THE UNIVERSITY OF NORTH CAROLINA SYSTEM

UNC SYSTEM
WORKFORCE ALIGNMENT REPORT

April 15, 2026

University of North Carolina System
Raleigh, North Carolina

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1 Background

1.1 Purpose

The purpose of this report is to assess alignment of University of North Carolina System degrees to North Carolina's workforce needs. Career readiness has been, and remains, at the core of the University's mission since the founding of the constituent universities of the UNC System. Embedded within North Carolina's constitution is a charge for our public universities to encourage and promote "all useful learning." Meeting this charge is in the history and genetic makeup of UNC institutions. Within the UNC System exist two land-grant institutions established to provide practical education in agriculture, mechanical, and industrial arts. Additionally, many UNC institutions were created to train teachers to educate the state's future workforce and to prepare miliary veterans transitioning to the civilian workforce. Not only do UNC institutions have a rich history of addressing state workforce needs through "useful learning," but UNC institutions have continued to evolve and adapt to address the state's changing labor needs in areas such as healthcare, manufacturing, and technology related fields.

The UNC System has made significant strides in increasing student access and success, including increased student enrollment, retention, graduation rates, and other goals established in the UNC System Strategic Plan for 2022-2027. More than 70 percent of undergraduate students who enter the UNC System graduate within five years, and 57 percent graduate within four years (up from 48 percent in 2016), both far outpacing national average graduation rates. Building on these gains, the UNC System and its Board of Governors are now focusing on the success of UNC graduates in the labor force as well as meeting employer needs.

In November 2023, the UNC System published a study on the return on investment (ROI) of a UNC degree. This study found that 93 percent of UNC degree programs provide a positive ROI ($500K median additional lifetime earnings) for UNC undergraduate degree earners compared to those without a degree. More interestingly, while 93 percent of UNC degree programs provided a positive ROI, 96 percent of UNC System students were enrolled in a positive ROI program, demonstrating our students have a natural inclination to value-based programs.

Extending efforts to assess the value of UNC degrees to students and to the state more broadly, the UNC Board of Governors adopted a new policy in May 2024 to assess the alignment of UNC programs with the state's workforce needs. UNC Policy 400.1, *Policy on Academic Program Planning*, requires the UNC System to conduct a biennial review of existing and proposed new academic programs and their alignment to the needs of the state's employers and workforce.

This report represents the first biennial workforce alignment review. This review identifies emerging labor market demands and evaluates alignment between these demands and the UNC System's academic program portfolio, with a broad view of state needs to include both demand for specific skills and important contributions that graduates make to the health, well-being, economic prosperity, and quality of life of North Carolinians.

The UNC System has a ripe opportunity to tap into its rich history as an essential workforce provider and economic engine for the state, and to leverage a vast array of assets across the state including academic programs, healthcare infrastructure, community outreach activities, and more than 100 extension centers.

Today, the UNC System continues to play a key role in producing talent for the state's workforce and economy, awarding 71 percent of all degrees at the bachelor's level and higher awarded by North Carolina

institutions annually. Additionally, the UNC System produces a high proportion of graduates with skills aligned to certain critical workforce areas. During 2019-20 through 2023-24, the UNC System supplied more than 75 percent of all degrees at the bachelor's level and higher in fields of registered nursing, education, engineering, and social work conferred by institutions in North Carolina.

North Carolina is one of the fastest-growing states in both population and economic expansion. The state has been ranked by CNBC as the Best State for Business for three of the last four consecutive years, with economy, workforce, and business friendliness as its three top ranked criteria in 2025.[1,2] In January 2026, economic development magazine *Site Selection* ranked North Carolina first among states for workforce development based on metrics including credentials, degrees, and return on investment for degrees.[3]

In recent years, the state has successfully attracted renowned global companies and major investments, announcing a record-high number of more than 35,000 new job announcements and over $24 billion in new investments in 2025.[4] Additionally, the state's growth and new investments cover a vast array of industries including advanced manufacturing, biopharma, military defense, and tourism. Amidst a period of strong economic tailwinds, the UNC System must be prepared to generate skilled and "work-ready" talent for the state, particularly in a rapidly changing jobs landscape.

1.2 UNC System Overview

The University of North Carolina is a public, multicampus university with 17 diverse constituent universities dedicated to the service of North Carolina and its people. Each institution shares in the overall mission of the University. That mission is to discover, create, transmit, and apply knowledge to address the needs of individuals and society through instruction, research, and public service. The UNC System comprises 17 distinct institutions, including:

- four R1 universities ("Research 1: Very High Research Spending and Doctorate Production");
- five Historically Black Colleges and Universities (HBCUs);
- a Native American-serving institution;
- two land-grant institutions;
- two medical schools and teaching hospitals;
- two law schools;
- a world-class arts conservatory;
- a leading liberal arts college;
- 15 educator preparation schools;
- a premier residential STEM high school; and
- several robust regional institutions.

Collectively, these universities enroll nearly 250,000 students — most of whom (more than 80 percent) are from North Carolina, and more than a quarter of whom are from rural North Carolina counties.[5] Part of the UNC mission is to help these individuals earn college credentials to make their lives better, through higher wages, improved health, and meaningful careers, and to provide skilled graduates to meet the needs of the state's growing economy.

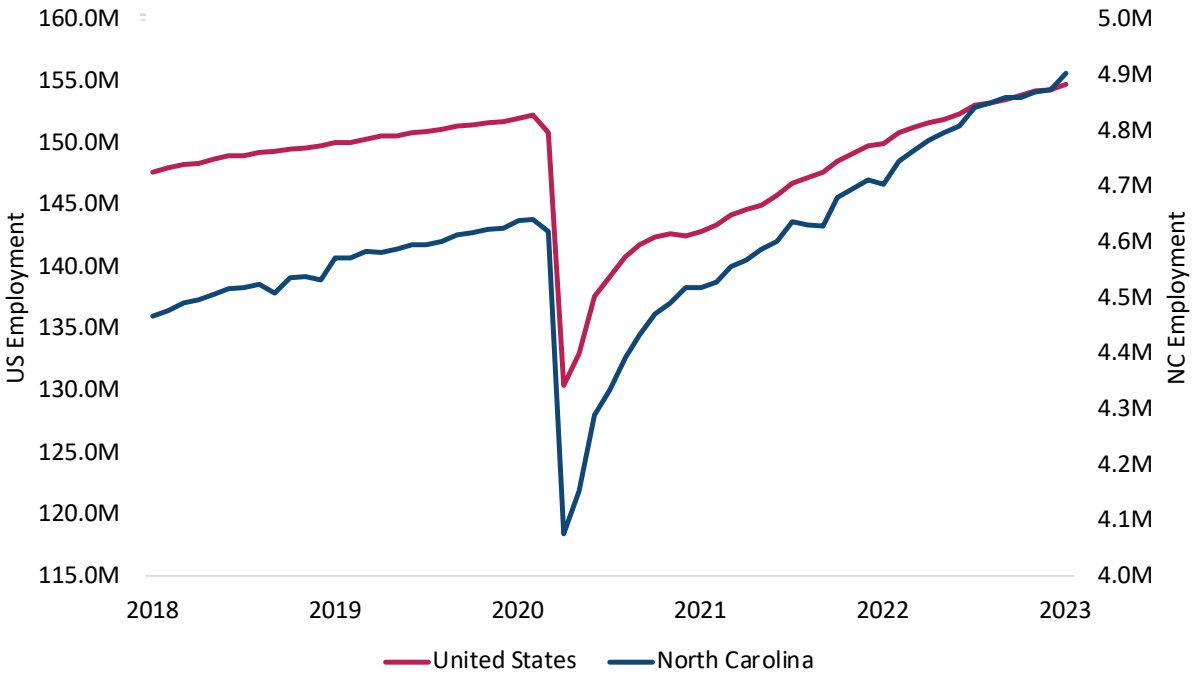
[1] NC Department of Commerce, CNBC Names North Carolina the #1 State for Business, July 10, 2025.
[2] CNBC, America's Top States for Business, North Carolina, July 10, 2025.
[3] NC Office of the Governor, North Carolina Named Number One in Workforce Development by Site Selection Magazine, January 5, 2026.
[4] NC Office of the Governor, North Carolina Named Number One in Workforce Development by Site Selection Magazine, January 5, 2026.
[5] UNC System, About Us.

2 Demand: North Carolina Labor Market

2.1 Overall Employment

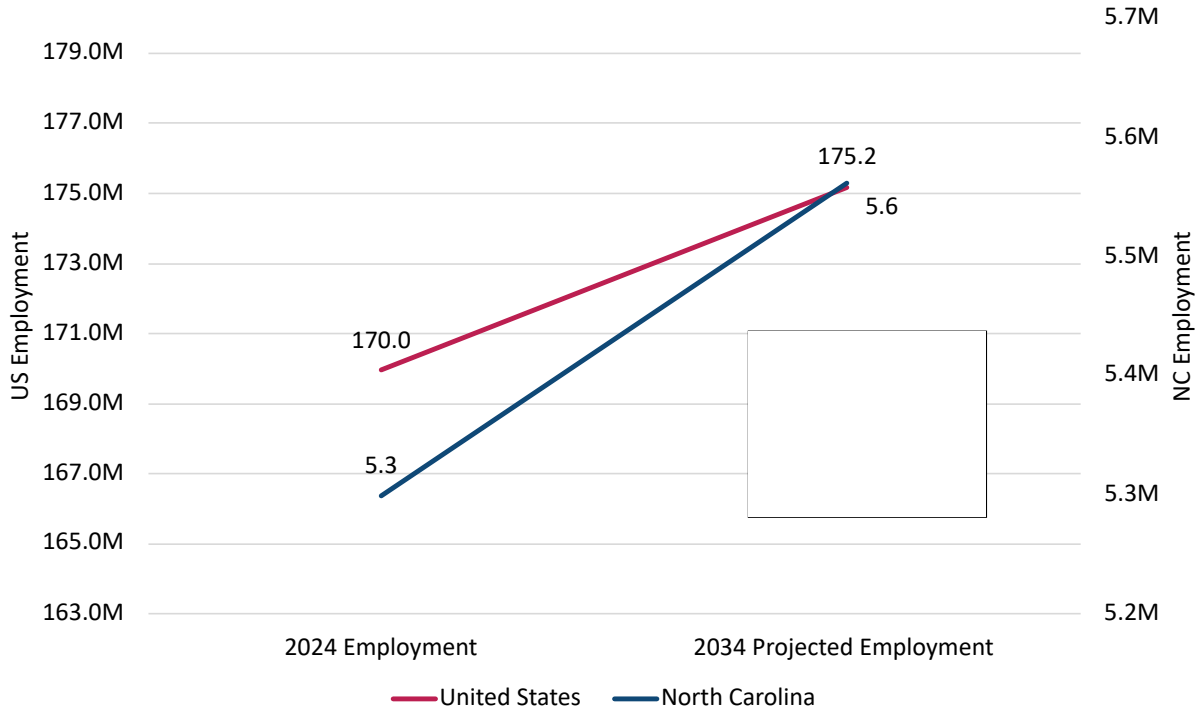
North Carolina has been experiencing robust job growth over the last several years with a 10 percent increase in non-farm jobs between 2018 and 2023, resulting in 4.9 million jobs in January 2023. This was twice the national average employment growth rate of five percent during the same five-year period. Additionally, North Carolina is projected to continue to outpace national labor growth from 2024 to 2034 resulting in 0.49 percent annual growth versus 0.30 percent national annual growth. Figure 2.1 compares national and state employment trends from 2018 to 2023 and Figure 2.2 compares national and state projected employment growth from 2024 to 2034.

Figure 2.1 Total Employment for North Carolina and United States, 2018-23



Source: U.S. Bureau of Labor Statistics Current Employment Statistics (2018-23). Reflects total non-farm employees, seasonally adjusted.

Figure 2.2 Projected Employment Growth for North Carolina and United States, 2024-34



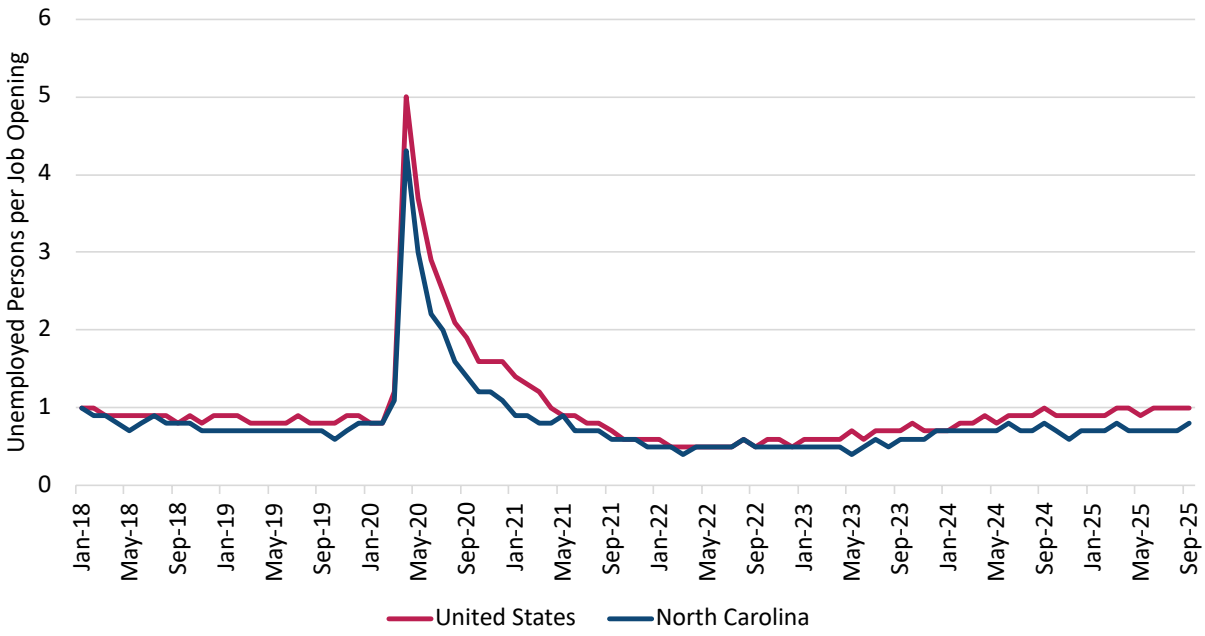
Source: U.S. Bureau of Labor Statistics Employment Projections (2024-34) and NC Department of Commerce Employment Projections (2022-34). Includes farm and self-employment sectors.

In addition to the state's rapid job growth, North Carolina has persistently experienced lower unemployment rates and higher wage gains compared to the nation. North Carolina's unemployment rate has steadily remained below four percent since 2022 and slightly below the national unemployment rate, which has been at or above four percent since mid-2024.[6] North Carolina has consistently seen higher growth in annual wages (26.5 percent) compared to the United States (26.0 percent) from 2018 to 2023.[7]

The ratio of labor supply (number of people seeking jobs) to labor demand (number of job openings) provides another indicator of labor market conditions, roughly reflecting how high employer demand is for additional workers relative to the pool of people actively seeking work. The state's ratio of unemployed persons per job opening has consistently remained below 1.0 — indicating a labor supply shortage — since 2021, and lower than the U.S. average since 2018, as shown in Figure 2.3.

[6] U.S. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, 2022-25.
[7] U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics, 2018-23.

Figure 2.3 Labor Supply-to-Labor Demand Ratio for North Carolina and United States, 2018-25



Source: U.S. Bureau of Labor Statistics Job Openings and Labor Turnover Survey (2018-25).

Collectively, these factors — robust labor growth, lower-than-national average unemployment rates, and a consistent labor supply shortage — contribute to a tight labor market in North Carolina, where employers generally compete for labor.

2.2 Population Changes

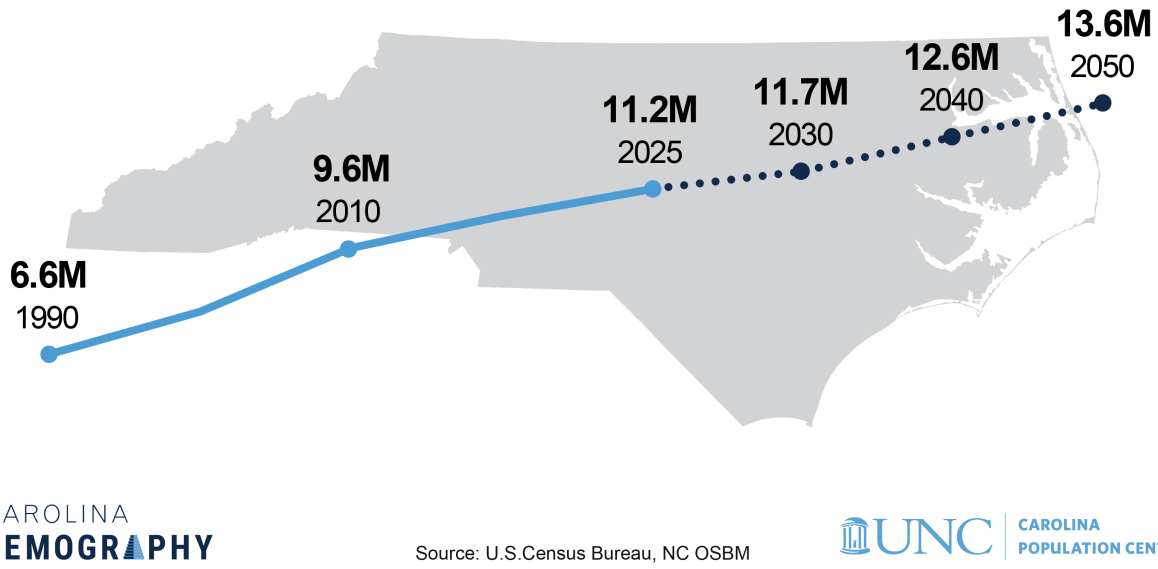
North Carolina is in the midst of a migration-driven population boom. There were over 11.2 million people living in North Carolina as of 2025, making it the ninth most populous state in the nation (Figure 2.4).[8] North Carolina has added an average of 150,000 people per year from 2020 to 2025 and experienced the third largest population gain in the country from 2020 to 2025.[9] This population boost since 2020 has been almost entirely driven by migration (94 percent contribution) — particularly domestic migration — with net births contributing just six percent of the population increase.[10] From July 2024 to July 2025, North Carolina was the top state for domestic migration and experienced a 1.3 percent total population growth, the third highest growth rate behind two smaller states (South Carolina and Idaho) and considerably higher than the overall U.S. population growth rate of 0.5 percent.[11]

This growth trend is projected to continue for the foreseeable future, placing North Carolina on track to become the seventh most populous state by 2030 and reach a population of 13.6 million by 2050,

[8] Cline, Michael, North Carolina Now Home to Over 11 Million People, December 20, 2024.
[9] U.S. Census Bureau, Annual and Cumulative Estimates of Resident Population Change for the United States, Regions, States, District of Columbia, and Puerto Rico and Region and State Rankings: April 1, 2020 to July 1, 2022 (NST-EST2025-CHG), Vintage 2025.
[10] U.S. Census Bureau, Annual and Cumulative Estimates of the Components of Resident Population Change for the United States, Regions, States, District of Columbia, and Puerto Rico: April 1, 2020 to July 1, 2022 (NST-EST2025-COMP), Vintage 2025.
[11] Cline, Michael, North Carolina Top Destination for Domestic Migrants, January 28, 2026.

according to projections from the North Carolina Office of State Budget and Management, State Demographer.[12,13]

Figure 2.4 Historical and Projected Population Change for North Carolina, 1990-2050

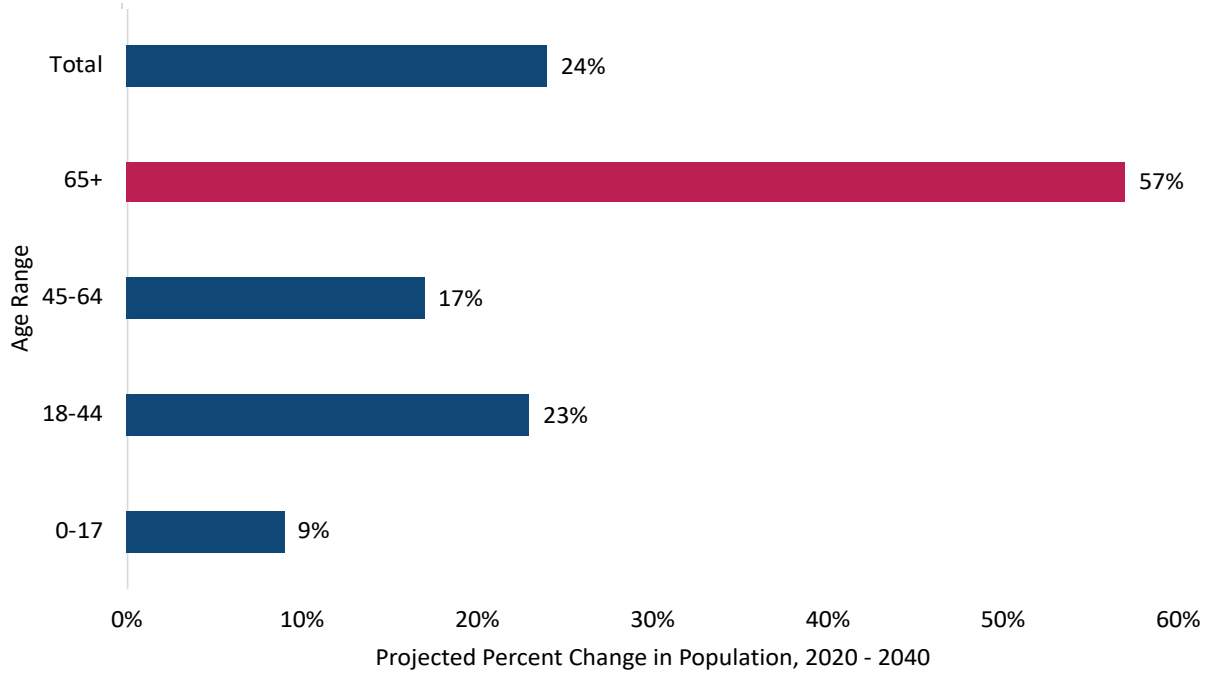


Source: Graphic provided courtesy of Carolina Demography, based on U.S. Census Bureau and NC Office of State Budget and Management data.

At the same time, North Carolina's population is aging rapidly, which will continue to add pressure to North Carolina's labor market. From 2020 to 2040, the number of residents age 65+ is projected to increase by nearly 60 percent from 1.7 million to 2.7 million people, accounting for 21 percent of the population (see Figure 2.5).

[12] Cline, Michael, NC to Become 7th Most Populated State in Early 2030s, February 3, 2025.
[13] NC Office of State Budget and Management, Population Projections: Population Growth 2040-2050, Vintage 2025.

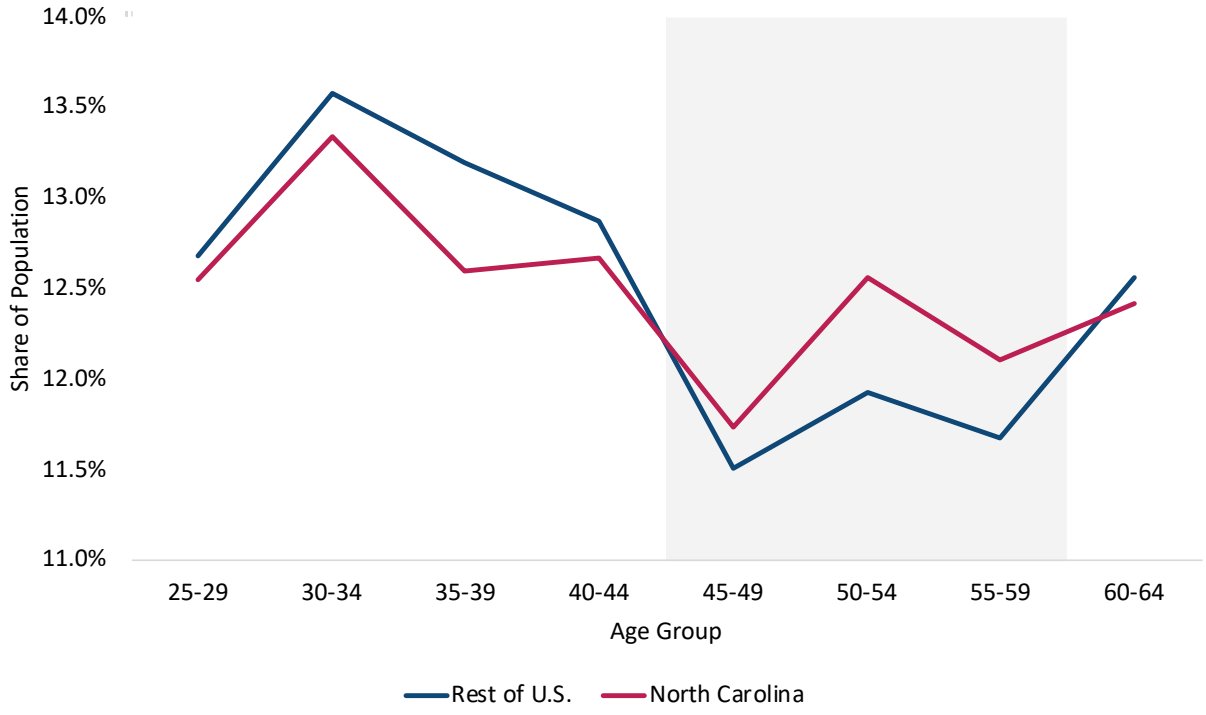
Figure 2.5 Projected Population Change by Age Group for North Carolina, 2020-40



Source: NC Office of State Budget and Management State Population Projections by Race, Sex and Age Groups.

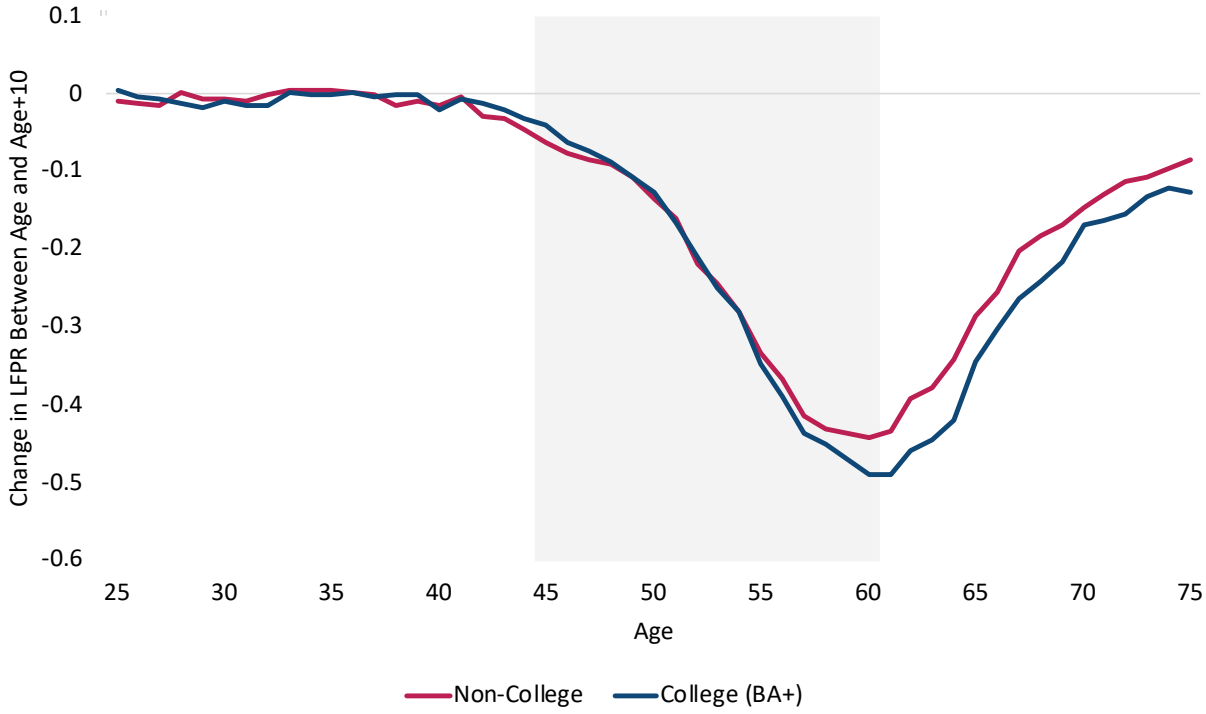
This growth rate is double the growth rate of the state's overall population. Additionally, when compared to the rest of the U.S., North Carolina has a disproportionate share of workers in the 45-60 age range, many of whom will exit the labor force over the next decade and need to be replaced by new workers. Figure 2.6 shows that in 2023, North Carolina had a higher share of population in this 45-60 age range compared to the nation. Figure 2.7 shows a steep decline in anticipated labor force participation rates for North Carolinians aged 45-60, both college and non-college educated, over the projection period.

Figure 2.6 Share of Population by Age Group for North Carolina and United States, 2023



Source: U.S. Census Bureau American Community Survey 1-Year Public Use Microdata Sample (2023).

Figure 2.7 Projected Change in Labor Force Participation Rates by Age, 2023-33



Source: U.S. Census Bureau American Community Survey 1-Year Public Use Microdata Sample (2023).

This demographic shift will have mixed effects on the labor market. As workers age and leave the workforce due to retirement or other reasons, this reduces the total labor supply and increases job opportunities for younger workers. However, at the same time, an aging population places burdens on working-age caretakers, creating challenges for these individuals to complete college degrees and maintain full-time jobs aligned to their skillsets. Additionally, an aging population drives further expansion of the healthcare industry sector and higher demand for healthcare occupation skills.

2.3 Employment and Projections

The North Carolina Department of Commerce's Labor and Economic Analysis Division (LEAD) studies national, statewide, and local economic trends to produce 10-year Employment Projections for the state each year. The NC LEAD data underlies the employment projections for this report. Based on NC Commerce employment projections, North Carolina's economy is projected to add approximately 260,000 jobs from new job growth from 2024 to 2034. These jobs are classified in two primary ways: (1) by industry sector and (2) by occupation. Below is an overview of employment projections by industry and occupation.

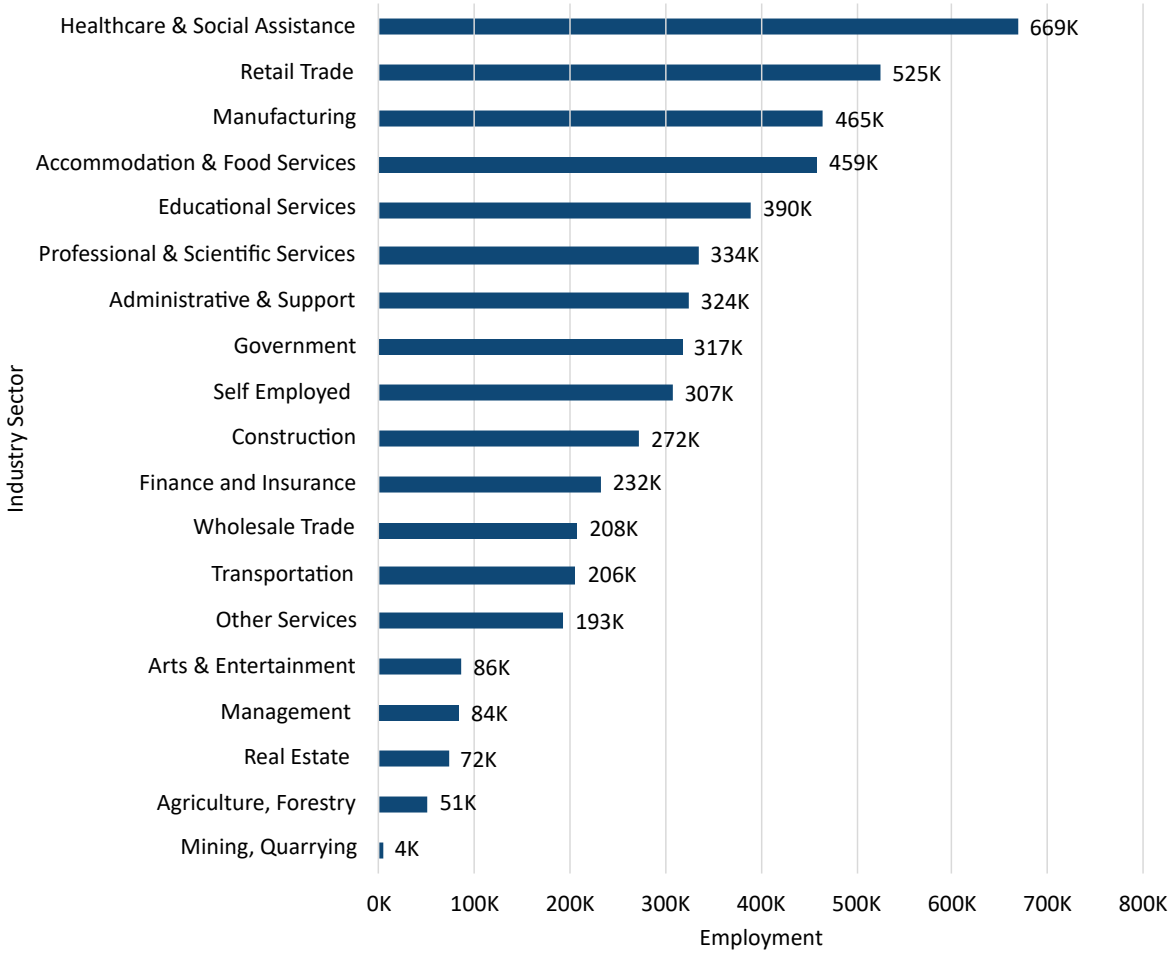
By Industry

Figures 2.8 and 2.9 show North Carolina's employment distribution in 2024 and projected new job growth from 2024 to 2034, respectively, by industry sector. Healthcare and Social Assistance was the state's largest industry sector in 2024, with over 650,000 jobs, representing 13 percent of total employment in North Carolina. This sector is projected to remain the largest sector, adding the largest number of new jobs (nearly 80,000, nearly one-third of all new jobs) over the decade.

Three of the top four fastest-growth sectors are knowledge-based sectors, including: Healthcare and Social Assistance; Professional, Scientific and Technical Services (adding nearly 34,000 new jobs); and Finance and Insurance (approximately 18,000 new jobs). Manufacturing, the state's third largest sector, is projected to grow slowly, adding 300 new jobs during the period.

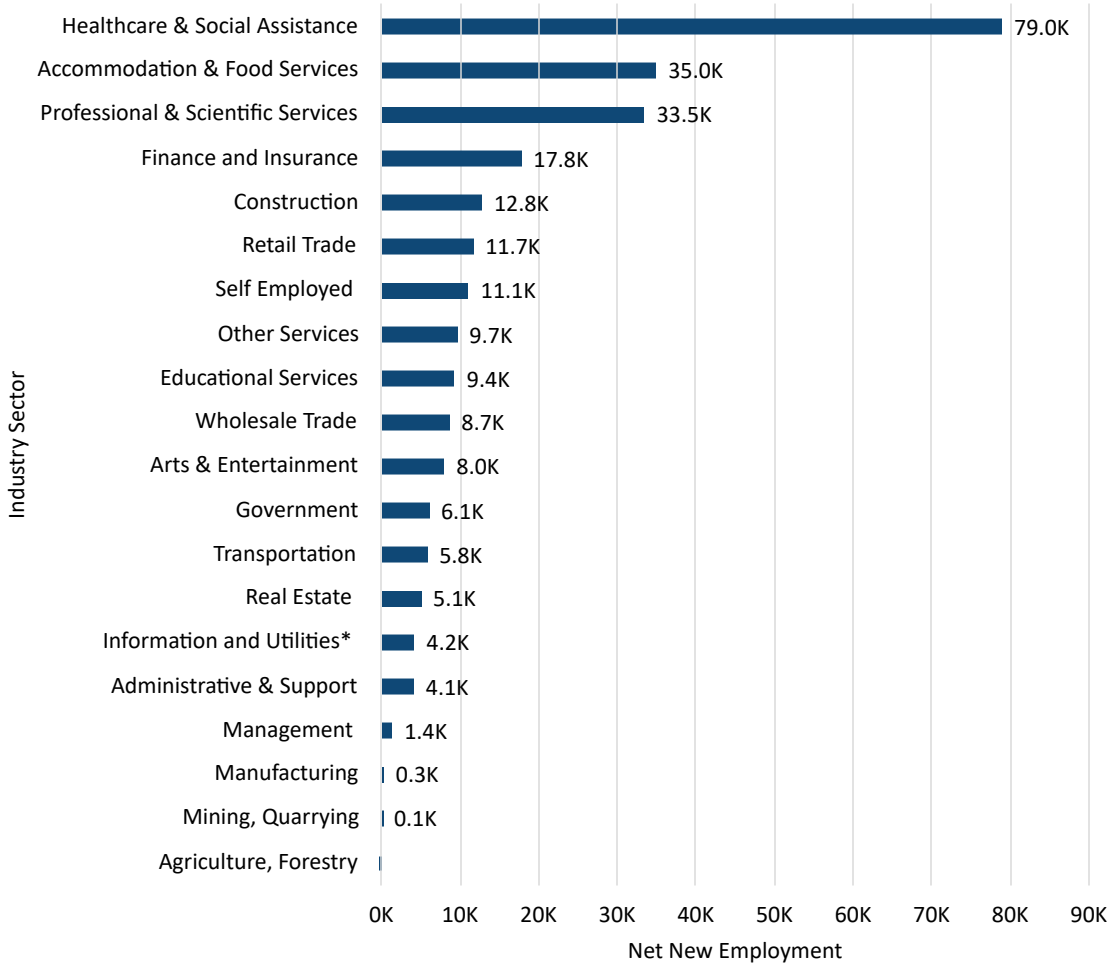
Another noteworthy item reflected in Figure 2.9 is that every industry sector — with the exception of Agriculture and Forestry — is expected to experience job growth in the coming years. The state's policies and investment across a vast array of industries (e.g., advanced manufacturing, biopharma, military defense, and tourism) appear to contribute to diversified job growth across industry sectors.

Figure 2.8 Employment by Industry Sector for North Carolina, 2024



Source: NC Department of Commerce Industry Employment Projections (2024-34).

Figure 2.9 Projected Net New Employment by Industry Sector for North Carolina, 2024-34



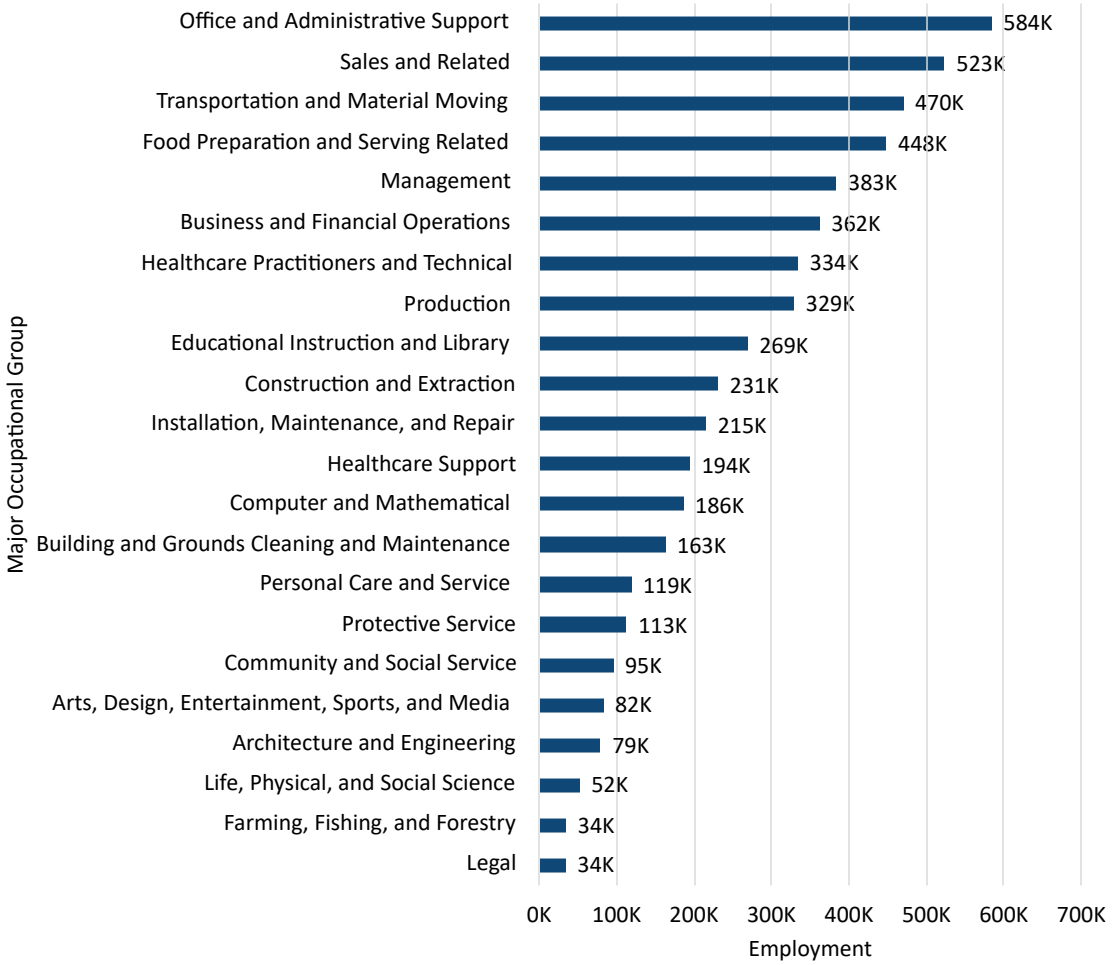
Source: NC Department of Commerce Industry Employment Projections (2024-34). Data reflects net new jobs and excludes transfers and exits.
**Information and Utilities sectors are combined.*

We note that while understanding industry sector trends provides a useful and contextual framework, our workforce analysis focuses on trends in *occupational* demand. This is because employers are focused on filling occupations (e.g., accountant, software developer, nurse, etc.). As a higher education provider equipping workers with the skills needed to perform a job, we have chosen to focus on occupation in our model. As such, below is a deeper view on occupational trends in North Carolina.

By Occupation

Figure 2.10 shows the distribution of jobs by major occupational group in 2024. The top five occupational groups account for nearly half of jobs in 2024. The next three largest groups were Business and Financial Operations; Healthcare Practitioners and Healthcare Support; and Production, each comprising over six percent of employment. Educational Instruction and Library occupations represent roughly five percent of jobs.

Figure 2.10 Employment by Major Occupational Group for North Carolina, 2024



Source: NC Department of Commerce Occupational Employment Projections (2024-34).

Table 2.1 displays employment projections (net new jobs) over the decade 2024-2034 by major occupational group. Occupational groups with the largest net gain for number of new jobs are: Healthcare Practitioners and Technical occupations (+38,000 jobs), Food Preparation occupations (+31,000 jobs), and Management occupations (+28,000 jobs). Healthcare Support, Business and Financial Operations, and Transportation and Material Moving occupations are projected to add more than 25,000 jobs apiece.

Table 2.1 Projected Net New Employment by Major Occupational Group for North Carolina, 2024-34

Occupational Group	Net New Employment	Annual Growth Rate
Healthcare Support	25,495	1.24%
Healthcare Practitioners and Technical	38,006	1.08%
Computer and Mathematical	19,309	0.99%
Architecture and Engineering	6,384	0.78%
Personal Care and Service	9,431	0.77%
Community and Social Service	7,421	0.75%
Management	27,796	0.70%
Business and Financial Operations	25,412	0.68%
Food Preparation and Serving	31,334	0.68%
Installation, Maintenance, and Repair	14,532	0.66%
Construction and Extraction	14,277	0.60%
Life, Physical, and Social Science	3,153	0.59%
Arts, Design, Entertainment, Sports, and Media	4,516	0.53%
Transportation and Material Moving	25,151	0.52%
Building and Grounds Cleaning and Maintenance	6,293	0.38%
Educational Instruction and Library	8,873	0.33%
Protective Service	3,126	0.27%
Legal	891	0.26%
Sales and Related	3,865	0.07%
Production	-631	-0.02%
Office and Administrative Support	-10,717	-0.19%
Farming, Fishing, and Forestry	-1,164	-0.34%

Source: NC Department of Commerce Occupational Employment Projections. Data reflects net new jobs and excludes transfers and exits.

The projected average annual growth rate for all occupational groups is 0.49 percent, with knowledge-based occupational groups projected to experience the highest growth rates. The projected fastest growing occupational groups are Healthcare Support (e.g., Healthcare Aides and Assistants), Healthcare Practitioners and Technical (Doctors, Nurses, Technicians, etc.), Computer and Mathematical, and Architecture and Engineering, all with a growth rate exceeding 0.75 percent annually.

Management and Business and Financial Operations (Accountants, Market Research Analysts, etc.) occupational groups are each projected to grow around 0.7 percent annually, adding around 53,000 jobs combined. Three occupational groups — Production, Office and Administrative Support, and Farming, Fishing, and Forestry — are projected to experience net job losses over the period.

The top 25 individual occupations projected to have the highest net openings over the next decade, and that typically require a bachelor's degree or higher level of education, are shown in Table 2.2. The top five

occupations projected to have the highest net openings are registered nurses, software developers, medical and health services managers, general and operations managers, and nurse practitioners.

Table 2.2 Top 25 Occupations (Bachelor's+) by Net New Employment for North Carolina, 2024-34

Occupation Title	Net New Employment
Registered Nurses	11,208
Software Developers	7,945
Medical and Health Services Managers	4,609
General and Operations Managers	4,260
Nurse Practitioners	3,696
Computer and Information Systems Managers	3,588
Financial Managers	3,525
Data Scientists	3,416
Accountants and Auditors	3,181
Managers, All Other	2,971
Training and Development Specialists	2,580
Market Research Analysts and Marketing Specialists	2,563
Construction Managers	2,548
Personal Financial Advisors	2,465
Computer Systems Analysts	2,340
Human Resources Specialists	2,256
Management Analysts	2,249
Business Operations Specialists, All Other	2,159
Physician Assistants	2,149
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	2,106
Project Management Specialists	2,073
Health Specialties Teachers, Postsecondary	1,851
Information Security Analysts	1,846
Securities, Commodities, and Financial Services Sales Agents	1,346
Industrial Engineers	1,341

Source: NC Department of Commerce Occupational Employment Projections (2024-34). Data reflects net new jobs and excludes transfers and exits.

3 Supply: UNC System Degrees Awarded

With the backdrop of the strong labor market demand that North Carolina is expected to experience in the coming years, the following section aims to provide an overview of degrees awarded to meet workforce needs. In addition to providing an overview of UNC System degree completions, we also provide an overview of all degree completions across North Carolina, recognizing that meeting state workforce needs is a joint effort across all higher education providers. This is especially important in academic fields where the UNC System is the primary source of graduates (meaning the state relies predominantly on the UNC System for these graduates) and fields where the UNC System provides a small share of degrees (the state relies on private and independent institutions for these graduates).

3.1 UNC System v. North Carolina Degree Completions

Across its 16 universities, the UNC System has a robust academic portfolio to meet state workforce needs that span more than 350 academic programs across all degree levels (Table 3.1).

Table 3.1 UNC System Academic Programs Offered by Degree Level

Degree Level	UNC Institutions	Academic Programs[14]
Bachelor's	16	253
Master's	15	243
Doctoral	12	137
All Levels	16	367[15]

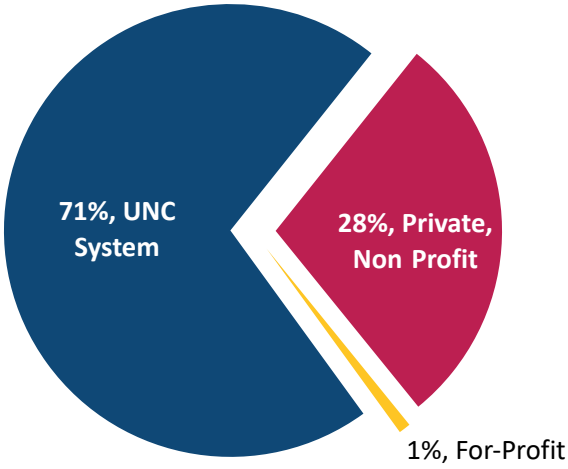
Source: UNC System Student Data Mart.

Across this spectrum of programs, the UNC System awarded more than 66,000 degrees in 2024-25. The UNC System represents 71 percent of all degrees at the bachelor's level and above awarded by providers based in North Carolina including private nonprofit and for-profit institutions (see Figure 3.1).

[14] Academic Program is defined as a unique Classification of Instructional Program (CIP). This list includes programs that have not been discontinued and have at least one degree completion during 2020-21 through 2024-25.

[15] The total number of programs for "All Levels" removes duplicates across degree levels. For example, bachelor's and master's program in Accounting are counted as one unique program (CIP) in this total.

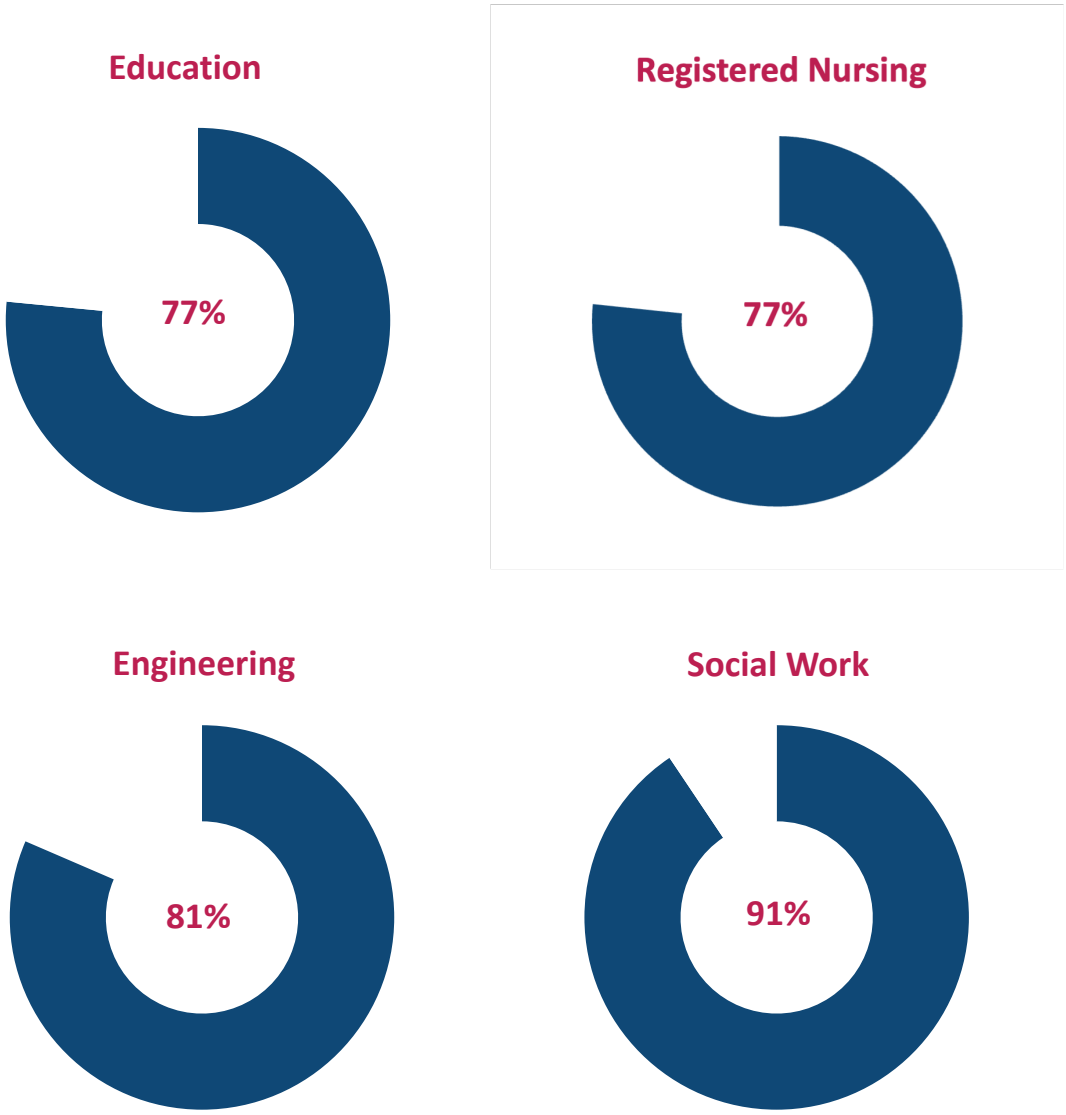
Figure 3.1 UNC System Share of All Degrees (Bachelor's+) Awarded by North Carolina Institutions, 2019-20 Through 2023-24



Source: National Center for Education Statistics Integrated Postsecondary Education Data System (2019-20 through 2023-24).

In certain fields aligned to critical state workforce gaps, the UNC System is the dominant provider of degrees for North Carolina. From academic years 2019-20 through 2023-24, the UNC System supplied more than three quarters of all bachelor's and higher degrees in education, registered nursing, engineering, and social work conferred by institutions in North Carolina (Figure 3.2).

Figure 3.2 UNC System Share of Critical Workforce Degrees (Bachelor's+) Awarded by North Carolina Institutions, 2019-20 Through 2023-24[16]



Source: U.S. National Center for Education Statistics Integrated Postsecondary Education Data System (2019-20 through 2023-24).

3.2 Top Degree Fields and Completion Trends

All Degree Levels

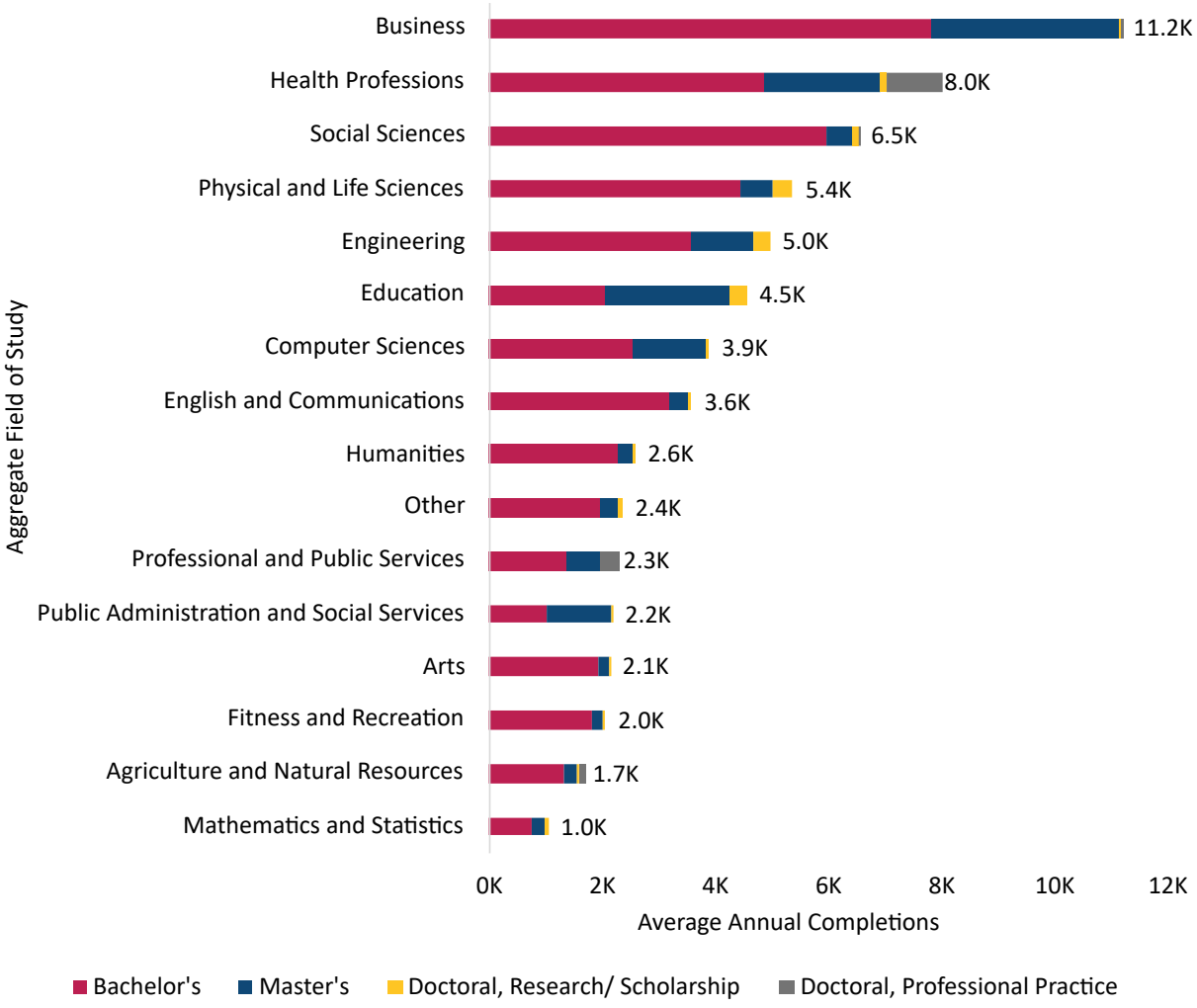
The average annual number of UNC System degree completions are shown by aggregate field of study and degree level in Figure 3.3 for academic years 2020-21 through 2024-25. During this period, more than

[16] While share of degrees for critical workforce degrees is for bachelor's and higher degrees, a notable exception is that the registered nursing degree (CIP 15.3801) is awarded by both two-year and four-year institutions. Therefore, when including two-year registered nursing degrees awarded, the share of degrees is as follows: UNC System (45 percent), NCCCS (42 percent), Private, Nonprofit (12 percent), and For-Profit (one percent).

64,000 degrees were completed on average each year, with 73 percent at the bachelor's level, 22 percent at the master's level, and five percent at the doctoral level (both research and professional practice).

Across all degree fields, Business fields are by far the top producer, with more than 11,000 degrees awarded per year. In the next largest field of study, Health Professions, roughly 8,000 degrees were completed annually on average. The top five fields — Business, Health Professions, Social Sciences, Physical and Life Sciences, and Engineering — account for 56 percent of all degrees awarded.

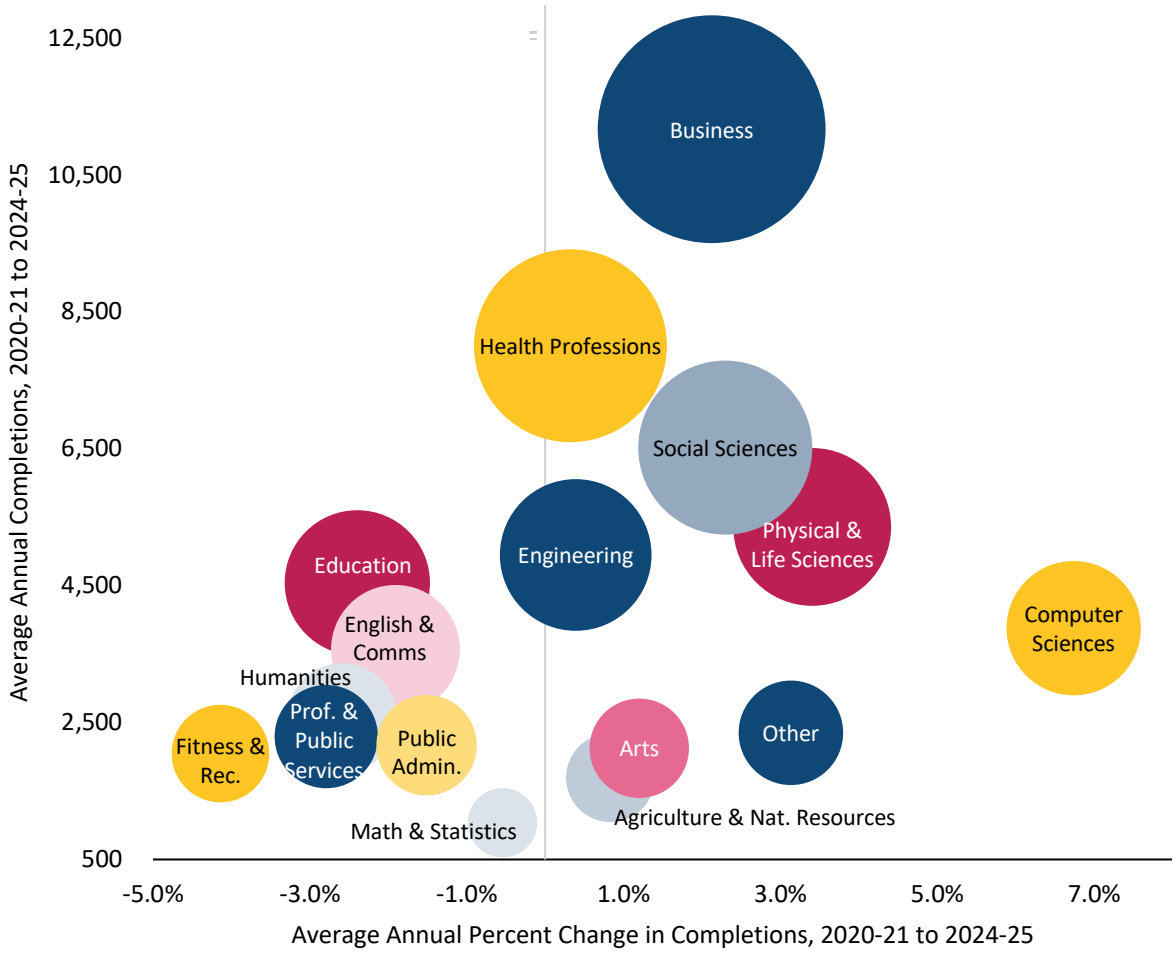
Figure 3.3 UNC System Average Annual Completions by Level and Field, 2020-21 Through 2024-25



Source: UNC System Student Data Mart.

Figure 3.4 shows average annual completions and growth trends in degree completions for each field from 2020-21 to 2024-25 for all degree levels.

Figure 3.4 UNC System Average Annual Completions and Growth Trends by Field, All Levels



Source: UNC System Student Data Mart.

The fields of study experiencing the largest growth in total number of degree completions across all levels over the past five years are Computer Science, Physical and Life Sciences, Social Sciences, and Business. These trends suggest students are self-selecting fields more technical or quantitative in nature — such as computer science, business economics, and neuroscience.

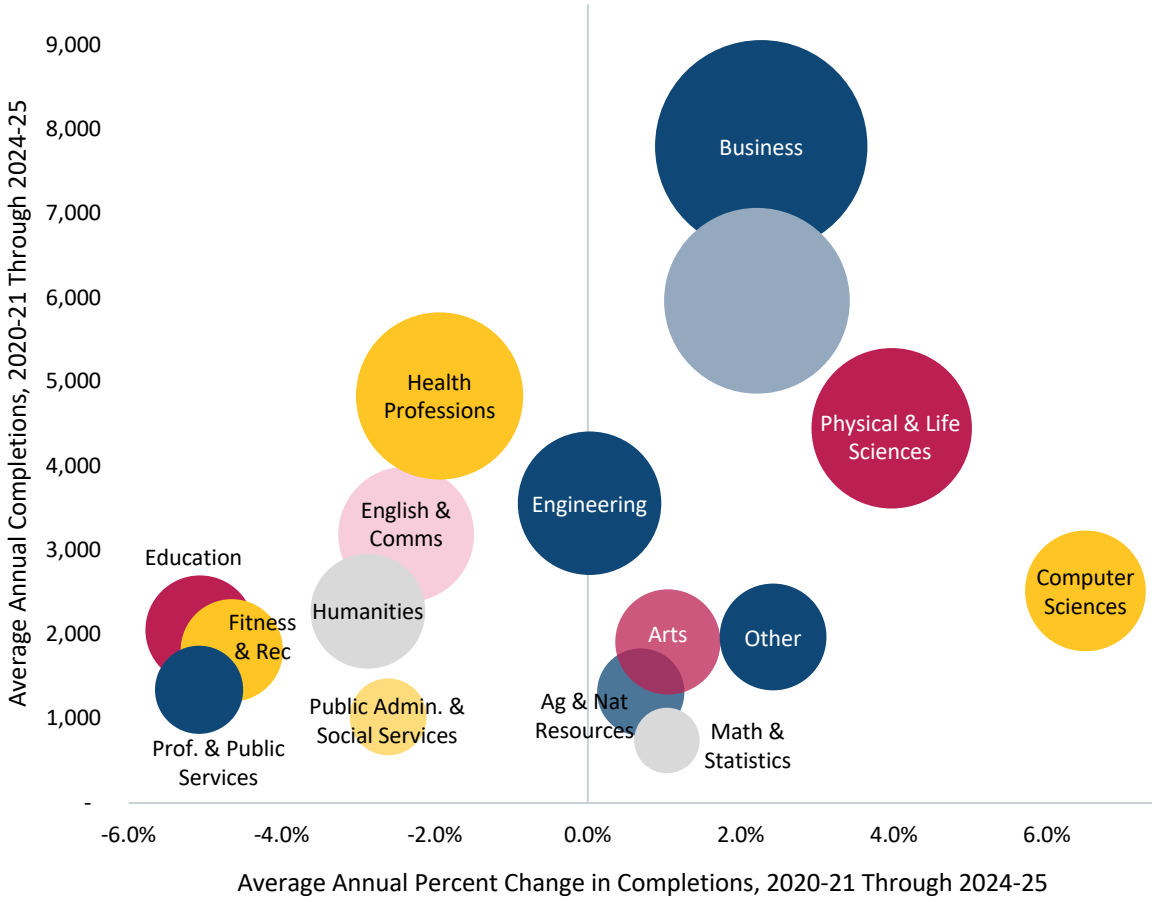
- Computer Science degree completions increased by nearly 1,200 from 2020-21 to 2024-25, representing the fastest growth rate (seven percent average annual growth) among all fields.
- Physical and Life Sciences degree completions grew by more than three percent annually, driven primarily by growth in fields of Exercise Physiology and Kinesiology, Biology, and Neuroscience.
- Business degree completions grew by around two percent annually, with notable growth in fields of Management Science, Marketing, Information Resources Management, and Finance.
- Social Sciences grew by roughly two percent annually, with significant gains in fields of Psychology and Criminology.

- Among fields designated as "Other," Multi/Interdisciplinary Studies[17] saw a large bump (+400 additional degrees) over the five-year period.
- While Health Professions in aggregate did not experience a large increase in degree completions, certain fields including Community Health Services/Counseling, Mental Health Counseling, Nursing Practice, and Public Health each had sizeable gains.

Bachelor's Degrees

Figure 3.5 shows average annual completions and growth rates for bachelor's degrees by aggregated field of study in 2020-21 through 2024-25. The top five fields of study for number of bachelor's level completions are Business, Social Sciences, Health Professions, Physical and Life Sciences, and Engineering.

Figure 3.5 UNC System Average Annual Completions and Growth Trends by Field, Bachelor's Level



Source: UNC System Student Data Mart.

The fastest growing fields (by average annual growth rate from 2020-21 through 2024-25) for bachelor's degree completions are:

[17] Multi/Interdisciplinary Studies includes programs in Applied Professional Studies, Interdisciplinary Studies, Liberal and Interdisciplinary Studies, Multidisciplinary Studies, and Professional Studies.

- Computer Sciences, which experienced 6.5 percent average annual growth, adding nearly 750 bachelor's degrees in 2024-25 compared to 2020-21.
- Physical and Life Sciences, with four percent average annual growth and an increase of over 800 bachelor's degrees in 2024-25 compared to 2020-21. Nearly all growth in Physical and Life Sciences completions occurred at the bachelor's level.
- Business, the largest field, where bachelor's degree completions grew by 2.3 percent on average per year. This increase at the bachelor's level represents three quarters of overall growth in this field, with the remainder of growth at the master's level.
- Social Science degrees at the bachelor's level which increased by 2.2 percent annually, accounting for nearly 90 percent of growth in this field at all degree levels.

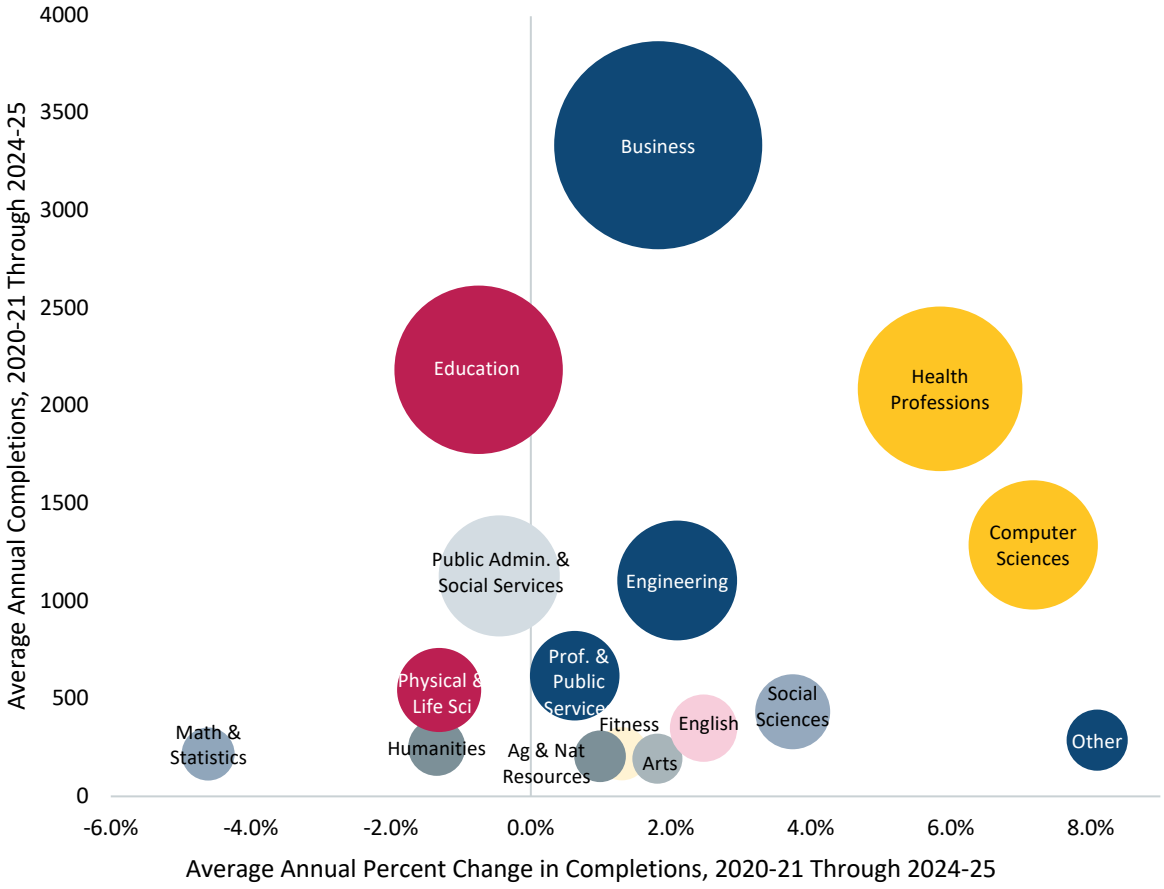
Fields that had the most rapid decline at the bachelor's level are:

- Education, which experienced a five percent decline per year, largely due to declines in Elementary and Middle School Education, which together make up half of bachelor's degrees in Education.
- Professional and Public Services, also decreasing by five percent annually, almost entirely due to decreasing completions in Criminal Justice.
- Fitness and Recreation completions, decreased by almost five percent per year, with highest declines in Exercise Science and Sports, Kinesiology, and Physical Education.
- Humanities completions, decreased by three percent annually, driven by declines in History and Liberal Arts.

Master's Degrees

Figure 3.6 displays the average annual number of master's degree completions and average annual growth rates for each aggregate field over the five-year period from 2020-21 to 2024-25. At the master's level, the three largest fields (Business, Health Professions, and Education) account for over half of all degree completions and more than the other 13 subject areas combined.

Figure 3.6 UNC System Average Annual Completions and Growth Trends by Field, Master's Level



Source: UNC System Student Data Mart.

Business, the largest field for degree completions at the master's level, experienced steady growth of around two percent on average annually, mirroring the trend for this field at the bachelor's level. The second largest field of Education had a small decline in master's degree completions (nearly one percent average annual decrease). The fastest growing fields for master's degree completions are:

- Computer Sciences, with seven percent average annual growth during the period.
- Health Professions, which saw six percent annual growth and more than 500 additional degrees completed in 2024-25 compared to 2020-21.
- "Other" fields, which grew by eight percent annually, driven primarily by explosive growth in newer fields of Financial Analytics (280 percent annual growth), Data Science (nearly 120 percent annual growth), and Multi/Interdisciplinary Studies (100 percent annual growth), all established during or after 2022-23.
- Social Sciences, with a nearly four percent growth per year, although this field accounts for a small share (three percent) of all master's degrees awarded during the period.
- Engineering degree completions, seeing growth by around two percent annually and representing eight percent of all completions at this level. Growth at the master's level is entirely responsible for the overall gain in engineering degree completions during this period.

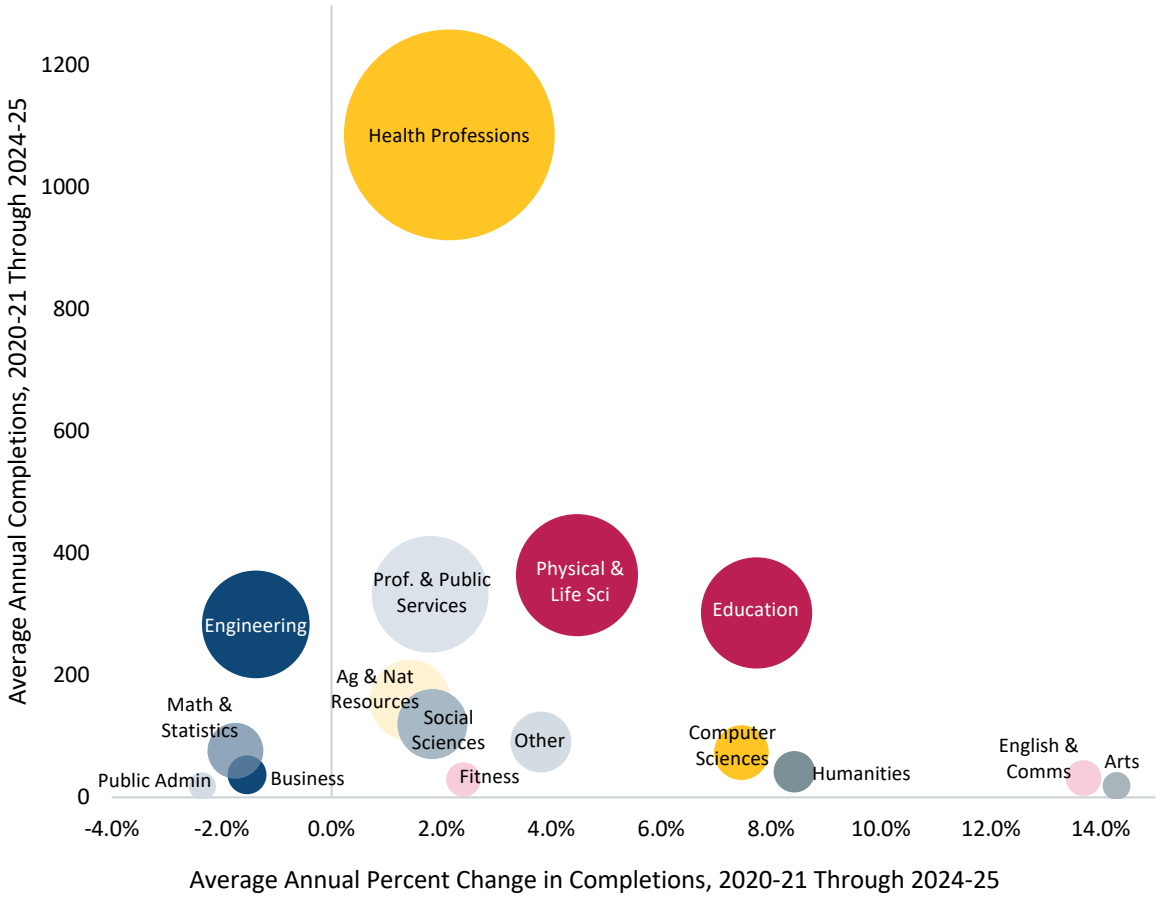
Fields that had the most rapid decline among master's degree completions over the five-year period are:

- Mathematics and Statistics (five percent average annual decline). All fields within this aggregate field shrank except for Applied Mathematics, with the largest decrease in General Statistics (nine percent annually).
- Humanities (one percent average annual decline). Liberal Arts and Sciences/Liberal Studies degrees experienced the biggest drop (15 percent per year).
- Physical and Life Sciences, a broad field that includes three dozen fields, saw an overall decline of one percent annually. The fields with biggest declines were Chemistry and Physiology. Notably, Biomedical Sciences experienced a 37 percent annual growth.

Doctoral Degrees

Figure 3.7 shows the average annual number of doctoral degree completions (both research and professional practice) and average annual growth rates for each aggregate field over the five-year period from 2020-21 to 2024-25. The UNC System had around 3,000 doctoral completions on average per year and three percent average annual growth at this level.

Figure 3.7 UNC System Average Annual Completions and Growth Trends by Field, Doctoral Level



Source: UNC System Student Data Mart.

For all doctoral degree completions:

- Health Professions is the dominant aggregate field, representing more than one third of all degree completions at this level (over 1,000 per year). Overall, Health Professions experienced an average annual growth rate of two percent at the doctoral level. Among these fields:
    - The fastest growth occurred in four small fields (Public Health, Maternal and Child Health, Occupational Therapy, and Public Health Education and Promotion), which collectively comprise less than three percent of all Health Professions completions.
    - Notably, doctoral degrees in Nursing Practice grew by 12 percent annually on average; these degrees make up a quarter of all Health Profession degree completions.
    - Doctoral completions in Medicine, which comprise another fourth of Health Profession degrees, saw a decline of 1.4 percent per year.
    - The next two largest Health Professions fields, Dentistry and Pharmacy, also experienced slight declines of 0.3 and 1.4 percent annually, respectively.
- Arts and English and Communications grew most rapidly at 14 percent average annual change, although both groups combined represent around 50 completions annually (less than two percent of all doctoral degrees). Highest growth occurred in fields of Music Performance and English Language and Literature.
- Education had the highest net gains (100 additional degrees in 2024-25 compared to 2020-21), representing eight percent average annual growth. This is the only level for which degree completions increased for Education. Educational Leadership and Administration, the largest field within Education representing half of doctoral Education degrees, saw 12 percent annual growth. Two smaller fields, Teacher Education and Professional Development and Adult and Continuing Education Administration, each saw greater than 50 percent annual growth in completions.
- Humanities and Computer Sciences each grew by roughly eight percent annually. Both are small fields at the doctoral level, accounting for a collective three percent of doctoral completions.
- Physical and Life Sciences, the second largest field at this level, grew by nearly five percent per year. This growth is largely driven by increases in completions within Biological and Biomedical Sciences, Materials Science, and Neuroscience.

4 Workforce Alignment Methodology

4.1 Background

To estimate state workforce needs and alignment, the UNC System developed a model that utilizes empirical data to mimic real world employment practices. While this model conceptually builds upon two national "guidebooks" that are regularly used to estimate workforce needs, it also aims to address two limitations. First, the degree program-to-occupation "guidebook" (the CIP-SOC Crosswalk) provides a list of *direct* education-to-occupation pathways but — as noted in the guidebook — these pathways are not based on actual empirical data. Second, the degree-level "guidebook" aims to assign a degree level for each occupation. However, it only provides the *typical* degree level for each occupation (i.e., bachelor's, master's, etc.) but does not provide data on the different hiring practices of employers.

Therefore, the UNC System aimed to develop a workforce alignment model for North Carolina that utilizes empirical data. The hope and aim were twofold: (1) provide better insight to students on "real world" degree program-to-occupation pathways and (2) better support our state employers by acknowledging their hiring practices.

Below is an overview of the data sources utilized for the workforce alignment model:

- NC Labor and Economic Analysis Division (LEAD) Occupational Employment Projections (2022-32);[18]
- U.S. Census Bureau American Community Survey (ACS) 5-Year Public Use Microdata (2019-23);
- National Student Clearinghouse Data (Academic Years 2014-15 Through 2023-24);
- Integrated Postsecondary Education Data System Completions Data (Academic Years 2019-20 Through 2023-24);
- UNC System Administrative Data (Academic Years 2019-20 Through 2023-24); and
- U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics (2022 and 2024).

In the following section are key observations learned and how these learnings informed our workforce alignment model.

4.2 Key Learnings from Empirical Data

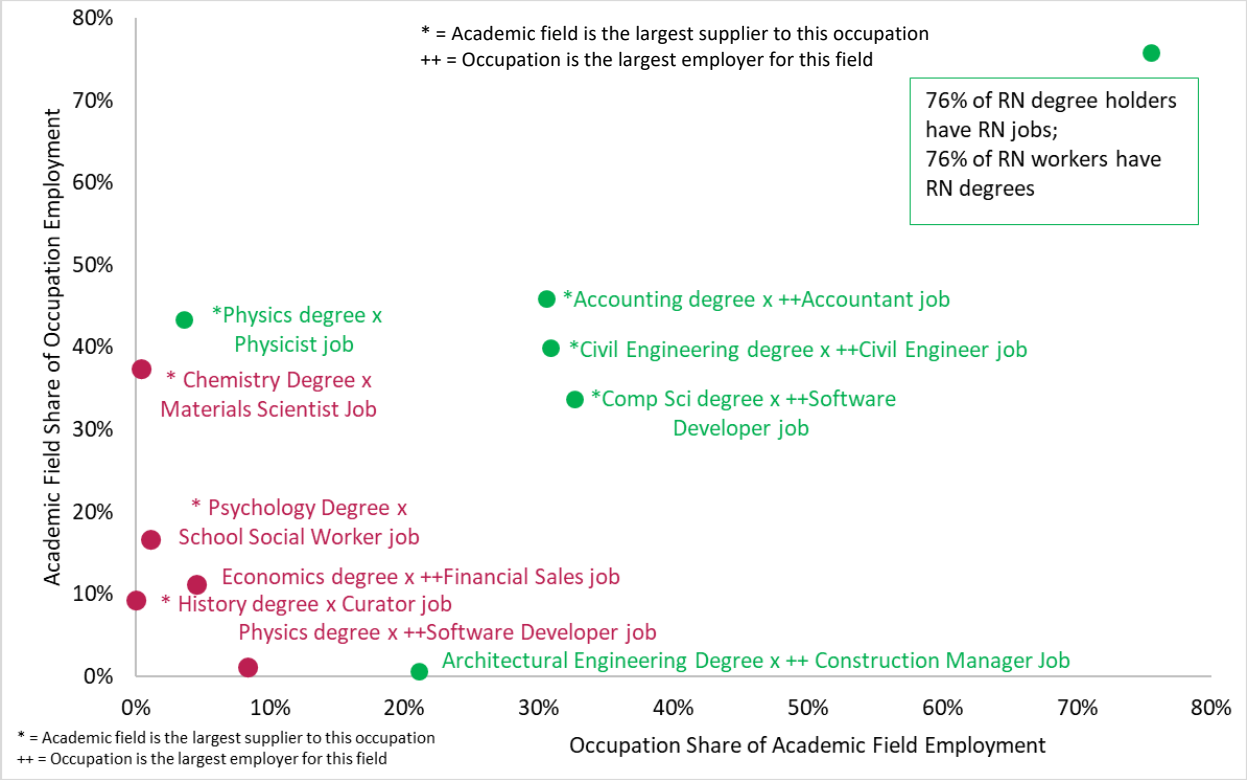
One key observation we learned from the empirical data is that there is a wide variety of degree-to-occupation pathways — especially at the bachelor's degree level. While some of these pathways are captured in the CIP-SOC Crosswalk, the empirical data also allowed us to discover nontraditional routes from degrees to occupations.

Figure 4.1 provides an overview of some pathways observed for bachelor's degrees. The green dots represent traditional degree-to-occupation pathways captured in the CIP-SOC Crosswalk. These include traditional pathways such as nursing degrees leading to registered nursing occupations, accounting degrees leading to accounting jobs, etc. The red dots in Figure 4.1 represent a few examples of "nontraditional" pathways that are not reflected in the CIP-SOC Crosswalk. Interestingly, the empirical data even allowed us to discover many instances where the most common degree-to-occupation pathways are not captured in the CIP-SOC crosswalk.

[18] Sections 4 and 5 of this report were undergoing final review before the LEAD Occupational Employment Projections for 2024-34 were released in March and remain based on the original 2022-32 projections. Section 11 includes a brief discussion of updated program demand projections, which do not significantly alter the findings presented in Section 4 and 5.

In Figure 4.1, we highlight chemistry degrees leading to material scientist jobs and psychology degrees leading to school social worker jobs, where these degrees are the most common bachelor's degree for people in these jobs. Similarly, financial sales jobs are the most common occupation for those with an economics degree and software developer occupations employ the most people with a physics bachelor's degree.

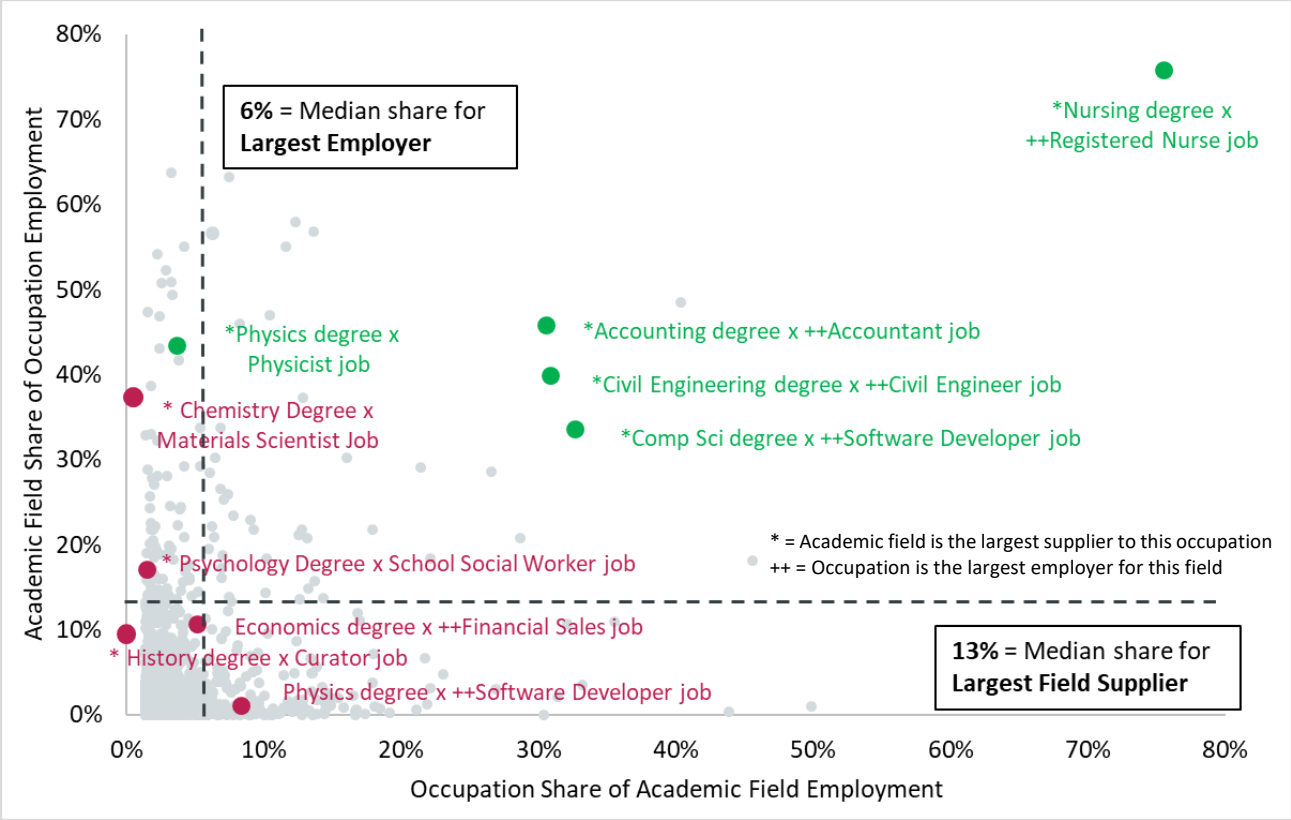
Figure 4.1 Observed Bachelor's Degree-to-Occupation Pathways



Source: U.S. Census Bureau American Community Survey 5-Year Public Use Microdata Sample (2019-23), U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics (2022), and U.S. National Center for Education Statistics CIP-SOC Crosswalk (2020).

In addition to being able to observe "traditional" versus "nontraditional" pathways, the empirical data also allowed us to observe the high level of dispersion that exists for the majority of education-to-occupation pathways (meaning that most academic fields lead to many occupations, and most occupations are filled by many different academic fields as they require a wide range of skills). This is represented in Figure 4.2.

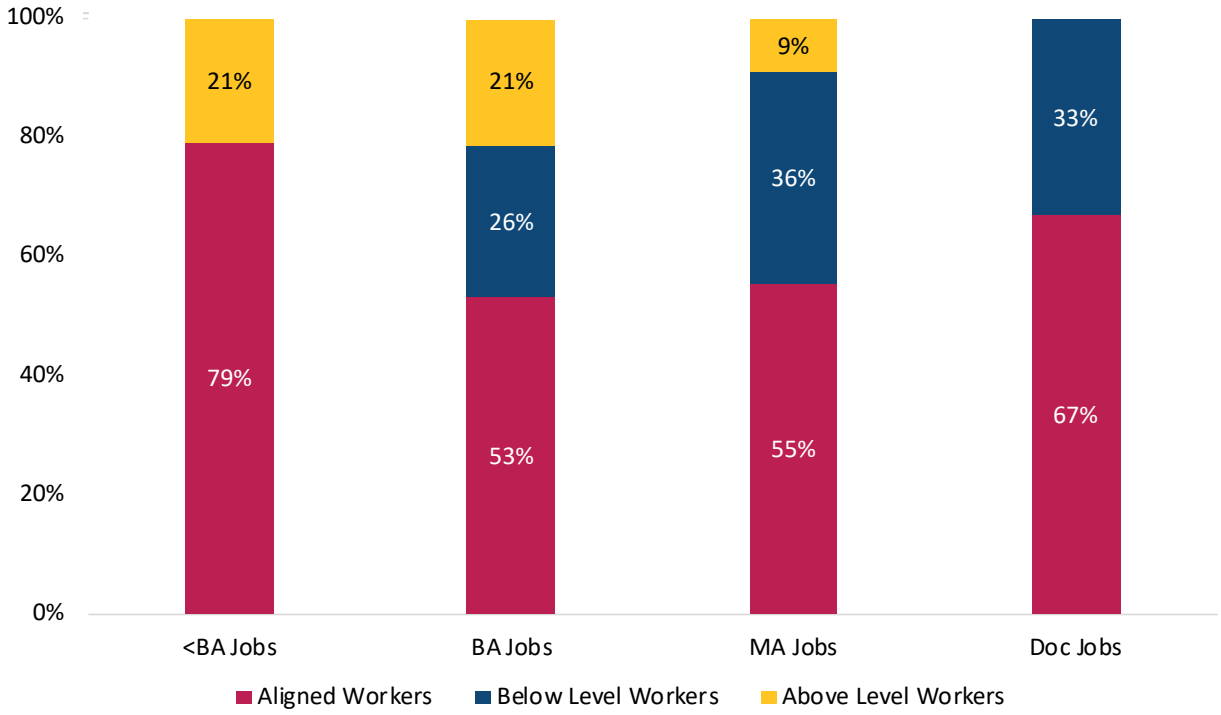
Figure 4.2 Dispersion in Observed Bachelor's Degree-to-Occupation Pathways



Source: U.S. Census Bureau American Community Survey 5-Year Public Use Microdata Sample (2019-23), U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics (2022), and U.S. National Center for Education Statistics CIP-SOC Crosswalk (2020).

In addition to observing the wide variety of degree-to-occupation pathways, the empirical data also allowed us to observe real world degree level attainments as represented in Figure 4.3.

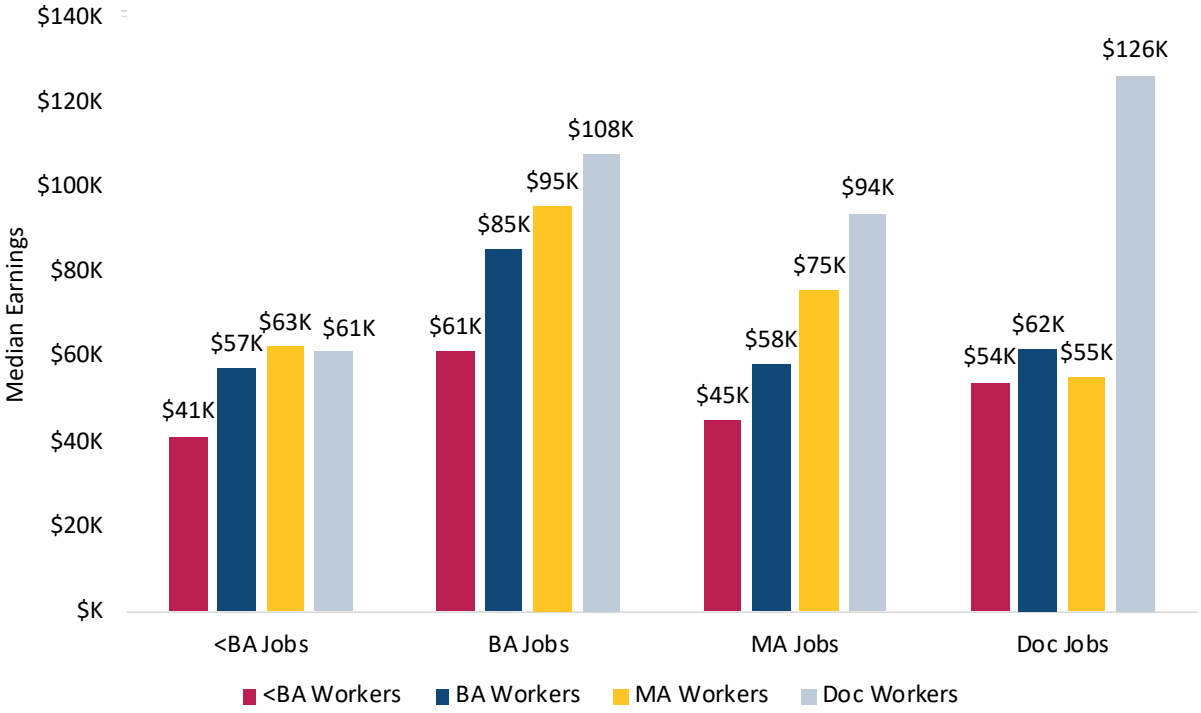
Figure 4.3 Observed Employment by Degree Level Compared to "Guidebook" Assignment



Source: U.S. Census Bureau American Community Survey 5-Year Public Use Microdata Sample (2019-23), U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics (2022), and U.S. Bureau of Labor Statistics Occupational Outlook Handbook (2022).

When overlaying earnings data on the various degree-level occupations, it is interesting to note that employers are consistently willing to pay substantial premia for workers with additional education across a wide range of occupations. It is clear that the value of and demand for skills provided by higher education is more broadly distributed throughout the labor market and that those skills remain scarce enough to sustain large earnings premia for graduates at all levels.

Figure 4.4 Observed Earnings by Degree Level and "Guidebook" Assignment



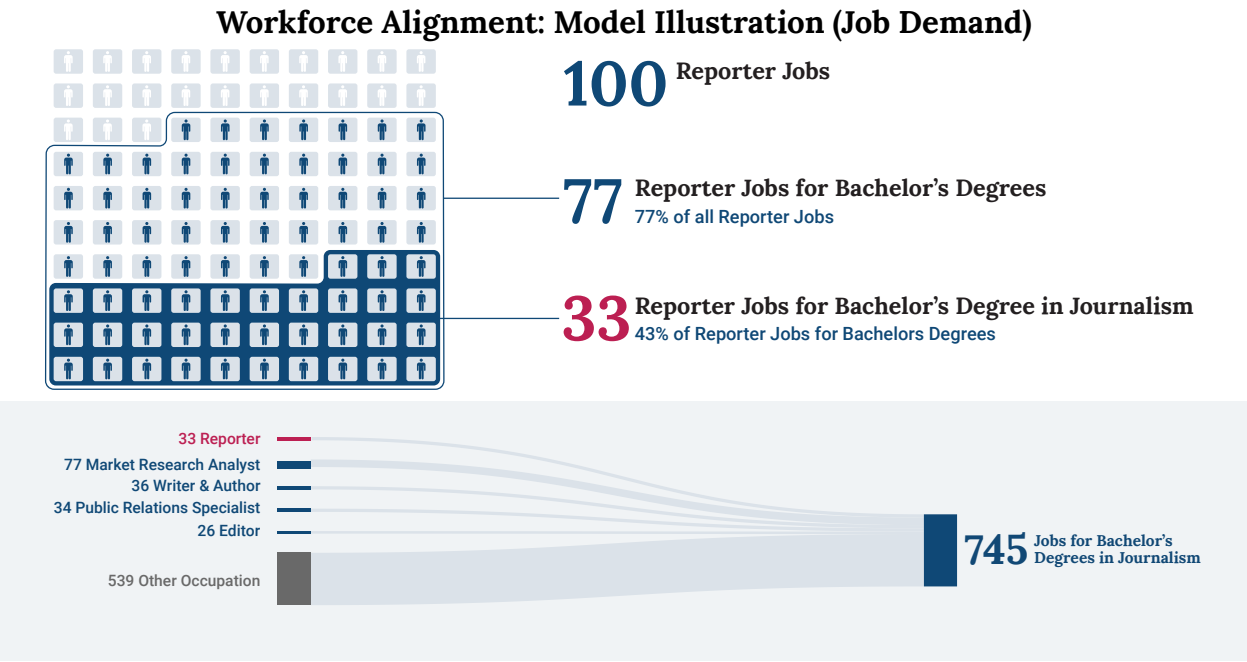
Source: U.S. Census Bureau American Community Survey 5-Year Public Use Microdata Sample (2019-23), U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics (2022, 2024), and U.S. Bureau of Labor Statistics Occupational Outlook Handbook (2022).

4.3 Methodology

Leveraging the learnings from the empirical data, the UNC System workforce alignment model aims to mimic real world labor market dynamics by capturing the wide variety of education-to-occupation pathways and the observed differences in degree-levels. To illustrate how the model works, below is an example of how we estimate demand for Journalism bachelor's (BA) degrees. In Figure 4.5, we first calculate the job demand for Journalism bachelor's (BA) degrees for one occupation: Reporters. We start with a hypothetical 100 projected job openings per year for the Reporter occupation. Empirical data show that 77 percent of Reporters in the state hold a bachelor's degree, and 43 percent of Reporters with bachelor's degrees in the nation hold a bachelor's in Journalism.[19] Applying these empirical shares to the 100 hypothetical future job openings, we estimate a demand of 18 Reporter jobs for workers with a Journalism BA.[20] After determining the demand for Journalism BAs for *one* occupation, we repeat this same exercise across *all* occupations that hire workers with a Journalism BA. We then sum the total job demand for Journalism BA degrees for all occupations (745).[21]

[19] We restrict to workers between the ages of 25 and 35 to better reflect the educational expectations for recent graduates early in their careers.
[20] Job demand reflects all non-transfer job openings. This includes new job openings and job openings from exits such as retirements.
[21] Occupations that disproportionately employ workers with less than a bachelor's degree are excluded from job demand.

Figure 4.5 Projecting Demand for Journalism BA Degrees from Reporter Jobs



Source: NC Department of Commerce Occupational Employment Projections (2022-32) and U.S. Census Bureau American Community Survey 5-Year Public Use Microdata (2018-22).

It should be noted that in addition to estimated job demand for each degree field and level (e.g., Journalism BA), we also project "education pipeline demand" to ensure that there are sufficient degree completions at undergraduate degree levels to meet graduate degree demand. This is especially important for occupations that require a graduate degree to practice (e.g., JD requirement for lawyers). To help estimate education pipeline demand, we utilized data from the National Student Clearinghouse.

5 Workforce Alignment Findings

In the gap analyses below, we estimate the gap for each level and academic field. As described above, projected demand includes demand for job openings and "pipeline" demand to ensure sufficient degree completions to meet workforce demand for graduate-level occupations. Degree completions include completions from UNC System and non-UNC System institutions in North Carolina, using annual average completions from 2019-20 through 2023-24.

At each level, we identify a list of undersupplied academic fields, as well as a list of projected oversupplied fields. The criteria used to select these programs are designed to address both employer and societal needs for the state. Wages provide a strong, reliable, and commonly used indicator for labor market demand. A high public serve share — the share of degree holders who work in the public or nonprofit sector — provides an indication of societal need regardless of pay.

As such, the threshold for undersupplied program selection is:

(1) Annual academic program completions would need to increase by at least 50 percent OR by 500 degrees[22] and
(2) Has high occupational earnings[23] (top quartile) OR has a high public service share[24] (top quartile).

While the following sections provide an overview of academic programs meeting the criteria, the cumulative shortfall is expected to be between 5,000 to 10,000 annually with the majority (approximately 75 percent) of degrees at the bachelor's level. Also, it should be noted that the degree gaps listed in the following sections are directional and proximate, rather than precise measures of degree completion gaps. Finally, as with any forecasting model, there are limitations to the data. As such, in Section 7, we provide an overview of additional contextual factors for consideration including the emergence of artificial intelligence and in-migration trends on workforce needs.

[22] The absolute gap threshold was reduced to 250 degrees for master's- and doctoral- level degrees.
[23] Reflects the median annual earnings in occupations in North Carolina based on U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics (2024) data.
[24] Reflects the share of workers employed by a public or nonprofit entity in occupations in North Carolina based on U.S. Census Bureau American Community Survey (2019-23) data.

5.1 Bachelor's Level

Using the criteria described above, we identified the following academic fields as undersupplied for meeting future demand, organized by broad academic field groupings.

Table 5.1 Undersupplied Fields, Bachelor's Level

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Business	Accounting	1,965	963	1,001	Top Quartile $80K	18%
	Finance	1,724	1,222	502	Top Quartile $80K	14%
	Actuarial Science	52	18	33	Top Quartile $102K	16%
Computer Sciences	Computer and Information Systems	674	410	264	Top Quartile $103K	15%
	Computer Administration Management and Security	171	47	125	Top Quartile $103K	14%
	Information Sciences	200	121	79	Top Quartile $100K	16%
	Computer Programming and Data Processing	67	23	44	Top Quartile $103K	17%
Education	General Education	890	87	803	$50K	Top Quartile 66%
	Art and Music Education	292	164	128	$55K	Top Quartile 66%
	Language and Drama Education	189	63	126	$55K	Top Quartile 68%
	Physical and Health Education Teaching	224	102	122	$55K	Top Quartile 59%
	Secondary Teacher Education	120	6	113	$55K	Top Quartile 69%
	Mathematics Teacher Education	97	28	69	$55K	Top Quartile 72%
	Social Science or History Teacher Education	123	75	48	$55K	Top Quartile 65%
	Science and Computer Teacher Education	50	20	30	$55K	Top Quartile 69%

Table 5.1 Undersupplied Fields, Bachelor's Level (Continued)

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Engineering	Electrical Engineering	902	279	622	Top Quartile $105K	15%
	Mechanical Engineering	1,205	598	607	Top Quartile $101K	14%
	Civil Engineering	524	258	266	Top Quartile $94K	18%
	Chemical Engineering	424	164	260	Top Quartile $97K	18%
	Computer Engineering	575	355	220	Top Quartile $131K	13%
	General Engineering	412	254	158	Top Quartile $97K	18%
	Transportation Sciences and Technologies	145	22	122	Top Quartile $99K	Top Quartile 41%
	Industrial and Manufacturing Engineering	242	132	110	Top Quartile $97K	15%
	Miscellaneous Engineering	120	28	92	Top Quartile $97K	17%
	Aerospace Engineering	145	75	71	Top Quartile $101K	22%
	Biological Engineering	90	43	47	Top Quartile $97K	22%
	Engineering Mechanics, Physics, and Science	50	3	46	Top Quartile $97K	17%
	Electrical Engineering Technology	88	47	41	Top Quartile $105K	16%

Table 5.1 Undersupplied Fields, Bachelor's Level (Continued)

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Health Professions	Nursing	3,966	3,160	806	Top Quartile $82K	Top Quartile 37%
	Communication Disorders Sciences and Services	327	192	135	$61K	Top Quartile 37%
Humanities, Arts, and Other	Other Foreign Languages	99	39	60	$63K	Top Quartile 38%
	Music	749	381	368	$59K	Top Quartile 36%
	Theology and Religious Vocations	314	169	145	$60K	Top Quartile 64%
	Cognitive Science and Biopsychology	61	2	59	Top Quartile $82K	34%
Physical & Life Sciences, Social Sciences, and Agriculture	Physics	444	202	242	Top Quartile $82K	Top Quartile 36%
	Molecular Biology	206	1	205	Top Quartile $80K	Top Quartile 36%
	Microbiology	127	39	89	$77K	Top Quartile 38%
	Psychology	4,089	3,168	921	$63K	Top Quartile 35%
	Natural Resources Management	176	105	71	$68K	Top Quartile 36%

Using the inverse of the undersupply criteria described above, we identified the following academic field where degree completions exceed future state workforce needs.

Table 5.2 Oversupplied Fields, Bachelor's Level

Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Physical Fitness, Parks, Recreation, and Leisure	1,761	2,762	-1,001	$62K	30%

It should be noted that this field aligns with Fitness and Recreation, where the UNC System saw a nearly five percent annual decline (23 percent cumulative decline) in bachelor's degree completions over the past five years (see Figure 3.4). Since 2021, UNC institutions have discontinued six bachelor's degree programs in this field, which will sustain this downward trend as future students shift toward alternative programs.

5.2 Master's Level

At the master's level, the following fields were identified as undersupplied compared to future state workforce needs. No academic programs at this level were identified as oversupplied.

Table 5.3 Undersupplied Fields, Master's Level

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Business	Finance	390	18	371	Top Quartile $82K	19%
Computer Sciences	Computer and Information Systems	158	82	76	Top Quartile $121K	16%
Education	Elementary Education	368	111	258	$50K	Top Quartile 72%
	General Education	467	218	250	$52K	Top Quartile 68%
	Early Childhood Education	111	26	84	$50K	Top Quartile 68%
	Physical and Health Education Teaching	78	8	70	$55K	Top Quartile 62%
	Art and Music Education	90	27	63	$55K	Top Quartile 73%
	Social Science or History Teacher Education	46	2	44	$55K	Top Quartile 70%
	Secondary Teacher Education	60	24	36	$55K	Top Quartile 74%
	Teacher Education: Multiple Levels	45	16	28	$50K	Top Quartile 71%
	Mathematics Teacher Education	45	19	26	$55K	Top Quartile 75%

Table 5.3 Undersupplied Fields, Master's Level (Continued)

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Engineering	Mechanical Engineering	406	129	278	Top Quartile $101K	20%
	Electrical Engineering	486	236	250	Top Quartile $108K	18%
	General Engineering	163	14	148	Top Quartile $99K	19%
	Chemical Engineering	182	44	138	Top Quartile $97K	26%
	Civil Engineering	173	82	91	Top Quartile $94K	25%
	Aerospace Engineering	61	21	40	Top Quartile $100K	24%
	Biological Engineering	47	10	37	Top Quartile $97K	30%
	Engineering Mechanics, Physics, and Science	27	1	27	Top Quartile $101K	35%
Health Professions	Nursing	1,038	745	293	Top Quartile $82K	37%
	Pharmacy, Pharmaceutical Sciences and Administration	95	46	49	Top Quartile $82K	30%

Table 5.3 Undersupplied Fields, Master's Level (Continued)

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Humanities, Languages, and Other	English Language and Literature	690	142	548	$62K	Top Quartile 53%
	History	496	95	401	$61K	Top Quartile 53%
	French, German, Latin, and Other Common Foreign Language Studies	187	39	147	$62K	Top Quartile 51%
	Liberal Arts	184	74	110	$60K	Top Quartile 50%
	Philosophy and Religious Studies	218	122	96	$61K	Top Quartile 58%
	Area, Ethnic, and Civilization Studies	119	30	89	$63K	Top Quartile 54%
	Linguistics and Comparative Language and Literature	89	25	64	$64K	Top Quartile 50%
	Other Foreign Languages	40	4	36	$62K	Top Quartile 54%
	Multi-Disciplinary or General Science	149	48	101	Top Quartile $82K	37%
	Family and Consumer Sciences	192	96	96	$60K	Top Quartile 53%
Physical & Life Sciences	Biology	1,462	179	1,283	Top Quartile $82K	38%
	Biochemical Sciences	286	7	280	Top Quartile $82K	35%
	Microbiology	69	23	46	Top Quartile $82K	42%

Table 5.3 Undersupplied Fields, Master's Level (Continued)

Academic Field Group	Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Professional, Public, and Social Services	Criminal Justice and Fire Protection	308	92	216	$60K	Top Quartile 50%
	Architecture	202	113	89	Top Quartile $88K	14%
	Human Services and Community Organization	45	8	37	$58K	Top Quartile 57%
Social Sciences	Psychology	1,765	129	1,636	$61K	Top Quartile 48%
	Economics	448	125	323	Top Quartile $88K	25%
	Sociology	322	56	266	$61K	Top Quartile 55%
	Miscellaneous Psychology	93	12	81	$58K	Top Quartile 51%
	International Relations	112	62	50	Top Quartile $82K	34%
	Counseling Psychology	59	10	49	$57K	Top Quartile 58%

5.3 Doctoral Level

At the doctoral level, the following fields were identified as undersupplied relative to future state workforce needs. No doctoral fields were found to be oversupplied.

Table 5.4 Undersupplied Fields, Doctoral Level

Academic Field	NC Demand	NC Degree Completions	Gap	Earnings	Public Service Share
Psychology	251	43	208	$79K	Top Quartile 57%
Mathematics	124	31	92	$76K	Top Quartile 56%
Veterinary Medicine	178	97	81	Top Quartile $123K	11%
Communications	39	5	34	$68K	Top Quartile 56%
Economics	67	36	31	$77K	Top Quartile 57%

6 North Carolina Critical Workforce Initiatives

While the previous section provided a gap analysis across all academic fields, we will now take a moment to look at how North Carolina is tackling critical workforce gaps in the areas of nursing, engineering, social work, and teaching.

As background, North Carolina has a long history of strong state support for economic growth and public higher education. North Carolina ranked seventh among states in higher education funding per full-time student in 2024, with appropriations for public four-year institutions (per FTE) at 1.3 times the national average.[25] These investments have resulted in a robust and highly skilled talent pool — including 89,000 graduates annually with bachelor's and higher degrees from 52 public and private institutions — a key factor in securing North Carolina's spot as the Top State for Business for three of the past four years.[26]

Beyond these broad investments, state leaders also have provided targeted support to reduce specific gaps in critical workforce areas. With generous support from the North Carolina General Assembly, the UNC System has taken proactive measures in recent years to address gaps in key areas mentioned below. We are thankful for the support of the General Assembly — and our many state partners — for identifying and funding the following initiatives to ensure the talent pipeline is being developed in the coming years. These initiatives are showing positive outcomes, and we anticipate they will help to reduce projected gaps in the coming years.

6.1 Nursing

In 2023, the General Assembly provided the UNC System with $40 million to increase the development and expansion of healthcare related degrees.[27] Using these funds, the University of North Carolina System Office awarded $29 million in 2024 to expand nursing education across the 12 UNC System schools of nursing. The UNC System's goal is to increase the output of nursing degrees by 50 percent. Grant funds are being used to support activities such as hiring more faculty to open more spots to qualified applicants, expanding lab space and clinical placements, and expanding mentoring and tutoring for pre-nursing students.[28] This initiative and other efforts to increase the education and retention of skilled nursing professionals across the state are beginning to make positive strides.

6.2 Engineering

In 2021 the General Assembly provided $125 million for "Engineering NC's Future" — a special initiative aimed at increasing the state's engineering talent. The initiative was launched in response to significant business growth in recent years, particularly in advanced manufacturing and technology sectors, with large job announcements from companies such as Apple, Toyota, Corning, Merck, Honda, Boom Supersonic, and JetZero. This funding includes:

- $50 million for NC State University to enroll approximately 4,000 additional engineering and computer science students, hire more faculty and staff, and upgrade facilities.[29]

[25] State Higher Education Executive Officers Association, State Profile: North Carolina, 2024.
[26] Economic Development Partnership of NC, North Carolina: Discover the Top Workforce in the Country, 2024.
[27] UNC-Chapel Hill Cecil G Sheps Center, NC Nursecast: A Supply and Demand Model for Nurses in North Carolina, November 1, 2021.
[28] UNC System Office, UNC System Awards $29 Million in Grants to Expand Nursing Education, July 16, 2024.
[29] NC State, Engineering North Carolina's Future.

- $41 million for University of North Carolina at Charlotte to enroll approximately 2,000 more STEM students, attract world-class faculty, and develop state-of-the-art learning and research spaces and programs to support industry.[30]
- $35 million for North Carolina Agricultural and Technical State University to recruit more top engineering students, hire additional engineering faculty, and create new advanced engineering laboratories.[31]

This strategy is building momentum. From fall 2020 to fall 2025, enrollment for engineering bachelor's degree seeking students has increased by 22 percent from 11,900 to 14,400 students.[32]

6.3 Social Work

While North Carolina appears to have an adequate supply of social work degree completions, persistent workforce shortages continue to exist in specialty areas such as child and family services, substance use, etc. One promising initiative launched in fall 2025 by the NC Department of Health and Human Services (NC DHHS) is the Public Service Leadership Program. This five-year initiative, led by the School of Social Work at the University of North Carolina at Chapel Hill, aims to increase awareness of social work careers and providing training and support for social work students, with a special emphasis on critical need areas such as child and family services, substance use, aging, intellectual/developmental disabilities, and justice-involved populations.[33] Another key focus of this initiative is that it targets underserved rural and Medicaid-eligible populations.

One item to note about the area of Social Work is that this is an area that will need continued monitoring — and potential reassessment. First, the workforce alignment analysis is completed at a state level, which masks significant regional differences. This is quite important for a state like North Carolina — the second most rural state in America — where rural disparities exist. The University of North Carolina's Sheps Center report on the "State of North Carolina's Mental Health and Substance Use Services Workforce: Need, Supply, and Distribution Landscape Assessment" provides a helpful overview of such disparities. Also, for health profession occupations, these occupations need additional "patient-population demand adjustments." As demand adjustments are made going forward, reassessment will be needed for Social Work.

6.4 Teaching

As the state continues to face rapid population and economic growth, a strong teacher workforce is a critical foundation for developing the skilled talent that will be needed across all sectors and jobs. Our workforce alignment analysis shows significant supply gaps in a variety of Education fields. As shown in Tables 5.1 and 5.3, eight education fields at the bachelor's level and nine education fields at the master's level are recommended for growth. These fields collectively have a projected supply gap of around 1,800 Education degrees annually (1,200 bachelor's and 600 master's degrees).

The significant workforce gap appears due to a confluence of factors including (1) rapid population growth creating increased demand for educators, (2) a retiring workforce of teaching professionals, and (3) waning student demand for Education programs. Regarding waning student demand, Education is the field where UNC System bachelor's degree completions are declining most rapidly (five percent average

[30] Inside UNC Charlotte, Engineering Charlotte's – and North Carolina's – Future, March 11, 2022.
[31] North Carolina A&T, 'Engineering North Carolina's Future' Makes $35M Investment in North Carolina A&T, April 13, 2022.
[32] UNC System Interactive Data Dashboards for Enrollment reflects undergraduate, degree-seeking students with engineering as a first major.
[33] NC Department of Health and Human Services, NCDHHS, Universities Partner on a New Five-Year Program to Improve and Expand Social Work Workforce, October 9, 2025.

annual decline, Figure 3.5). Also contributing to the workforce shortage are high attrition rates as educators leave the profession for other professions, resulting in increased turnover vacancies to be filled.

UNC System graduates of Educator Preparation Programs (EPP) are a critical source of longer-term stability in K-12 classrooms, as experienced teachers from educator preparation programs have a 55 percent lower attrition rate compared to teachers who enter the profession via Residency Licensure pathways.[34] Roughly 80 percent of UNC System EPP graduates who completed their degree in 2022 remain employed at North Carolina public K-12 school three years later.

To address the state's critical need for more teachers, the UNC System supports several initiatives aimed at increasing teacher workforce pipelines, such as:

- The NC Teaching Fellows (NCTF) program is a competitive, merit-based forgivable loan program that provides tuition assistance of up to $10K per year for qualified students committed to teaching elementary education, special education, or STEM in a North Carolina public school. Remarkably, 82 percent of NC Teaching Fellow program completers are currently teaching in a North Carolina public school as of January 2026.[35,36]
- With support from the General Assembly, the UNC System receives an annual appropriation to support teacher recruitment efforts across its Educator Preparation Programs. These funds are disbursed to EPPs allowing for customized recruitment strategies at each institution.[37]
- Fayetteville State University will open a new College of Education building in 2026, with $69 million from the General Assembly.[38] Additionally, in fall 2026 FSU is launching a new bachelor's degree in special education, a persistent area of high need for the state's K-12 schools.[39]
- UNC-Chapel Hill will relaunch its Bachelor of Arts in Elementary Education, offering its first class in fall 2026.[40]

While these initiatives are commendable — especially the North Carolina Teaching Fellows program, which has made strides to blunt the declining supply of qualified teachers — additional efforts will be needed to address the workforce gap. Again, ensuring that there is a strong pipeline of qualified educators in classrooms across North Carolina is foundational to develop the skilled talent that the state will need across all sectors and occupations.

[34] NC Department of Public Instruction State Board of Education, 2023-2024 State of the Teaching Profession in North Carolina, June 17, 2025.
[35] UNC System Office, NC Teaching Fellows Program Announces Record 530 Awards Offered for 2025-26, April 3, 2025.
[36] UNC System Office, North Carolina Teaching Fellows Program: Annual Report, January 2026.
[37] UNC System Office, Educator Preparation Efforts at the University of North Carolina System Office: Report to the Joint Legislative Education Oversight Committee, October 15, 2025.
[38] City View, Fayetteville State Breaks Ground for New College of Education Building, December 12, 2024.
[39] Greater Fayetteville Business Journal, FSU Opens Doors for Future Special Educators with New Bachelor's Program, January 13, 2026.
[40] UNC-Chapel Hill School of Education, Carolina Relaunches Undergraduate Elementary Education Degree, December 12, 2025.

7 External Factors

As previously mentioned, as with any forecasting model there are data limitations. Therefore, in this section we will provide an overview of two external factors (technology and net migration) that will have an emerging impact on North Carolina's future labor market.

7.1 Artificial Intelligence

With the rise of artificial intelligence, a key question that has risen among employers, labor economists, and university leaders is the impact of AI on workforce demand and, respectively, AI's impact on employment projections and corresponding education and skills demand. Differing views are emerging on this topic, and we will aim to provide a (simplified) synthesis of these viewpoints and their impact on workforce demand here.

Technologists and media headlines often predict impending large-scale job displacement, particularly for knowledge-based white-collar jobs. These views are largely derived from recent trends in job postings and hiring rates, as well as estimates of "AI exposure" of occupations based on AI's current or theoretical ability to perform tasks required by those occupations.

On the other hand, many labor economists take a more measured and slightly more optimistic viewpoint. This is partially attributable to utilizing a historical lens of prior technological revolutions. For example, while the Industrial Revolution and the Internet Revolution caused significant disruptions in the labor market, both also generated economic growth, spawned entirely new industries (such as e-commerce) and jobs (e.g., software developers and web designers). Also, while technologists often predict abrupt workforce impact, labor economists often note that workforce impact has transpired more gradually than technologists predict.[41] As such, adjustments to employment projections often exercise caution in the early days of a new technology's capability development and adoption in the workplace. As shown in Table 7.1, BLS projects growth rates for certain computer, legal, and business and finance occupations with high "AI exposure" to exceed the national employment growth rate of 3.1 percent over the next decade.

[41] [41] U.S. Bureau of Labor Statistics. Incorporating AI Impacts in BLS Employment Projections: Occupational Case Studies. February 2025

Table 7.1 National Employment Projections for Selected "AI-Prone" Occupations, 2024-34

Occupation Title	Occupation Code	Employment, 2024 (thousands)	Employment, 2034 (thousands)	Percent Change, 2024 34
Total, All Occupations	00-0000	169,956	175,168	3.1%
Computer Occupations	15-1200	4,986	5,414	8.6%
Computer Systems Analyst	15-1211	521	567	8.7%
Information Security Analyst	15-1212	183	235	28.5%
Computer Network Architects	15-1241	179	201	11.9%
Database Architects	15-1243	67	72.7	8.7%
Software Developers	15-1252	1,694	1,961	15.8%
Software Quality Assurance Analysts and Testers	15-1253	201.7	222	10.0%
Web Developers	15-1254	86	93	7.5%
Web and Digital Interface Designers	15-1255	129	138	7.0%
Legal Occupations	23-0000	1,418	1,457	2.7%
Lawyers	23-1011	865	901	4.1%
Judicial Law Clerks	23-1012	14.5	14.9	2.5%
Business and Financial Operations Occupations	13-0000	11,262	11,849	5.2%
Accountants and Auditors	13-2011	1,580	1,653	4.6%

Source: U.S. Bureau of Labor Statistics Occupational Employment Projections, 2024-34

Given the rapid evolution of AI capabilities and its widespread use, adoption, and integration into workflows, AI's potential impact on workforce demand is highly uncertain and nuanced. However, here we will provide some additional context on key factors and trends to monitor:

(1) Emerging studies of empirical data on tasks being performed by AI in work settings explore the nuances of which tasks can be fully *automated versus augmented* to boost worker productivity.[42]

(2) AI productivity gains may lower the cost of goods and services, thereby increasing consumer demand and increasing demand for workers. For example, BLS highlights that for computer occupations there is a "possibility that increased productivity from the use of AI may lower prices and increase demand for software products, thus boosting employment demand for software developers."[43]

(3) Despite differences in viewpoints, one area of agreement is that AI skills will be more prevalent in many occupations. In fact, an uptick in AI-related skills in job postings is already being observed.[44] As such, the UNC System is committed to increasing AI literacy among its students, including the launch of a new "Foundational AI Skills Course" that will be offered to all UNC System students beginning fall 2026. Additionally, UNC institutions are launching bachelor's and master's level degrees in AI and new AI academies meet the growing need for AI skills.

[42] Anthropic. Labor market impacts of AI: A new measure and early evidence. March 2026.
[43] U.S. Bureau of Labor Statistics. Incorporating AI Impacts in BLS Employment Projections: Occupational Case Studies. February 2025
[44] Indeed Hiring Lab. January 2026 US Labor Market Update: Jobs Mentioning AI Are Growing Amid Broader Hiring Weakness. January 22, 2026

At a more macro level, various studies point to the importance of core "transferable skills" (sometime referred to as "soft skills" or "foundational skills") that equip workers to weather and adapt to future labor market disruptions. For example, an analysis[45] of 70 million job transitions across approximately 1,000 occupations over a 14-year period found that people with "broad, strong foundational skills" (including reading comprehension, basic math, communication, critical thinking, and ability to work in teams) "earn higher wages throughout their careers, move into more advanced roles, learn specialized skills more quickly, and were more resilient to industry changes." These foundational skills learned in college are among the critical "transferable skills" that will prepare our graduates to endure future labor market changes and uncertainty.

As illustrated by our workforce alignment model, the path from a college degree to an occupation is not linear or limited. Actual employment data show that North Carolinians with bachelor's and higher-level degrees enter many different occupations. Arming more North Carolinians with college degrees with core "transferable skills" will provide a resiliency buffer, enabling them to adapt to an ever-changing workplace.

7.2 Net Migration

As noted previously, the state is experiencing a large influx of migrants, particularly from other states, many of whom have skills and credentials that may fill workforce gaps. While these educated new residents can be a piece of the solution, North Carolina cannot rely fully on this population to close projected gaps, particularly in critical workforce areas facing national shortages. In occupations such as teaching and health professions, severe national shortages mean states face stiff competition for skilled workers.

More importantly, the UNC System is dedicated to the service of North Carolina and its people, as reflected in our mission statement. Our goal is to enable all North Carolinians, especially those currently living in our state, to partake in these opportunities and prosper. As such, the following section focuses on current efforts underway at the UNC System to expand educational attainment among North Carolinians.

[45] Harvard Business Review. Soft Skills Matter Now More Than Ever, According to New Research. August 26, 2025

8 Engaging North Carolinians for Tomorrow's Jobs

With a projected shortfall of 5,000 to 10,000 bachelor's and higher degrees per year, North Carolina will not be able to close such a large gap by focusing on traditional-age students (recent high school graduates) alone. The state had approximately 122,000 high school graduates in 2025 and is expected to see a marginal increase of just 1,000 high school graduates (to 123,000) from 2025 to 2041, according to the North Carolina State Demographer.[46]

One opportunity to close this projected gap is to continue to increase college-attainment rates among "nontraditional" age North Carolinians — including adult learners (age 25+), community college transfer students, and military learners. Not only will such efforts contribute to closing the workforce gap but they will also provide an opportunity to ensure that all boats rise amid a rising (economic) tide.

As such, the UNC System and its institutions have had an acute focus on increasing access among adult learners, community college transfer students, and military learners. Evidence shows these initiatives are starting to pay dividends. For example, from fall 2024 to fall 2025 enrollment of adult learners, community college transfer students, and military affiliated learners grew by 6.5 percent, nearly double the enrollment growth rate for the overall student population (3.5 percent).[47]

8.1 Adult Learners

With more than 1 million adults living in the state with some college credit but no degree or credential, North Carolina leaders have invested in adult educational attainment, including with the 2019 establishment of myFutureNC and a statewide goal of reaching 2 million adults with industry-valued credentials by 2030.[48] The General Assembly also has provided generous support for initiatives targeted to adult learners such as Project Kitty Hawk, a nonprofit UNC System affiliate that partners with UNC institutions to deliver online, high-demand, workforce-relevant programs to adults.

Other state initiatives focused on adult learners include a UNC System partnership with ReUp Education, which aims to reenroll adults with some college and no credential. Since 2023, ReUp has brought more than 4,000 North Carolinians back to UNC System institutions, of which more than 600 have graduated.[49]

In fall 2025, adult learner enrollment grew by 5.6 percent from fall 2024.

8.2 Community College Transfers

Similar to ReUp, NC Reconnect — led by the John M. Belk Endowment and a host of partners — has reenrolled more than 4,000 adults at NC community colleges across the state since 2021.[50] To streamline pathways for community college students, the UNC System has published more than 1,500 Transfer Guides that map NC community college degrees to UNC institution degrees. Also, in 2025, the UNC System enacted regulation to reduce a transfer student's wait time for a transcript review.

In fall 2025, nearly 11,000 students from NC community colleges enrolled across the UNC System reflecting a 7.8 percent increase from fall 2024.[51]

[46] Cline, Michael, Population of 18 Year Olds Peaking, August 21, 2025.
[47] UNC System Student Data Mart and UNC System Interactive Data Dashboards for Enrollment and Transfer Students.
[48] National Student Clearinghouse, Some College, No Credential Student Outcomes: 2025 Report for the Nation and the States, June 4, 2025.
[49] UNC System Office, UNC System Helps North Carolinians Return to College to Finish Their Degrees, July 1, 2025.
[50] EdNC, NC Community Colleges Prepare for Workforce Pell to Support Adult Learners, November 6, 2025.
[51] UNC System Office, UNC System Sees Record Number of Transfer Students in 2025, October 20, 2025.

8.3 Military Learners

With an estimated 250,000 military learners living in North Carolina with less than a bachelor's degree, the UNC System set a Strategic Plan goal of increasing military learner enrollments to 25,000 by 2027, recognizing this as a critical talent source for the state.[52,53] Also, to help service members maximize credit toward a degree, the UNC System launched the UNC Military Equivalency System (MES) which maps military training courses and occupational experiences directly to UNC institution courses.

In fall 2025, the UNC System enrolled more than 23,000 miliary-affiliated learners, representing a 5.8 percent increase from fall 2024.

[52] VisionPoint Marketing, UNC System Military Marketing Strategy, July 2025.
[53] UNC System, Higher Expectations: University of North Carolina System Strategic Plan for 2022-2027, 2022.

9 Conclusion

While there are many factors that influence labor market conditions ranging from technology to demography, inflation, foreign trade, housing, energy, climate, and geopolitical events, it is clear that North Carolina has a strong and growing economy that will require a highly skilled workforce for years to come. Our model shows the state is facing a projected shortfall of approximately 5,000 to 10,000 degree completions at the bachelor's level or higher to fill this future demand. Fortunately, the UNC System and state leaders have already begun to invest resources into growing the pool of graduates with critical skills needed for our state. Additionally, the UNC System's focus on widening access to "nontraditional" age students — adult learners, community college transfers, and military learners — not only contributes a strengthening workforce pipeline but also ensures that all boats rise amidst this rising (economic) tide.

10 With Gratitude

While the thoughts and opinions expressed in the report are solely those of the UNC System, we are thankful to stand on the shoulders of the great work done by state and national partners. A few notable partners that we'd like to recognize include NC Department of Commerce — Labor and Economic Analysis Division, Carolina Demography, UNC Sheps Center for Health Services Research, NC Center on Workforce Health, myFutureNC, Arnold Ventures, and American University's Postsecondary Education and Economics Research Center.

We are thankful for the time, resources, and thought partnership extended by all partners, which has highlighted one of the greatest state assets for workforce alignment and development: a spirit of collaboration.

11 Post Data Release

As the UNC System Workforce Alignment Report was undergoing final review, the NC Labor and Economic Analysis Division (LEAD) released new Occupational Employment Projections for the 2024-34 period. We applied the workforce alignment model to the revised 2024-34 projections and compared the results to the 2022-32 projections used in this report. As shown in Figure 11.1, our degree demand estimates based on the 2032 and 2034 occupational employment projections are quite similar and the findings of this report continue to hold.

The largest driver of non-transfer job openings is labor market exits (e.g., retirements). The updated projections show almost no change in labor market exits as these job openings are largely determined by the demographics of current workers (e.g., age) which shift only modestly over the two-year period from 2022 to 2024. Regarding job openings from net employment growth (i.e., newly created jobs), the updated projections show roughly half as many job openings from newly created jobs. This largely reflects the very rapid *short-term* employment growth that North Carolina experienced as it continued to recover from the COVID recession. Given that there are roughly four to five times as many job openings from labor market exits as from net employment growth, the net result is a roughly 10 percent decrease in the projected non-transfer openings. When applying the revised projections to the workforce alignment model, the program demand estimates only decrease by 10 percent on average, as expected. While the demand estimates for individual programs may deviate from the average, these deviations are quite small (see Figure 11.1) and do not qualitatively alter the findings for programs in this report. Also, as noted in Section 5, the estimates are directional and proximate rather than precise measure of degree completion gaps.

Figure 11.1 Total Demand Comparison, 2022-32 Versus 2024-34