



Postsecondary Equity & Economics Research Project

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Exploring the Growth of Master's Degree Programs in the United States

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The views expressed in this policy brief are solely those of the authors.

Declining numbers of undergraduate students have been a concern for the vast majority of higher education institutions since the Great Recession. Colleges experienced a 15% decline in undergraduate enrollment between 2010 and 2021 (National Center for Education Statistics, 2023b). These enrollment losses have led many institutions to turn to growing their numbers of graduate and professional students in order to stabilize their budgets. During the same period, graduate enrollment increased by nine percent (National Center for Education Statistics, 2023a). Most of this growth in graduate enrollment has been in master's degrees, which make up more than eight in ten graduate degrees awarded (National Center for Education Statistics, 2023a).

This growth in master's degree enrollment is driven by a combination of institutions starting graduate programs for the first time (Acton, 2022) and institutions expanding upon their suite of existing programs. It is important to understand the characteristics of these new master's degree programs because while adults with a master's degree earn an average of \$14,000 more per year than individuals with a bachelor's degree (Ma & Pender, 2023), it is increasingly clear that not all programs pay off for students or taxpayers. New data show that some programs leave students with high debt burdens relative to their earnings after completing a master's degree (Delisle & Cohn, 2022; Korn & Fuller, 2021), and taxpayers provide substantial subsidies to graduate student borrowers through income-driven repayment programs (Kiska, 2023). Graduate students represent only 21% of all students in higher education, but represent 47% of all federal student loans disbursed in the 2021–22 academic year (Akers et al., 2023).

The costs and benefits of graduate education have been hotly debated in recent years, resulting in recent policy debates around gainful employment, financial transparency, Grad PLUS loans, and student loan repayment. As a result, a better understanding of the growth of master's degree programs can help policymakers evaluate and forecast impacts on accountability, access, and equity in graduate education. We are particularly concerned about the ability of students from historically underrepresented groups to access high-quality degrees, as Black students and programs with more Black students tend to have a lower return on investment amid labor market discrimination (e.g., Bennett et al., 2023; Christensen, 2024; Minaya et al., 2024).

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Prior research has documented that there has been growth over the last two decades in the fields with a large number of master’s degree programs and in the share of students taking at least some classes online (Blagg, 2018). In this brief, we expand on that work by examining trends through the beginning of the coronavirus pandemic and considering different growth patterns across institutional types. Our research questions are the following:

- (1) Which types of institutions are adding new programs?
- (2) Which fields of study are seeing the most growth?
- (3) What is the breakdown of new programs between fully in-person and hybrid/fully online delivery models?
- (4) What is the racial/ethnic diversity of newer versus longstanding programs?

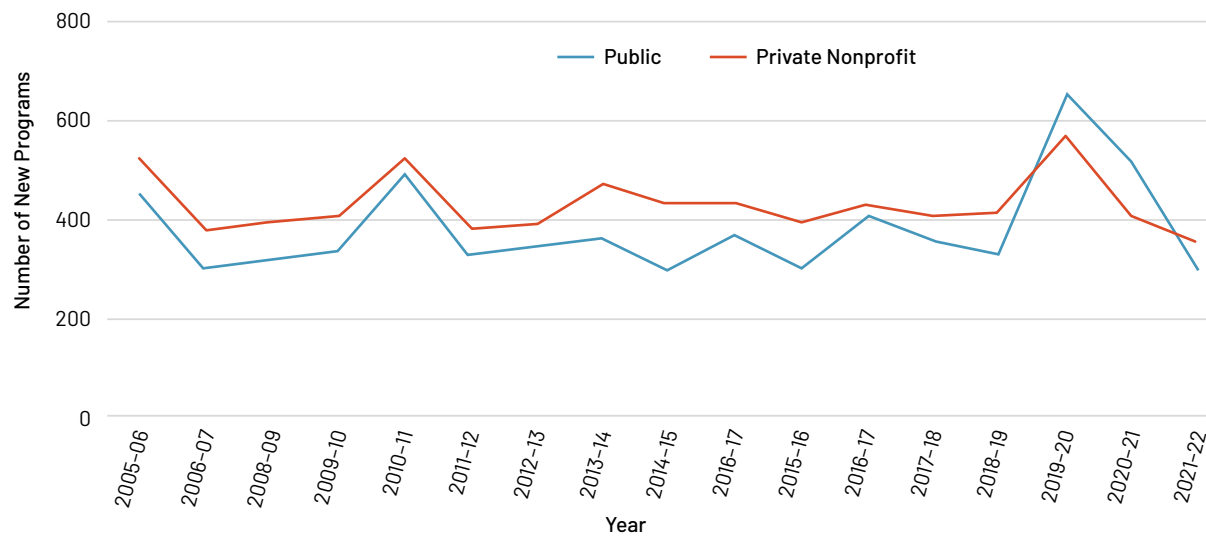
To summarize our key findings, we find a steady rise in the number of master’s degree programs, particularly among private nonprofit universities and in health sciences programs. Online and hybrid programs have been growing more quickly than in-person programs since well before the pandemic, and there are only modest differences in the diversity of graduates based on when their program was established.

ANALYSIS

In our analyses, we examined program-level data from 1,278 public and private nonprofit universities. We defined a program at the 4-digit Classification of Instructional Programs (CIP) level using data from the Integrated Postsecondary Education Data System (IPEDS) from the U.S. Department of Education. IPEDS contains data on the number of completers in each program by race/ethnicity, and also includes some information about the modality of the program (fully in person or hybrid/online). Full details about our methodological approach can be found in the appendix.

We first examined the number of new programs for each year between 2005–06 and 2021–22 by institutional sector and their 2005 Carnegie basic classification, with the results by sector shown in Figure 1 and data by sector and Carnegie classification shown in Table 1 in the Appendix. Overall, colleges added 13,688 programs during this period alongside the 19,858 programs that already existed in 2005, representing a 69% increase in the number of programs. The first key takeaway is that there is no clear trend in the number of new programs offered over time across any of the categories. The number of new programs across all institutions ranged from a low of 650 in 2021–22 to a high of 1,216 in 2019–20. This suggests that colleges did not respond to changes in demand for graduate education when considering whether to start new programs, even when graduate enrollment surged during the Great Recession (National Center for Education Statistics, 2023a).

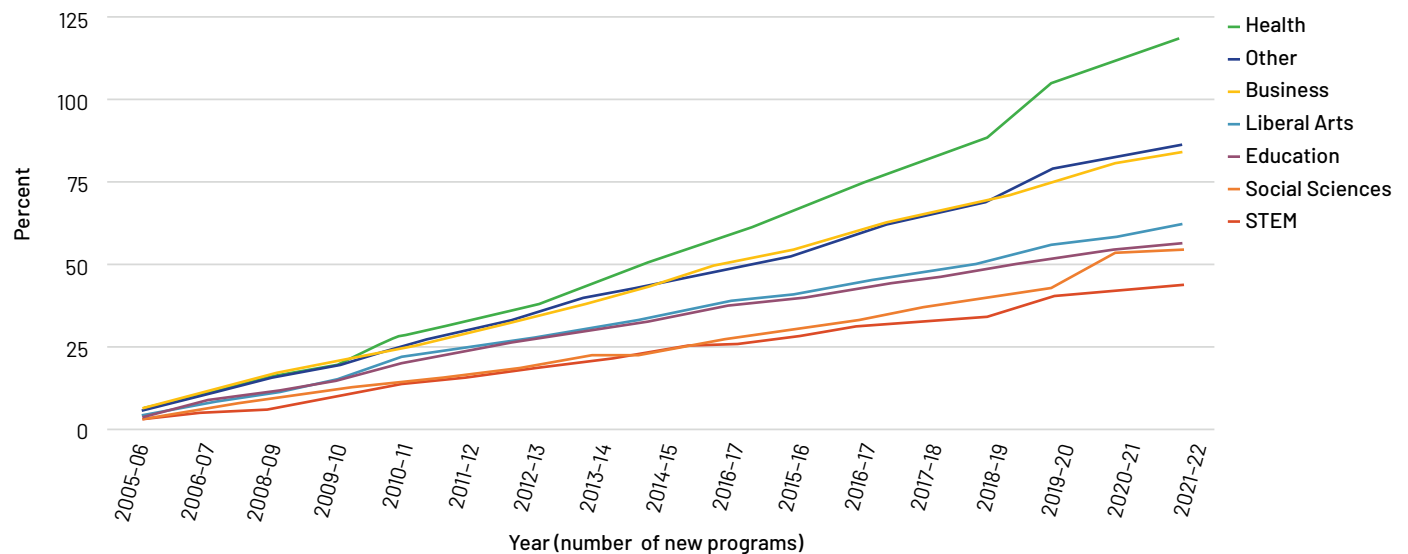
Figure 1: Trends in master’s program growth by institutional sector.



The growth in master’s programs was disproportionately at private nonprofit universities relative to public universities. Nonprofit institutions had 7,314 programs in 2004–05 and started 7,271 new programs through 2021–22 (excluding a small number of discontinued programs), while public institutions had 12,544 existing programs and launched 6,412 new programs. Additionally, the number of programs more than doubled at private master’s-level institutions and increased by 254% at private baccalaureate institutions–colleges that historically had few master’s degree programs and predominantly offered bachelor’s degrees. By comparison, the smallest growth (44%) was at public research universities, the sector with the largest number of master’s programs in 2004–05. Put together, these two findings suggest that colleges that were seeking to diversify revenue sources disproportionately focused on starting new master’s degree programs.

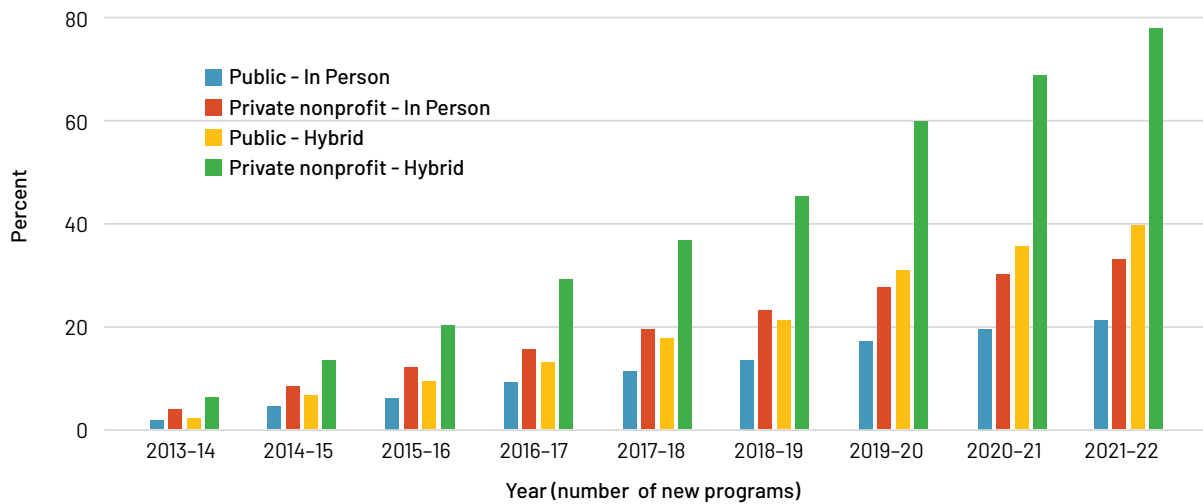
To look at which fields of study experienced the most growth, we looked at the number of new programs each year within education, STEM, business, health, social sciences, liberal arts, and other (Figure 2). The fastest growth was in health-related fields, which saw an increase of 120% since 2004 from a base of 1,563 programs and tend to generate higher returns on investment than many other fields of study (Minaya et al., 2024). Notably, the number of health programs added each year increased in the early 2010s. This compares to education, which saw 57% growth during the period but a notable decline in the number of new programs beginning in the mid-2010s. This corresponds with reduced enrollment in educator preparation programs nationwide during this period (Will, 2023). STEM (45%) and social sciences (56%) had the lowest growth rates, while business (85%) and other (87%) had higher than average growth rates. In general, health science, engineering, and physical science programs tend to be more expensive to operate than other programs (Hemelt et al., 2021), suggesting that institutions may not be generating excess revenue from many of these new programs.

Figure 2: Trends in master’s program growth by field of study.



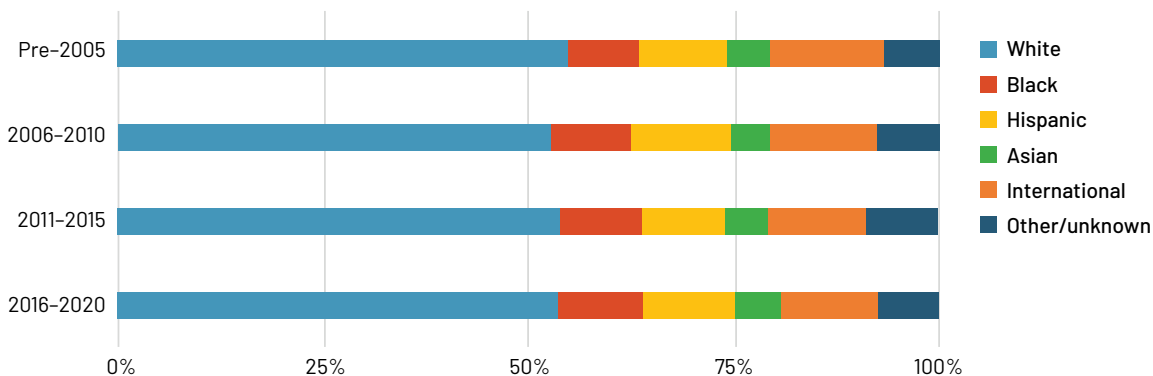
We then looked at the trends in master’s program growth by modality of offering (fully in-person and hybrid/fully online delivery models), with data first available in 2012–13. The majority of both existing programs in 2012–13 and new programs created since then have been fully in person (Figure 3). Yet the growth rate of programs with at least some distance education components has been substantially higher than the growth rate of fully in-person programs, even before the pandemic. This is particularly true at private nonprofit colleges (78% growth in programs with at least some distance education compared to 33% for in-person programs), but also for public institutions (40% versus 21%, respectively).

Figure 3: Trends in master’s program growth by modality of offering and sector.



Lastly, we examined the racial/ethnic diversity of program graduates in the 2021–22 academic year based on when programs first began operating. As highlighted in Figure 4, programs that had been operating the longest (since at least 2005) tended to have smaller shares of Black students and larger shares of international students than newly established programs. However, these differences over time are relatively modest. This general finding also held across STEM and the social sciences, with STEM having the fewest Black students and the most international students of any field of study. Newly established business programs served more international students and fewer Hispanic students than longstanding programs. Finally, there was little clear trend in the demographics of education and health graduates based on when the program first began.

Figure 4: Student diversity in 2021–22 by year of program establishment.



DISCUSSION

As competition for undergraduate students has become increasingly fierce, universities have increasingly turned to growing their graduate student populations in an effort to both shore up their finances and enhance their prestige (e.g., Marcus, 2017; Miller, 2019). Notably, the creation of the Grad PLUS loan program and the expansion of income-driven repayment options have reduced the financial barriers for students who seek a graduate credential and make it easier for universities to enroll students in new programs. In this brief, we provide an overview of the growth of new master’s degree programs since the mid-2000s and provide insights about the types of institutions, fields of study, and delivery models seeing the most rapid growth. We also examine the racial/ethnic diversity of these new programs to explore whether they are attracting students who have traditionally been underrepresented in graduate education.

Colleges have steadily added more master's degree programs since 2004–05, with a 69% increase in programs during this period. Private nonprofit institutions have disproportionately added programs, which suggests that they may be more willing to meet perceived market needs in an effort to generate additional revenue. Hybrid and fully online programs have grown faster than in-person programs, and that trend is likely to accelerate in the aftermath of the pandemic. Programs have been added at the fastest rate in health science fields and at the slowest rate in other STEM fields. Finally, while there are some small differences in the racial/ethnic characteristics of students enrolling in newer versus more established master's degree programs, there is no clear trend of new programs being more or less racially diverse than longstanding programs.

Our descriptive analyses of program growth raise two key policy-relevant questions. The first question is why universities started such a large number of master's degree programs over the past two decades. Federal policies, such as the creation of Grad PLUS loans, Public Service Loan Forgiveness, and income driven repayment, may have played a role. But market demand for new credentials and universities seeking prestige and additional revenue may also be drivers, and more research is needed to further unpack these data.

The second question is whether these new programs generate a comparable return on investment for students and taxpayers relative to existing programs and whether this differs by field of study. Policymakers should be concerned if students from newer programs have higher debt burdens and lower earnings than students from longstanding programs, especially as graduate student lending becomes a larger part of the federal student loan portfolio. The new financial value disclosures in the Biden administration's gainful employment regulations should provide additional insights. The final question is whether the return on investment varies based on the racial/ethnic diversity of programs, as detailed debt and earnings data by race/ethnicity do not exist. This could provide insights into whether master's degrees reduce or expand inequality.

There is much work to be done to understand the growth of master's degree programs and the implications for students, taxpayers, and the general public. These issues will play a central role in higher education policy discussions as Higher Education Act reauthorization continues to be debated. In the next year, our team will produce more research on the implications of the growth of master's degree programs to help inform policy conversations.

METHODOLOGICAL APPENDIX

We began by examining all public and private nonprofit colleges classified as non-special-focus institutions primarily granting bachelor's or graduate degrees in the 2005 Carnegie classifications. This resulted in an initial sample of 1,278 institutions in the 50 states, Washington, DC, and American territories and commonwealths. We excluded for-profit institutions because only 25 institutions met our initial inclusion criteria and a number of them closed during the period of analysis.

We used completions data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) to determine unique master's degree programs. As such, we are likely capturing programs 1–2 years after they first enrolled students due to the lag between enrollment and completion. IPEDS relies on the Classification of Instructional Programs (CIP) to define programs and does so at the 6-digit level. We aggregated CIP codes to the 4-digit level because 6-digit CIP codes are often specialties within a broader program of study that can be taught using existing faculty and resources, while a new 4-digit CIP code likely requires an additional investment.¹ For example, 52.08 is the 4-digit CIP code for finance and financial management services. This has eight 6-digit CIP codes underneath it, including financial planning, investments and securities, and public finance. Other 4-digit CIP codes within business include accounting (52.02), hospitality management (52.09), and marketing (52.14). Overall, there were 365 unique 4-digit CIP codes in our data.

The period of study for the first two research questions begins in the 2004–05 academic year, which is the first year that colleges were required to report completions using the 2000 CIP code system after several years of being allowed to choose between 1990 and 2000 CIP codes. For the third research question, we began in 2012–13 because that is when IPEDS began collecting data on program modality. Colleges switched to the 2010 CIP code system in the 2009–10 academic year and the 2020 CIP code system in the 2020–21 academic year. We harmonized the three versions to 2010 CIP codes by tracking changes at the 6-digit CIP level before aggregating to the 4-digit CIP level. In three cases (viticulture and enology, Talmudic studies, and nursing education), part of a 2010 CIP moved into a 2020 CIP that existed in 2010. We dropped 2020–21 and 2021–22 data on those programs for both the old and new CIP because we could not disaggregate new programs due to the coding change. This affected 67,918 graduates in 2020–21, with nearly 56,000 of those graduates being in nursing education.

We first limited our sample to programs that ever reported at least one graduate between 2004–05 and 2021–22; this excluded 2,043 programs at 675 colleges and resulted in a final analytic sample of 33,245 programs at 1,258 colleges. We then defined a program as existing in a given year if a college reported data on the number of graduates for any 6-digit CIP code within the broader 4-digit CIP code, even if the number reported was zero. It appears that some programs exist for several years, disappear, and then return. Given the bureaucratic process of starting new academic programs, we expected that most of those apparent discontinuations were data reporting errors instead of programs that were shut down and then quickly restarted.

Between the 2005–06 and 2020–21 academic years, we identified 10,826 apparent program discontinuations. Thirty-one percent of these apparent discontinuations had graduates in years following the discontinuation, raising the possibility of data reporting errors. We examined the existence of programs during periods with missing data in IPEDS by using the Wayback Machine to examine institutional websites and academic catalogs. Our review found that the vast majority of programs that reported graduates in later years continued to exist when the program was apparently discontinued in IPEDS. This led us to recode these missing years as having zero graduates, which stops these programs from being classified as new programs in later years but likely understates the true number of graduates.

To answer our first research question (trends in the number of new programs), we examined institutions by institutional sector and their 2005 Carnegie basic classification. To answer our second question (new programs by field of study), we divided programs into broad disciplinary groupings based on 2-digit CIP codes. This included STEM (two-digit CIP codes of 1, 3, 11, 14, 15, 26, 27, 40, and 41), education (13), business (52), health (51), social sciences (42, 44, and 45), liberal arts (5, 9, 16, 23, 24, 30, 38, 50, and 54), and other (all else). While a few 6-digit CIP codes within 2-digit CIP codes are considered STEM-eligible by the federal government (such as some subfields of economics within the broader social sciences CIP), traditional STEM fields are captured by this classification.

For our third research question (new programs by delivery model), we used IPEDS data (first available in the 2012–13 academic year) on whether programs can be completed via distance education. Between 2012–13 and 2018–19, the IPEDS completions survey included a question on whether at least one program within a 6-digit CIP code can be completed via distance education. This changed in 2019–20 to provide details as to whether all, some, or none of the programs within the 6-digit CIP code can be completed via distance education. For the sake of consistency, we created two categories over time at the 4-digit CIP code level: all programs are fully in person or at least some programs within the CIP code are able to be completed via distance education. Our final research question (diversity of new programs) examined the average share of graduates by race/ethnicity (White, Black, Hispanic, and Asian along with international students) by field of study using IPEDS completions data in 2021–22. We divided programs into four groups based on when they first graduated students (2005 or earlier, 2006–10, 2011–15, and 2016–20) to see if there were any differences in student diversity based on when programs were established.

Table 1: Trends in master’s program growth by sector and 2005 Carnegie classification.

YEAR (Number of new programs)	ALL COLLEGES	PUBLIC			PRIVATE NONPROFIT		
		Research	Master’s	Baccalaureate	Research	Master’s	Baccalaureate
2005-06	975	268	164	24	220	212	87
2006-07	673	162	121	13	138	157	82
2007-08	710	163	140	13	117	193	84
2008-09	740	173	135	25	121	184	102
2009-10	1,010	300	174	15	180	226	115
2010-11	707	184	124	17	113	188	81
2011-12	731	195	129	17	103	188	99
2012-13	824	183	153	21	129	240	98
2013-14	721	166	111	16	148	186	94
2014-15	788	167	170	24	108	216	103
2015-16	695	158	122	19	122	174	100
2016-17	829	208	176	21	116	187	121
2017-18	761	205	130	22	130	174	100
2018-19	741	186	117	23	128	173	114
2019-20	1,216	410	210	27	157	256	156
2020-21	917	324	165	24	140	171	93
2021-22	650	161	122	20	108	152	87
Programs in 2004-05	19,858	8,239	4,188	117	3,582	3,056	676
New programs since 2005	13,688	3,613	2,463	341	2,278	3,277	1,716
Percent growth	68.9%	43.9%	58.8%	291.5%	63.6%	107.2%	253.8%
Number of colleges	1,258	167	259	69	104	323	336

Source: Authors’ analyses of Integrated Postsecondary Education Data System completions data.

Notes: (1) Programs are based on four-digit Classification of Instructional Programs (CIP) codes.

(2) Not all of these programs continued to exist throughout the entire panel.

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ENDNOTES

- 1 During the 2010s, just over 15% of all 4-digit CIP codes contained multiple 6-digit CIP codes, and that share has been slowly rising over time (Blagg et al., 2021).