on the same basis as Weill Cornell scientists.

The next major project for Baruch College is renovation of the Field Building at 17 Lexington Avenue. Because the building is occupied and the college does not have available swing space, the renovation will be completed in phases. The first phase will improve the building's infrastructure, including a minor addition to the building to support new mechanical systems, additional elevators, and stairwells that will allow the building to function properly when programmatic changes are undertaken in the subsequent phases.

The College of Staten Island's Interdisciplinary High Performance Computational Center, a 175,000-square-foot facility, will house a high-performance computer that serves as a University-wide resource for

computer-based modeling and simulation that are a requisite for performing advanced multidisciplinary research. The facility will contain spaces dedicated to state-of-the-art scientific computing hardware, laboratories for visualization, computer labs flexibly designed to encourage collaborative student research, high-tech instructional laboratories, general purpose classrooms, and dedicated student work areas.

The Academic Village/Conference Center at York College will be built on the site of the existing Classroom Building. This new facility will house the School of Business, classrooms, enrollment services, student activities, a bookstore, a café and an exhibition gallery. The nine-story building will be four times larger than the Classroom Building and will occupy approximately 160,000 square feet. Also within the building will be a state-of-the-art conference center that will be available for use by the community. Ennead Architects are designing this facility, and it will transform, not only the campus, but downtown Jamaica, Queens, as well. The project cost is estimated at $250 million.

Finally, in CUNY's previous Master Plan (2008-2012), a number of major capital projects were cited as in construction. These projects are now completed and serving the colleges:

- At John Jay College, the new 625,000 GSF building designed by Skidmore Owings and Merrill at a cost of approximately $557 million is being completed in early 2012. This multi-use facility includes science labs, classrooms, student services, a computer center, faculty and administrative offices, and support spaces. The completion of this facility will deliver half a campus to the college in one project. John Jay has long served as an anchor in its community. The building is a welcome addition to the neighborhood; its street-level multipurpose room and café, and the Jay Walk, a third-floor outdoor quad, are open to the public. The new building at John Jay is an excellent example of CUNY facilities' consumer orientation and focus on student space. The "Quad in the Air" is meant to bring students together, to give a campus feeling to an academic building in an urban environment.
- In 2010, Medgar Evers College's Academic Building I, designed by Polshek Partnership Architects, opened. The new $235 million facility houses state-of-the-art classrooms and computer labs for all disciplines, as well as instructional labs and faculty offices for the School of Science, Health and Technology, and the college's main dining facility.

Construction and renovation add needed space and better facilities for students and faculty. However, a good educational institution is also a good neighbor, as well as a leader in economic development and sustainable practices. Fueled by record enrollments and lower construction costs in recent years, CUNY's capital program has about $2 billion of projects in the pipeline, from state-of-the-art laboratories to major renovations of historic buildings. In the 2010-2011 fiscal year, CUNY spent $604 million on capital projects across 21 campuses. Collectively, these projects will provide about 1.9 million square feet of space and generate an estimated 14,000 jobs over the lifetime of the work. In every neighborhood that CUNY inhabits, the college becomes part of the fabric of the community.

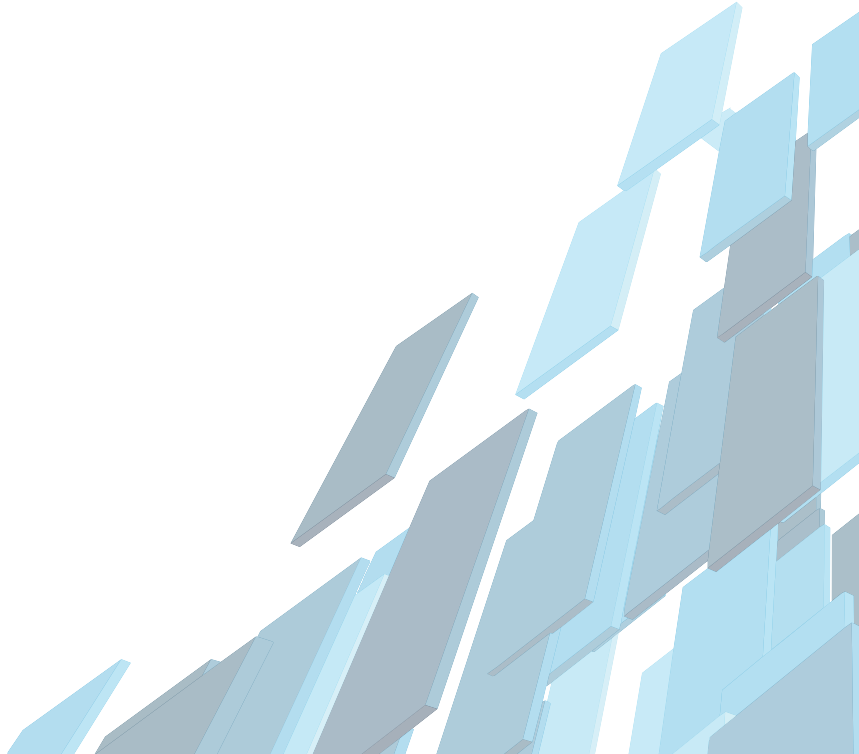
CONCLUSION:
CUNY— A Dynamic University in a Changing World.

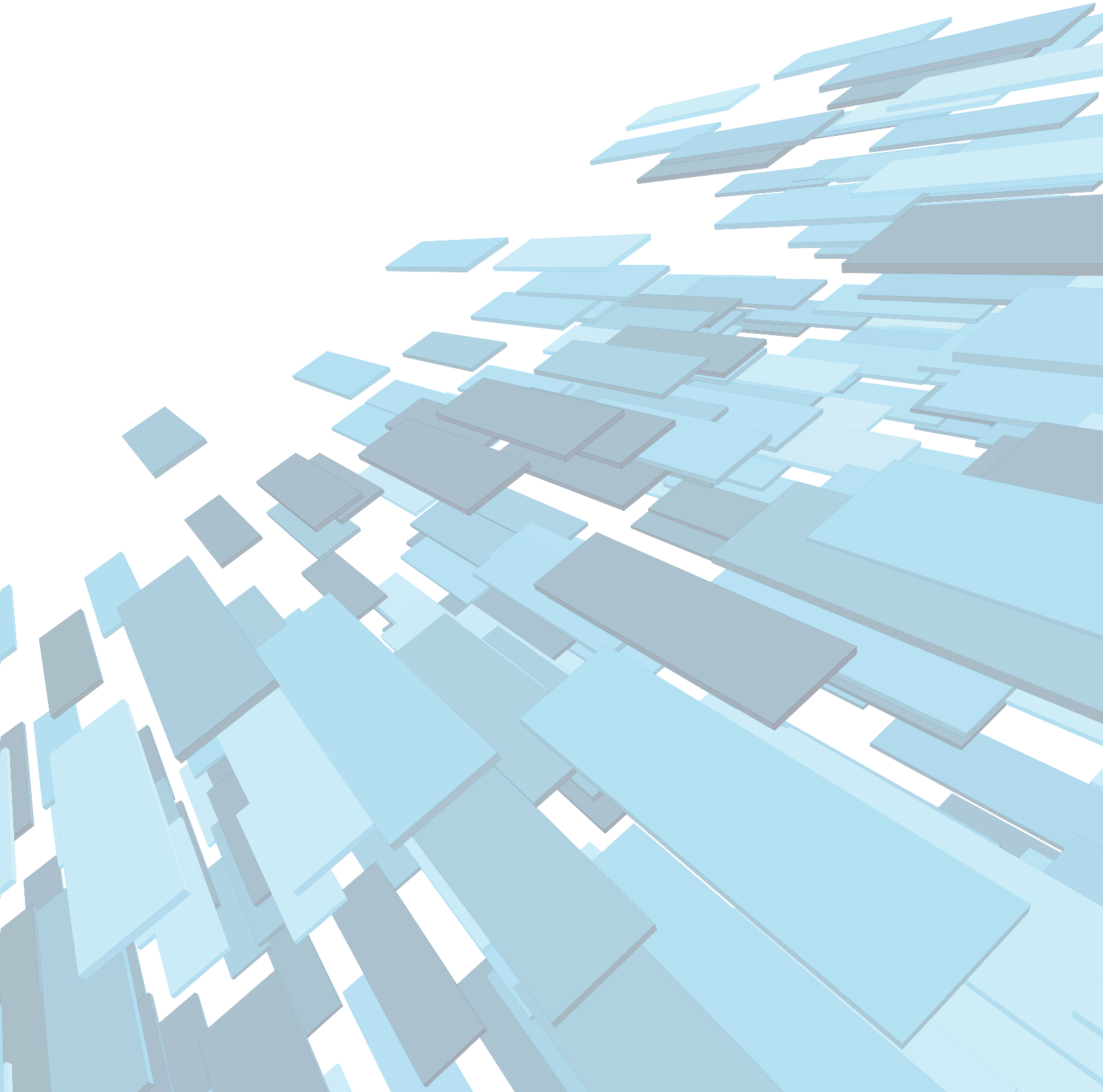
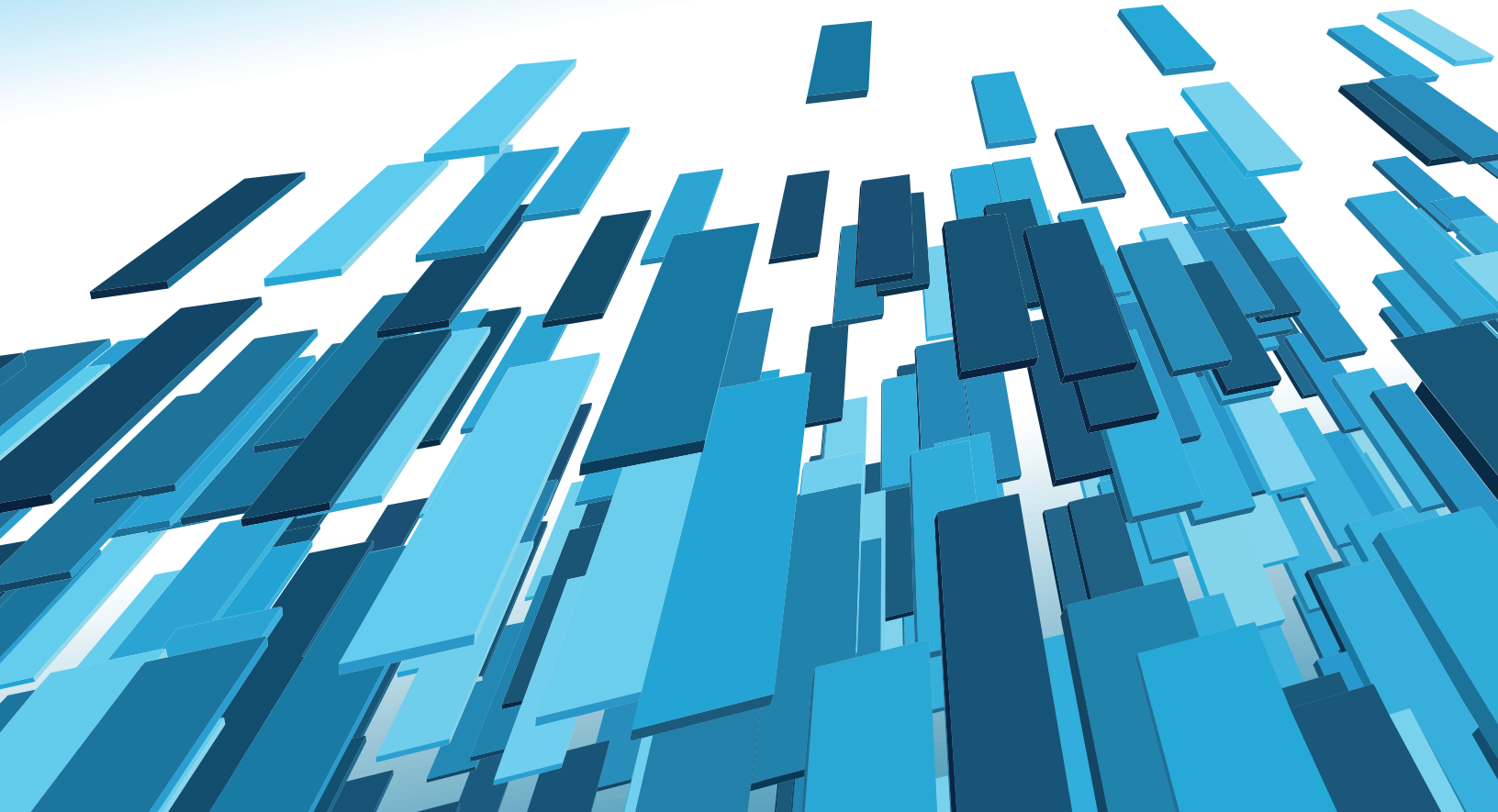
This Master Plan showcases CUNY's accomplishments since 2008 and articulates a vision toward 2016. More than a decade ago, the University's Master Plan for 2000-2004, developed during a challenging time, put forth a strategy of institutional renewal. The next two plans offered a vision of a reinvigorated institution, building on substantial progress.

Now, in 2012, CUNY is well positioned. At the end of this academic year CUNY will be at its highest enrollment, with the largest number of campuses and programs in the history of the University. The scale of operation will be at a level of public service to the city, state, and nation that is unprecedented in the history of New York City. CUNY is becoming known as the leading urban university in the nation for good reason.

The University's accomplishments are making it a desirable partner in many endeavors. Earlier, this document described the new simulation center for study in the health sciences, an unprecedented collaboration between CUNY and the NYU Langone Medical Center. CUNY's new buildings, and the renovations that preserve its historic buildings, are being designed by some of the finest architectural firms in the country. CUNY's students and graduates are earning Rhodes, Truman, Goldwater, and other prestigious scholarships and fellowships. CUNY's faculty earn prestigious awards and are invited to join the National Academies in their fields of study.

Under Chancellor Matthew Goldstein's leadership, CUNY has experienced a widely lauded transformation. The University has raised academic standards, improved student performance, increased enrollment, taken steps to build its faculty corps, created new colleges and schools, and expanded its research capacity. Looking back, CUNY has much to be proud of. Looking forward, CUNY is confident in its ability to undertake the significant amount of work that still needs to be done.

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