

Academia in New York City: Shaping the Future of NYC's Economy



November 2024

To my fellow New Yorkers,

There is no better classroom than New York City. That is why our academic sector continues to thrive, pumping \$35 billion in annual economic impact into our local economy. Half a million college and university students and another half a million recent graduates provide fresh talent, open new businesses, and create good-paying jobs.

Through this new report, New York City Economic Development Corporation (NYCEDC) is uplifting this rarely told but remarkable New York story. Our more-than-100 higher education institutions host a student population of over 503,000—on par with the entire population of Atlanta and larger than Cleveland or Pittsburgh. And besides our homemade talent, we are the top destination in the country for recent college graduates, by a longshot. From 2021 to 2024, about 490,000 graduates ended up in New York, twice the number who chose Los Angeles, the second most popular destination. Our academic institutions have produced almost 5,000 patents and 500 startups in recent years.

The sector is growing by the day. Vanderbilt University and Northeastern University are opening new campuses here. New York University has inked a deal with Korea Advanced Institute of Science and Technology (KAIST) on cutting-edge AI collaboration, while Columbia, Rockefeller, and Yale Universities will partner with the Chan Zuckerberg Initiative to launch a new biomedical research hub. Like so many other people and organizations, academic institutions are seeing New York City as an incredible place to take root and grow.

Our institutions of higher education are engines of upward mobility. New York City is home to 13 of the top 20 colleges for economic mobility nationwide. They're advancing and growing our economy while, at the same time, educating and uplifting students. These institutions are essential to providing the career pathways to the jobs of today and tomorrow in sectors like the green economy, life sciences, technology, and AI, among so many others.

To be sure, universities across the country are facing real headwinds, and New York City is not immune to national trends of declining enrollment and lower rates of degree completion.

But I'm confident we'll be able to weather any storm, and for the second year in a row, CUNY enrollment has increased. NYCEDC has a history of partnering with academia and looks forward to strengthening these valuable collaborations into the future. With every global university establishing new operations here, with every New York City family celebrating a first-generation graduate, and with every new startup, we are laying the foundation for a strong, thriving New York City.

With special thanks to my NYCEDC team who conducted this analysis, I hope you're as inspired by this report as I am.

Sincerely,

A handwritten signature in black ink, appearing to be 'AK', written in a cursive style.

Andrew Kimball
President & CEO
NYCEDC

Academia in New York City: Shaping the Future of NYC's Economy

November 2024

New York City is a university town

With more than 100 higher education institutions and a student population of over 503,000—on par with the overall population of Atlanta and far exceeding that of Cleveland and Pittsburgh—universities and colleges are an important part of New York's economic and physical fabric. New York has more academic institutions than any other metro area in the country. Our large and diverse academia presence rivals and often exceeds that of other cities renowned for their higher education institutions and we are increasingly seeing top tier institutions including Vanderbilt, Northeastern, Stony Brook (as part of the New York Climate Exchange), and the Korea Advanced Institute of Science and Technology (KAIST), establishing a presence in the city.

Academic institutions play an important role in the city's large and diverse economy. Not only do they represent an industry that contributes \$35 billion of economic impact every year, they also are an important cornerstone of innovation and equitable economic development. Academic institutions help attract and grow young talent—strengthening our workforce and promoting economic mobility—and drive research and innovation that can be translate to new business and solutions.

NYCEDC has been collaborating with and investing in academia for over 15 years. The most visible example is Cornell Tech—the result of a 2011 NYCEDC-led competition to bring a new applied sciences university to the city to help grow the tech industry and diversify the city's economy. Since then, NYCEDC has

Key Highlights

- Higher Education is an important sector in NYC's economy, employing over 140,000 people and contributing \$35 billion annually in economic impact.
- With more than 100 higher education institutions and a student population of over 503,000, universities and colleges are an important part of New York's economic and physical fabric. The New York metro has more academic institutions than any other metro area in the country.
- These institutions are also building NYC's future workforce, with about 150,000 degrees completed each year over the past decade. These degrees have increasingly shifted toward STEM.
- NYC graduates tend to stay in the city: 66% of students who graduated from NYC metro schools between 2014 and 2024 are working in the region today.
- Since 2001, 4,780 patents have been issued from university research in NYC, a majority of which are in the life sciences.
- NYC academic institutions are among the most effective at enabling upward mobility—making up 13 of the top 20 colleges for economic mobility nationwide.

helped fund numerous new academic programs and research centers (e.g., NYU's VR/AR Lab and CCNY's Cybersecurity Master's program), capitalize new facilities and equipment (e.g., Hunter College's Brookdale campus being transformed into SPARC Kips Bay), and establish new incubators and programs for startups in partnership with academia (e.g., SUNY's Downstate Biotech Incubator).

NYCEDC will continue to deepen partnership with academic institutions to ensure New York City has the talent, technology, and access to opportunity necessary to remain globally competitive and a beacon of possibilities. This report surveys the current academia landscape in New York City, discusses the impact it has on the city's economy, and highlights ongoing trends that will inform the next chapter of NYCEDC's collaboration with academia.

New York City has the largest and most diverse academic ecosystem in the nation

New York City is home to over 100 higher education institutions, including 29 public colleges (25 CUNY and 4 SUNY schools).¹ These institutions collectively have 503,000 students enrolled, employ 142,000 people, and boast top programs in business, fashion, design, law, film, media, medicine, journalism, international affairs, sustainability, engineering, and other STEM fields.² Institutions across the city offer a wide range of experiences and specializations. They include community colleges, specialized vocational and technical colleges, liberal arts colleges, specialized arts and design colleges, religious institutions, doctoral schools (medical schools and law schools), and cross-disciplinary research universities. They also vary drastically in terms of size and resourcing. Enrollments per institution range from under 100 students at small religious and vocational institutions to nearly 60,000 students at NYU, and

endowments range from \$200,000 to \$14 billion.

The physical presence of these institutions is large and spans all five boroughs. Eleven NYC universities hold over one million square feet (SF) in real estate.³ NYU has the largest real estate holdings with 14 million SF across 115 buildings on large campuses at Washington Square Park and MetroTech Center. Columbia University holds nearly 14 million SF across 200+ buildings in Upper Manhattan. This contrasts with smaller universities and colleges such as Cooper Union, which occupies two buildings in Lower Manhattan and Guttman Community College, which occupies 300,000 SF in Midtown Manhattan.⁴

While the sheer size of the sector makes it a significant part of the city's economic pie, the breadth of academic institutions is also an asset for the city as it offers higher education to people from all backgrounds and helps ensure that the city has a workforce that is both balanced and prepared for the range of jobs our economy has to offer, including the high-wage, high-growth jobs that will increasingly define our industry landscape.

NYC's Higher Education Landscape

100+

Colleges and Universities

503K

Total Student Population

147K

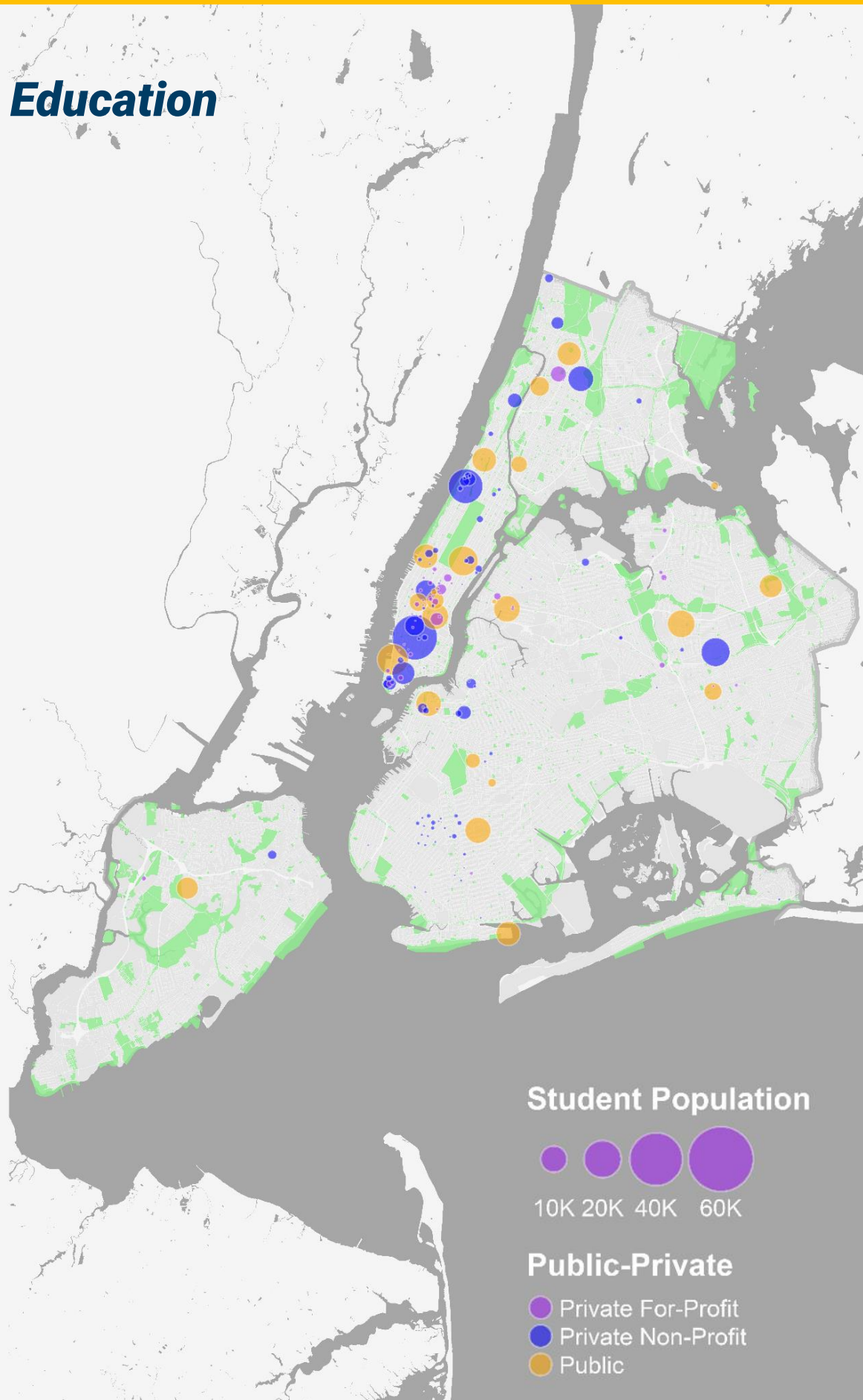
Degrees Granted in 2023

\$35B

Annual Economic Impact

140K

Jobs in Higher Education



The Economic Impact of the Academia Sector

Higher education institutions are important economic engines in New York City's overall economic health and dynamism. Not only do they generate approximately \$35 billion of economic impact annually—about 1.6% of the city's overall economic output—they help attract and retain young talent, create a wide range of jobs accounting for 3% of all jobs in the city, and drive further economic growth through innovation and entrepreneurship.⁵

Attracting and retaining diverse young talent

The 503,000 students attending NYC colleges and universities come from across NYC, the country, and the world, and they have diverse racial backgrounds: 71% of students are BIPOC—including 20% Black or African American and 27% Hispanic and Latino students—and 31% are foreign-born.⁶ This is similar to NYC's overall racial composition, which includes 70% BIPOC individuals (20% Black or African American and 29% Hispanic/Latino). We also see similar shares of foreign-born populations, with 31% of students and 37% of the city's population overall born outside of the United States.

In addition to the city's large and diverse student population, we also know that New York is the top destination for recent college graduates. According to data from Lightcast, which pulls from publicly available employee profiles, New York was the top destination for students graduating between 2021 and 2024. About 490,000 graduates from across the country ended up in New York, roughly twice as the number currently working in Los Angeles, the second highest destination.⁷

The New York metro area is also the most “sticky” region for college students, tied with

Houston. Sixty-six percent of students who graduated from schools in the region between 2014 and 2024 are working in the region today. By comparison, the same numbers for the Bay Area and Boston metro are just 56% and 40%. The stickiness of NYC schools is similar: 56% of students who graduated from NYC schools between 2014 and 2024 are working in NYC today. New York City is also the top US destination for graduates of top international schools. For example, about 15% of graduate from Oxford University (the top-ranked school outside of the United States) who currently live in the United States live in New York City. The city with next highest share, San Francisco, is home to just 5%. And this pattern holds across top-ranked schools around the world.⁸

New York is a destination for top talent. This helps ensure the city has a robust local workforce, which further helps attract jobs and investment—a key competitive advantage for NYC.

Academia as an employer

The Academia sector employs 142,000 people, accounting for about 3% of all city jobs, which is comparable to the city's real estate sector and fashion industry and a little under half of the tech sector. Over the past two decades, academia employment within colleges and universities has increased at the same rate as the city's overall job growth—keeping the total share of city jobs in academia relatively consistent over that timeframe.

Employees of academic institutions hold varying levels of credentials. About 40% of jobs in higher education are held by professors and other post-secondary educators. These workers earn a median hourly wage of \$61 and require high levels of education, most commonly a doctoral or professional degree. Outside of educators, the remaining support staff spans a wide range of functions, from security guards

and maintenance staff to finance and administrative professionals. About 25% of jobs in academia in 2023 were open to lower and middle-skill workers and did not require a four-year degree. On average, these lower and middle-skill jobs paid about \$29 per hour, slightly higher than the citywide average of \$27.⁹

“Opportunity employment,” defined as jobs that require less than a bachelor’s degree but pay above the area median wage, has historically made up a very small share of total employment in colleges and universities (7% compared to 10% in NYC overall). However, over the past decade, higher education institutions have been more successful at adding these jobs than the city overall. From 2010 to 2022, opportunity employment in higher education grew by 40%, compared to just 1.2% for the city overall. Administrative Assistants, Computer User Support Specialists, and Life and Physical Science Technicians are common jobs within higher education that offer the

opportunity for higher wages for New Yorkers without a four-year degree.¹⁰

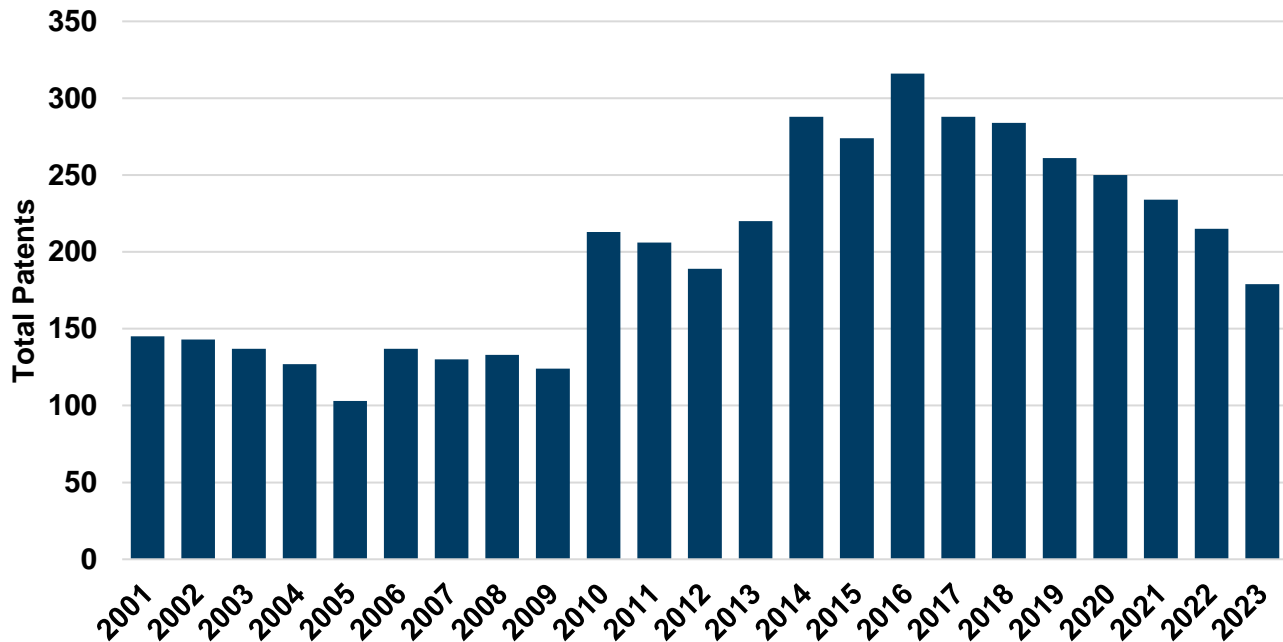
Driving innovation & entrepreneurship

Academic institutions are important drivers of innovation in the city. NYC-based institutions spend an average of \$138 million in R&D as of 2022.¹¹ While New York schools have less research spending per institution than those in other cities overall, Columbia and NYU have seen significant growth in recent years.¹² Research spending at Columbia grew from \$889 million in 2013 to \$1.24 billion in 2022, or 38%. Meanwhile, research spending at NYU grew from \$472 million in 2013 to \$1.276 billion in 2022, a staggering growth rate of 170% that moved NYU from the 42nd to 15th highest ranked institution in the country in terms of R&D expenditures.¹³

In 2022, nearly 80% of R&D spending by NYC institutions went toward life sciences—over 20 percentage points higher than institutions

NYC University Patents Experienced Significant Increase in the Past Two Decades

Figure 1: Approved Patents Tied to NYC Colleges and Universities, 2001 to 2023



Source: NYCEDC analysis of data from USPTO

outside of NYC. By contrast, NYC institutions spent just 6% of R&D dollars on engineering—10 percentage points lower than non-NYC institutions. Accordingly, a higher share of R&D spending at New York City institutions is funded by the US Department of Health and Human Services (51%)—which encompasses National Institutes of Health (NIH), the Center for Disease Control and Preservation (CDC), Food and Drug Administration (FDA), and other federal agencies that fund research—than at non-NYC institutions (34%), and a lower share comes from the US Department of Defense (3% vs. 11%).¹⁴

R&D funding is an important catalyst for technology development, which can ultimately lead to new companies and jobs. Innovations can then be commercialized through patenting and turned into new startups. Venture capital can help startups develop and expand. Upon growth, startups can become employers.

Since 2001, 4,780 patents have been issued from university research in NYC.¹⁵ A large portion of these are focused on innovation in life sciences, including more than 1,900 patents in pharmaceuticals, 1,800 in biotechnology, and approximately 600 in both medical technology and chemistry. The total number of patents issued from NYC university research lags only the Bay Area, which has long been the most prominent node of STEM research and technology development. The rate of patenting by NYC universities has also increased significantly over the last decade. Whereas 100-150 patents were issued per year in the early 2000s, 200-300 patents have been issued every year since 2014. This is predominantly driven by the large research universities such as Columbia and NYU, and it mirrors a broader stratification of R&D in NYC.

In addition, nearly 500 startups have been formed by NYC university researchers or alumni between 2010 and 2021. Nearly half of

these are connected to Columbia University and another 28% are from NYU. Academic medical centers—Mt. Sinai, Memorial Sloan Kettering, and Albert Einstein College of Medicine—make up another 25%, and Rockefeller University and CUNY close out the list of contributing institutions with 1% each. Technology transfer offices (TTO) often play a role in this commercialization process. Formally tasked with protecting and commercializing intellectual property developed at a university, a TTO's functions may include administrative support and advisory on patenting, licensing, startup establishment and funding, and legal support.

Shift toward STEM and technical disciplines

While NYC institutions still provide a wide array of degree offerings, there was a 42% increase in STEM degrees issued between 2013 and 2023. Computer science degrees increased the most, with 6,500 more degrees issued in 2023. Degrees issued in psychology, engineering, and biological and biomedical sciences also increased. In 2023, 30% of all degrees awarded in NYC were STEM degrees.¹⁶ The growth in STEM degrees underpins the growth of NYC's tech and applied sciences sectors. [Prior research from NYCEDC](#) showed that growth in STEM employment in NYC has far outpaced the city's overall employment growth as well as the growth in STEM nationally. Growth in the STEM sector in NYC has been even stronger since the COVID-19 pandemic began, growing by more than 18% since 2019.

However, degrees issued in certain other fields—including business, healthcare, liberal arts, and legal professions—decreased over the last decade. Business, management, and marketing saw the largest drop-off, with 3,400 fewer degrees issued by NYC institutions between 2013 and 2023.

NYC Schools Ranked in the Top 100 for Economic Mobility

Rank	School
1	Vaughn College of Aeronautics and Technology
2	CUNY Baruch College
3	CUNY City College
4	CUNY Lehman College
6	CUNY John Jay College of Criminal Justice
8	Pace University
10	CUNY New York City College of Technology
13	CUNY Brooklyn College
16	CUNY Hunter College
19	United Talmudical Seminary
20	CUNY Queens College
25	CUNY York College
26	St. John's University-New York
32	St. Francis College
33	CUNY Hostos Community College
38	CUNY Borough Of Manhattan Community College
40	CUNY LaGuardia Community College
43	CUNY Bronx Community College
44	College of Mount Saint Vincent
45	Berkeley College-New York
51	CUNY Queensborough Community College
65	CUNY Medgar Evers College
70	CUNY Kingsborough Community College

A foundation of economic opportunity

Higher education offers a promise of equitable paths to opportunity. The median annual salary for a full-time working resident with a bachelor’s degree or higher is about double the median income for full-time working residents with a high school diploma and no college education (\$94,000 vs \$42,000 in 2022).¹⁷ Forty-five percent of people in the New York metro area hold at least a bachelor's degree, and 19% hold a graduate degree. While higher than the US overall and major metro areas such as Los Angeles and Philadelphia, educational attainment in the region lags the Boston (52% bachelor’s attainment, 25% graduate attainment), San Francisco (53%, 23%), Washington DC (55%, 28%), and Seattle (49%, 20%) metro areas.¹⁸

NYC academic institutions are among the most effective in enabling upward mobility—making up 13 of the 20 best colleges nationwide in terms of graduates moving from the bottom 20% of household income to the top 20%. CUNY makes up five of the top 10 and broadly plays an important role as a cornerstone of economic mobility for New Yorkers.¹⁹ Eighty-two percent of CUNY students attended NYC high schools and the likelihood of CUNY and SUNY graduates staying in the city after graduation is higher than institutions in the city overall—ranging from 40-50%.^{20 21} Additionally, five NYC institutions are in the top 20 institutions for students moving from the bottom 20% of income distribution to the top 1%: Columbia University, CUNY Baruch, Vaughn College of Aeronautics & Technology, Cooper Union, and SUNY Maritime.²²

Emerging Sector Trends

Some new sector-level trends are emerging, offering a glimpse into how the sector may continue to evolve.

Declines in enrollment

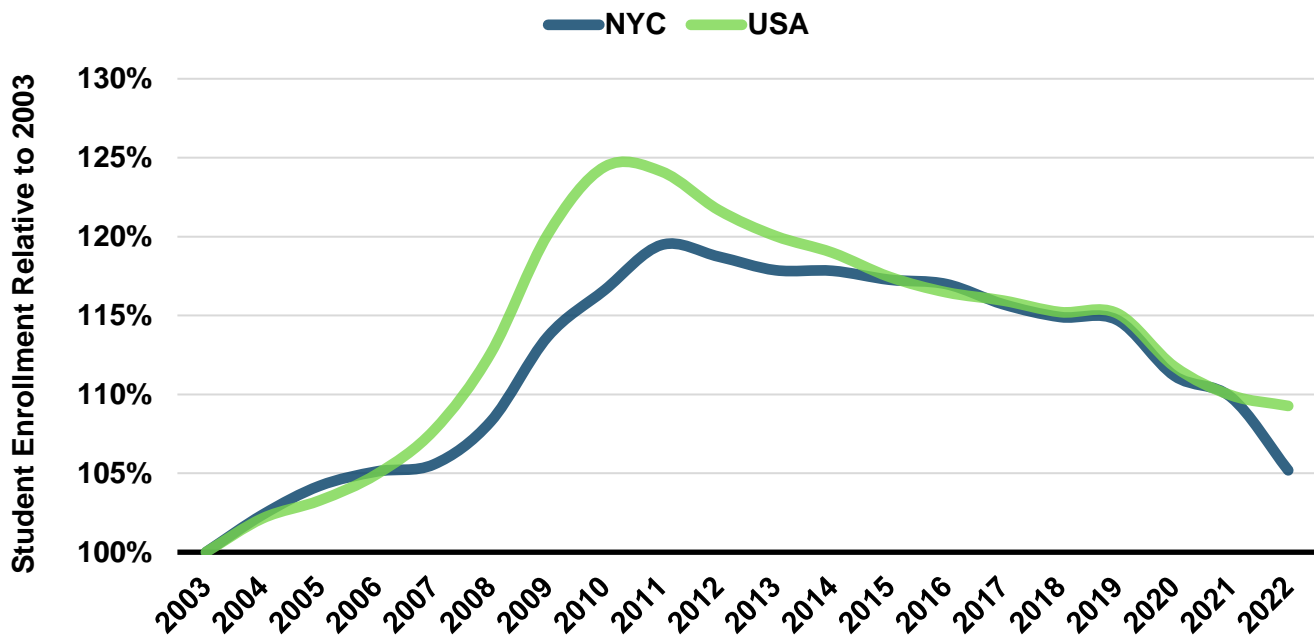
Universities across the country are facing an enrollment cliff, and NYC is no exception. Undergraduate enrollment across the US decreased by 13% between 2013 and 2023. The decrease has been more acute at two-year public institutions, where enrollment declined 30%.^{23 24} Consistent with this national trend, enrollment in NYC-based institutions has declined 11% between 2013 and 2022. CUNY, which includes most of the two-year colleges in the city, saw a 16% drop-off in enrollment. Notably, the City’s largest institutions, NYU and Columbia, have continued to increase

enrollment, each growing by about 30% over the past decade.²⁵

The reduction in annual birth rates since the 1990s is likely a key contributor. Between 1990 and 2016, the annual birth rate in NYC declined 16%,²⁶ which translates to fewer college-age youth in the following decades and, in lieu of dramatic increases in international enrollment and adult education, decreases the maximum possible college enrollment. These enrollment figures do not include workforce training programs, such as apprenticeship programs and skills bootcamps, which could be increasingly relevant alternatives to college for people who are not inclined to pursue higher education, or who are looking to upskill or make a career pivot.²⁷ The market for coding bootcamps is projected to see significant growth in the coming decade, while apprenticeship opportunities across the US have more than doubled over the past decade,

Enrollment at Colleges and Universities Has Declined Nationally and in New York City.

Figure 2: NYC vs. USA Enrollment Trend, 2003-2022



Source: NYCEDC analysis of data from Lightcast and NCES

with over 580,000 active apprenticeships in 2023.^{28,29} NYC has a lower share of the adult population participating in apprenticeships (0.21%) than peer cities (e.g. Philadelphia has 0.57%) and NYC apprenticeships are primarily concentrated in the building trades.³⁰ However, NYC has committed to connecting 30,000 New Yorkers to apprenticeships in a diversity of sectors by 2030.³¹

Slowing growth in degree completions

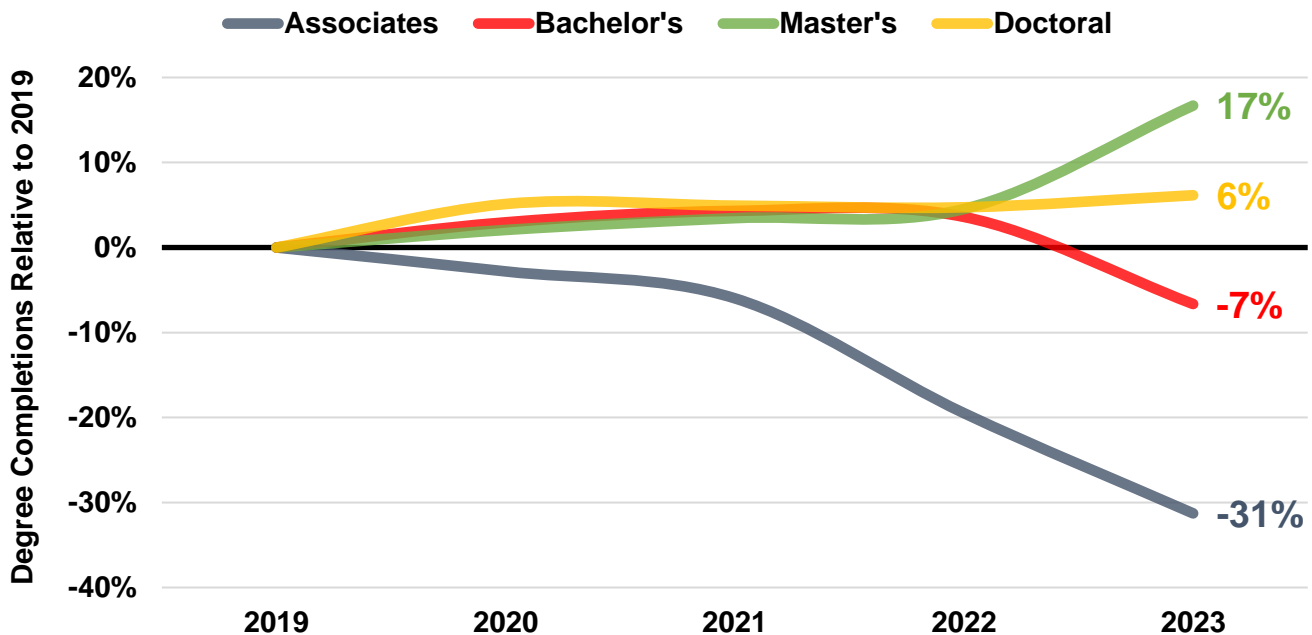
While overall enrollment has declined over the past decade, annual degree completions have remained relatively consistent, growing from 147,400 awarded in 2013 to 151,100 awarded in 2022. In 2023, we saw the first significant signs that enrollment declines were starting to affect degree completion totals. That year, 147,000 degrees were awarded in New York City, the lowest number since 2011. Compared to national trends, growth in degree

completions in NYC over the past decade has been slower. In 2021, when the total number of degrees issued by NYC institutions peaked and was at 105% the level seen in 2013, degrees awarded nationally were at 109% the 2013 level.

Recent declines in total degree completions have been driven largely by associate and bachelor's degrees. Between 2022 and 2023, the number of master's degrees awarded in the city ticked up significantly, driven primarily by STEM fields: Information Technology (including Computer Science and Engineering), Management, and Data Analytics saw the most significant growth. While graduate degrees may see less or delayed impacts of smaller age cohorts, they are also likely boosted by employer demand for technical skills, reflecting the growth in STEM fields more broadly, as discussed above.

Declines in Degree Completions Have Been Most Notable at the Associate's Level. Graduate Degree Completions Have Increased During the Pandemic.

Figure 3: Change in Degree Completions by Level, 2019 to 2023



Source: NYCEDC analysis of data from Lightcast and NCES

Expansions and consolidation

Large, well-recognized institutions are developing or expanding their presence in New York City. Yeshiva University announced a major expansion in Herald Square with a new campus focused on Health Sciences and NYU is developing an additional engineering facility at 3 Metrotech, building on previous investments in Downtown Brooklyn.³² Pace University is opening a new educational and student housing building that supports experiential education and is reconstructing an existing facility to provide new community spaces and state-of-the-art creative facilities.³³ The City is also investing to ensure academic facilities are fulfilling evolving needs and preparing students to enter the workforce. The SPARC Kips Bay project, for example, brings healthcare, public health, and life sciences programs from three CUNY schools—Hunter College of Nursing, Graduate School of Health & Health Policy, and Borough of Manhattan Community College—into a single state-of-the-art facility with spaces for practical and interdisciplinary learning.

Non NYC-based universities are also opening new campuses in the city, with Cornell Tech as an early example that demonstrates the city's attractiveness to major academic institutions and the value that academic expansions can bring to the city's economy. For example, in addition to bringing more young talent to the city, Cornell Tech has spun out 100 startups since its inception and been at the forefront of innovation in AI.³⁴ Most recently, Nashville-based Vanderbilt University established a new campus in Chelsea, citing NYC's "status as a talent magnet, diverse and highly educated workforce, and proximity to leading institutions across a variety of sectors" as key draws.

As large, global universities expand in New York City, some smaller institutions are closing or merging with larger ones, citing enrollment

declines and a desire to provide students better resources to meet the needs of industry. St. John's University announced the closure of its Staten Island campus earlier in 2024, while Marymount Manhattan College recently announced a merger with Northeastern University, with Marymount Manhattan's Upper East Side campus now being considered Northeastern's 14th global campus. The merger of NYU and Polytechnic University in 2014 is an early example of this consolidation in the face of enrollment and financial challenges for smaller institutions.

Increasing collaboration between institutions

Colleges and universities, including international institutions, are implementing different models of interschool collaboration and engagement with the broader city context. NYU's new partnership with South Korea's Korea Advanced Institute of Science and Technology (KAIST)'s—which includes research collaborations between the two institutions' faculty, joint degree programs, as well as student exchange programs—is a prime example of instruction-oriented collaboration. Cornell Tech is another. The Roosevelt Island-based institution is a collaboration between Cornell University and Technion Institute and is home to the SUNY-affiliated School of Industrial & Labor Relations.

CUNY schools have also has partnered with other institutions including through CUNY Graduate Center's Advanced Science Research Center, which is open to affiliate membership from both CUNY and non-CUNY researchers, and programs like NSF's Materials Research Science & Engineering Centers, in which City College of New York partnered with Columbia to establish a Center for Precision Assembled Quantum Materials as part of an NSF-funded network of material research hubs.^{35 36}

New York City is also home to multiple marquee research collaborations that reach beyond the bounds of the academia sector. The New York Climate Exchange—an organization building a state-of-the-art educational and research institution on Governors Island—takes collaboration to another level. It is a consortium led by Stony Brook University and 14 other core partners including universities from around the country and beyond: Duke, Georgia Tech, University of Washington, Rochester Institute of Technology, CUNY, SUNY Maritime, University of Oxford, and NYU.³⁷ In addition, the consortium includes dozens of advisory and community partners “on the frontlines of the fight against climate change.”³⁸

The Chan Zuckerberg Initiative is a nationwide effort that leverages philanthropy and technological research to address societal health challenges. It includes the establishment of “biohubs” in cities across the country, each with a different research focus and different academic partners. The New York BioHub will focus on immune cell research, bringing together researchers from Columbia, Rockefeller, and Yale universities, while also being part of the larger biohub network.

This type of cross-sector and cross-university partnership is a promising frontier for academia that can enrich the quality of research and commercial activity incubated in the city.

Conclusion

Academic institutions play a large and important role in New York City’s economy. Not only do they contribute \$35 billion of economic impact every year, serve 503,000 students, and employ over 140,000 people, they also are an important cornerstone of equitable economic development by attracting and retaining young talent, driving research and innovation, and promoting economic mobility.

New York’s academic institutions can play an important role in increasing New York’s continued competitiveness and NYCEDC is working with academic partners to jointly mobilize around priority actions to reinforce the academia sector’s ability to drive economic growth and mobility in New York City.

About NYCEDC

New York City Economic Development Corporation is a mission-driven, nonprofit organization that works for a vibrant, inclusive, and globally competitive economy for all New Yorkers. We take a comprehensive approach, through four main strategies: strengthen confidence in NYC as a great place to do business; grow innovative sectors, with a focus on equity; build neighborhoods as places to live, learn, work, and play; and deliver sustainable infrastructure for communities and the city's future economy. Learn more at edc.nyc.

For more economic data, insights, and analysis from NYCEDC's Economic Research & Policy group, and to receive economic reports via email, visit edc.nyc/insights.

Contact us: press@edc.nyc | **Follow us:** [@nycedc](https://twitter.com/nycedc)

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¹ Institution counts, enrollment, and degree completions are based on data from US Department of Education and include post-secondary education institutions eligible for federal financial aid.

² Employment figures are based on industry three NAICS codes (6112 – Junior Colleges; 6113 – Colleges, Universities, and Professional Schools; 6115 – Technical and Trade Schools) and reporting from NYS DOL and the US BLS. These figures do not include university hospital employment

³ <https://therealdeal.com/new-york/2022/10/20/trd-pro-these-universities-have-the-largest-nyc-real-estate-footprints/>

⁴ <https://therealdeal.com/new-york/2016/04/04/cuny-school-to-relocate-from-bryant-park-to-new-uws-digs/>

⁵ Includes direct, indirect, and induced impact

⁶ NYCEDC analysis of ACS PUMS, 2022 5-year estimates

⁷ NYCEDC's analysis of data from Lightcast, which pulls from public online profiles like LinkedIn.

⁸ NYCEDC's analysis of data from Lightcast, which pulls from public online profiles like LinkedIn.

⁹ NYCEDC's analysis of occupational data from Lightcast

¹⁰ NYCEDC analysis of occupational data from Lightcast

¹¹ McKinsey analysis of NSF HERD

¹² Research funding may come from federal sources including the National Science Foundation, Department of Health & Human Services, Department of Energy, Department of Defense, NASA, and Department of Agriculture; State and local governments, businesses, nonprofits, and academic institutions themselves, or other sources.

¹³ McKinsey analysis of NSF HERD

¹⁴ McKinsey analysis of NSF HERD

¹⁵ Based on NYCEDC's analysis of data from USPTO

¹⁶ NYCEDC analysis of data from Lightcast and IPEDS

¹⁷ NYCEDC analysis of ACS data

¹⁸ ACS 2023 1-year estimates

¹⁹ McKinsey analysis of Opportunity Insights data

²⁰ <https://comptroller.nyc.gov/reports/spotlight-cuny-and-the-new-york-city-economy/>

²¹ <https://comptroller.nyc.gov/reports/spotlight-cuny-and-the-new-york-city-economy/>

²² McKinsey analysis of Opportunity Insights data

²³ <https://public.tableau.com/app/profile/researchcenter/viz/CTEEFall2023dashboard/CTEEFall2023>

²⁴ https://nces.ed.gov/programs/digest/d23/tables/dt23_303.70.asp

²⁵ NYCEDC analysis of data from Lightcast and IPEDS

²⁶ <https://www.nyc.gov/assets/doh/downloads/pdf/epi/databrief132.pdf>

²⁷ <https://www.forbes.com/advisor/education/bootcamps/online-coding-bootcamps-by-the-numbers/>

²⁸ <https://www.forbes.com/advisor/education/bootcamps/coding-bootcamp-statistics/>

²⁹ <https://www.nyc.gov/assets/wkdev/downloads/pdf/nyc-apprenticeship-landscape-report.pdf>

³⁰ <https://www.nyc.gov/assets/wkdev/downloads/pdf/nyc-apprenticeship-landscape-report.pdf>

³¹ <https://www.nyc.gov/office-of-the-mayor/news/465-24/mayor-adams-celebrates-major-progress-administration-s-moonshot-goal-delivering-30-000>

³² <https://www.yu.edu/news/yu/yeshiva-university-announces-plans-create-new-health-sciences-campus-herald-center-midtown>

³³ <https://www.pace.edu/news/paces-big-plans-downtown>

³⁴ <https://live.tech.cornell.edu/impact/>

³⁵ <https://asrc.gc.cuny.edu/our-people/affiliate-faculty/>

³⁶ <https://mrsec.org/>

³⁷ Core Partners include Stony Brook University, GOLES, Pratt Institute, Georgia Tech, BCG, Duke University, IBM, Pace University, University of Washington, Rochester Institute of Technology, CUNY, SUNY Maritime College, Moody's, University of Oxford, and NYU

³⁸ <https://nyclimateexchange.org/the-partners/>