

**ANALYSIS OF OCCUPATIONAL PROJECTIONS AND WAGES  
BY EDUCATION AND TRAINING REQUIREMENTS,  
NEW YORK STATE**

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Prepared by  
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## Introduction

The U.S. Bureau of Labor Statistics (BLS) classifies all occupations into one of 11 categories, based on the occupation's most significant source of post-secondary education or training. The BLS uses these three organizing principles:

- ❖ An occupation is placed into the category that best describes the post-secondary education or training needed by most workers to become fully qualified.
- ❖ Post-secondary awards, if generally needed for entry into the occupation, take precedence over work-related training, even though additional skills or experience may be needed for a worker to become fully qualified.
- ❖ The length of time an average worker generally needs to become fully qualified through a combination of on-the-job training and experience is used to categorize occupations in which a post-secondary award generally is not needed for entry.

## Description of Post-secondary Award Categories

*First professional degree*---Completion of the degree usually requires at least three years of full-time academic study beyond a bachelor's degree.

*Doctoral degree*---Completion of a Ph.D. or other doctoral degree usually requires at least three years of full-time academic study beyond a bachelor's degree.

*Master's degree*---Completion of the degree usually requires one or two years of full-time academic study beyond a bachelor's degree.

*Post-secondary (bachelor's or higher) degree, plus work experience*---Most occupations in this category are management occupations. All require experience in a related non-management position for which a bachelor's or higher degree is usually required.

*Bachelor's degree*---Completion of the degree generally requires at least four years, but not more than five years, of full-time academic study.

*Associate degree*---Completion of the degree usually requires at least two years of full-time academic study.

*Post-secondary vocational award*---Some programs last only a few weeks, while others may last more than a year. Programs lead to a certificate or other award, but not a degree.

## **Description of Work-related Training Categories**

*Work experience in a related occupation*---Many occupations requiring work experience are first-line supervisors/managers of service, sales and related, production, or other occupations, or are management occupations.

*Long-term on-the-job training*---More than 12 months of on-the-job training or combined work experience and formal classroom instruction are needed for workers to develop the skills necessary to be fully qualified. This category also includes formal and informal apprenticeships (that may last up to five years); intensive occupation-specific, employer-sponsored programs such as fire/police academies and schools for air traffic controllers; and, individuals undergoing training generally are considered to be employed in the occupation. Also included in this category is the development of a natural ability—such as that possessed by musicians, athletes, actors, and other entertainers—that must be cultivated over several years, frequently in a non-work setting.

*Moderate-term on-the-job training*---Skills needed to be fully qualified can be acquired during one to 12 months of combined on-the-job experience and informal training.

*Short-term on-the-job training*---Skills needed to be fully qualified can be acquired during a short demonstration of job duties or during one month or less of on-the-job experience or instruction.

*Source: U.S. Bureau of Labor Statistics*

## **Data Analysis**

The 11 post-secondary education/training categories outlined above were used to analyze statewide occupational projections and wage data. Expected employment growth, total annual openings, and wage information for over 700 occupations in New York State were utilized. Data for individual occupations were sorted by education/training category and then aggregated for this analysis.

Projections, which currently cover the 2004-2014 period, are widely used for planning and preparation of educational and training programs, developing career information and studying long-range trends in occupational employment. Specific projections-related data analyzed by education/training category in this report include: Share of Total Employment (Figure 1); Numeric Change in Employment, 2004-2014 (Figure 2); Percentage Change in Employment, 2004-2014 (Figure 3); and, Total Annual Openings (Figure 4).

The wage data presented in this report come from the Occupational Employment Statistics (OES) survey, which is a semiannual mail survey of employers. The survey measures occupational employment and occupational wage rates for wage and salary workers in nonfarm establishments, by industry. Statewide OES wage data are based on responses from approximately 55,000 employers, which are collected over a three-year period. Data from this survey were used to calculate the average (mean) occupational wage by education/training category presented in Figure 5.

## Findings

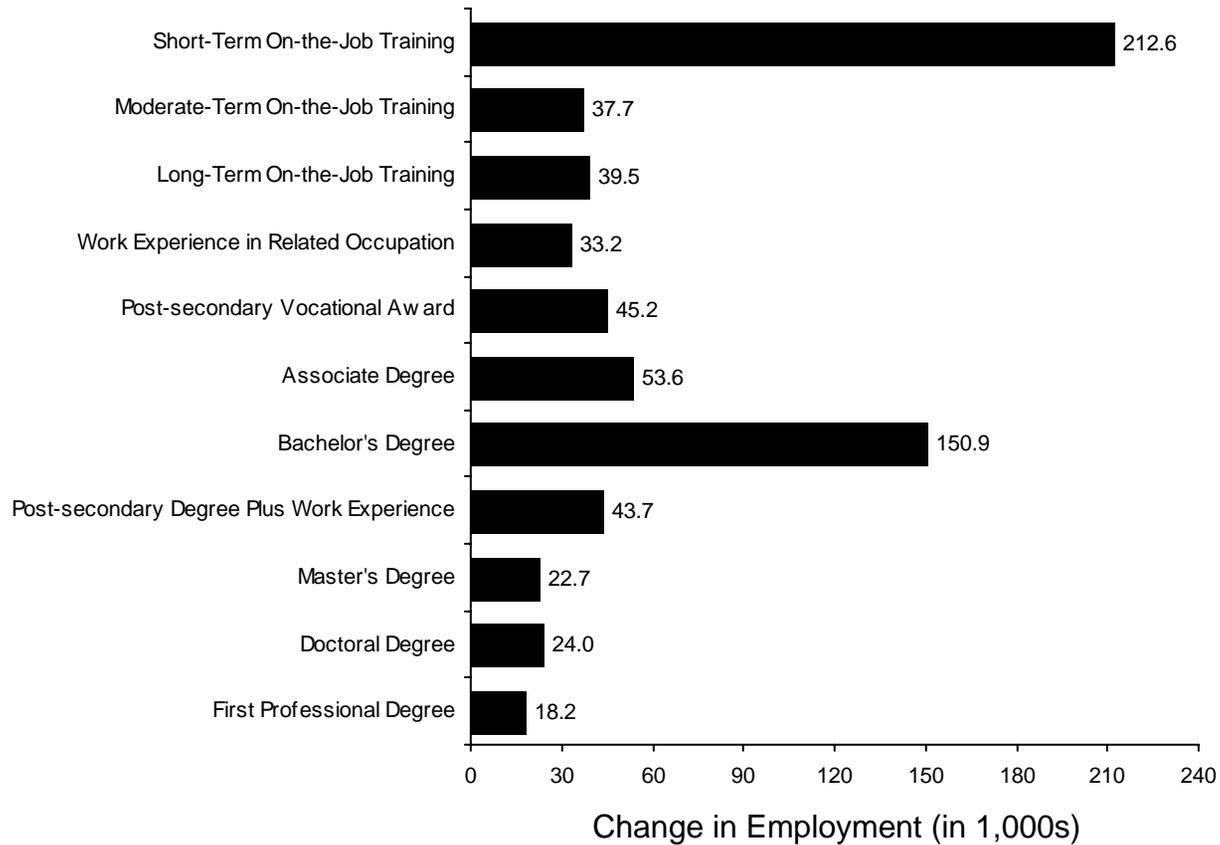
- ❖ More than 50 percent of the jobs in New York State require only short- or moderate-term on-the-job training (Figure 1).
- ❖ Fewer than 25 percent of the jobs in New York State require a bachelor's degree or higher (Figure 1).
- ❖ Of the 11 post-secondary education or training categories, the two that are expected to have the largest numeric employment increases between 2004 and 2014 are short-term on-the-job training (+212,600) and bachelor's degree (+150,900). These two categories together account for more than one-half of the total employment increase in the state over this period (Figure 2).
- ❖ Between 2004 and 2014, occupations requiring at least an associates degree are projected to grow more than twice as fast (+12.8 percent) than those requiring only some form of on-the-job training or a post-secondary vocational award (+5.4 percent) (Figure 3).
- ❖ Over the 2004-2014 period, the fastest-growing set of occupations (percentage terms) are those requiring a doctoral degree, which are expected to increase by 22.1 percent. The slowest-growing set of occupations (percentage terms) are expected to be those requiring moderate-term on-the-job training (Figure 4).
- ❖ Occupations requiring only short-term on-the-job training account for more than two-fifths of the annual job openings in New York State (Figure 4).
- ❖ Less than 25 percent of annual openings in New York State are in occupations that require at least a bachelor's degree (Figure 4).
- ❖ Occupations requiring a first professional degree (e.g. lawyers, physicians) have the highest average wage, \$122,800 (Figure 5). The group with the second highest average wage (\$105,600) is those requiring a post-secondary (bachelor's or higher) degree plus work experience (\$105,600). The high wage here is due to the fact that most occupations in this category are management occupations.
- ❖ The lowest average wage (\$23,900) is found among occupations requiring only short-term on-the-job training (Figure 5).
- ❖ Although average wage levels, in general, rise as job training or post-secondary education requirements increase, there are notable exceptions (Figure 5). For example, the associates degree category has a relatively high average wage (\$55,500) because about half of its employment is comprised of registered nurses (although many in the occupation hold higher level degrees). This occupation has a mean wage of almost \$65,000. In contrast, the average wage for occupations requiring a master's degree (\$53,700) is perhaps lower than expected because much employment is concentrated in social services positions (e.g. mental health counselors and substance abuse counselors) with average pay in the \$35,000-\$40,000 range.

Figure 1:  
Share of Total Employment, New York State,  
by Level of Education and Training Required, 2004



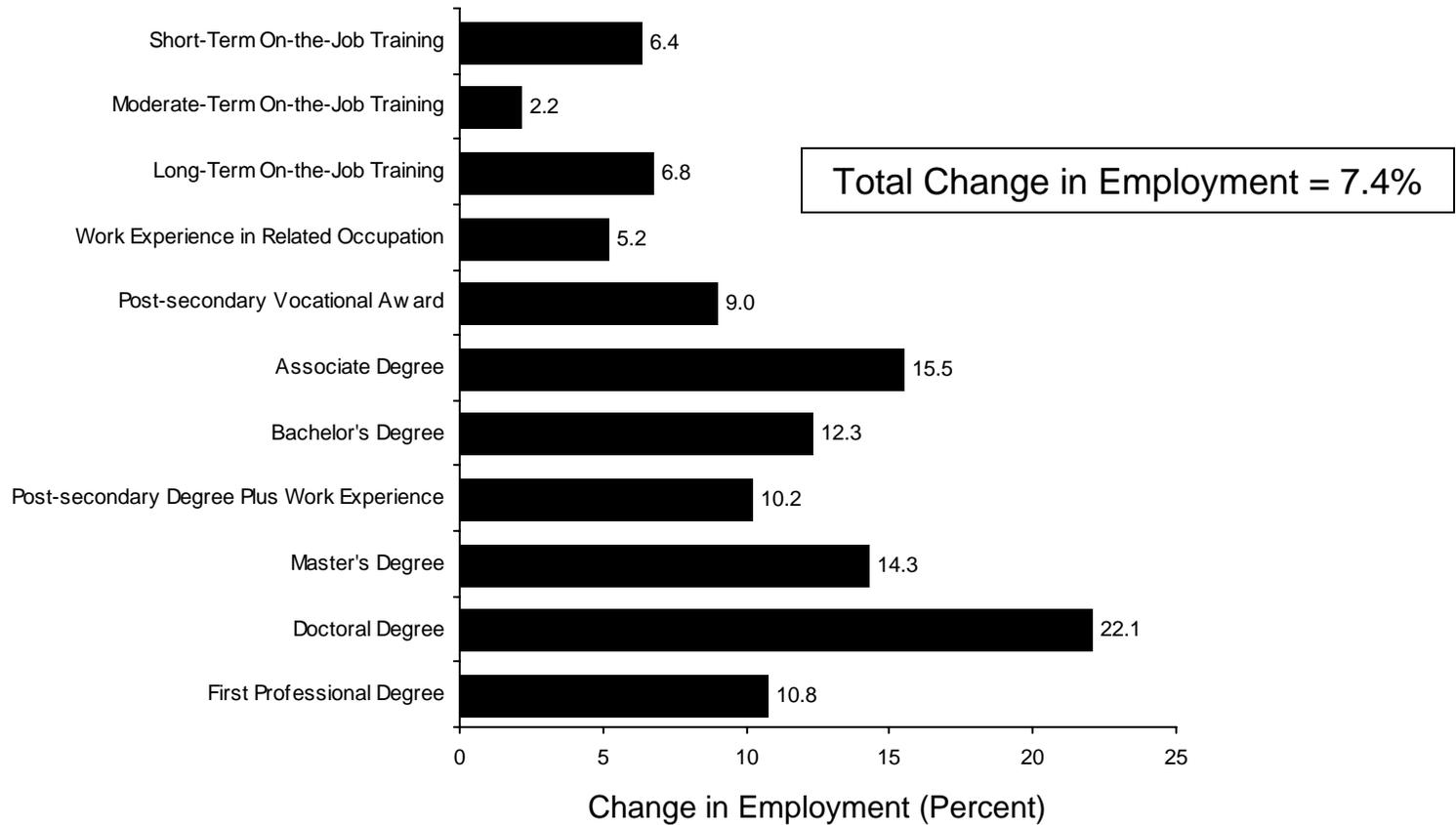
Source: New York State Department of Labor, Division of Research & Statistics

Figure 2:  
Projected Numeric Change in Employment Growth, New York State,  
by Level of Education and Training Required, 2004 to 2014



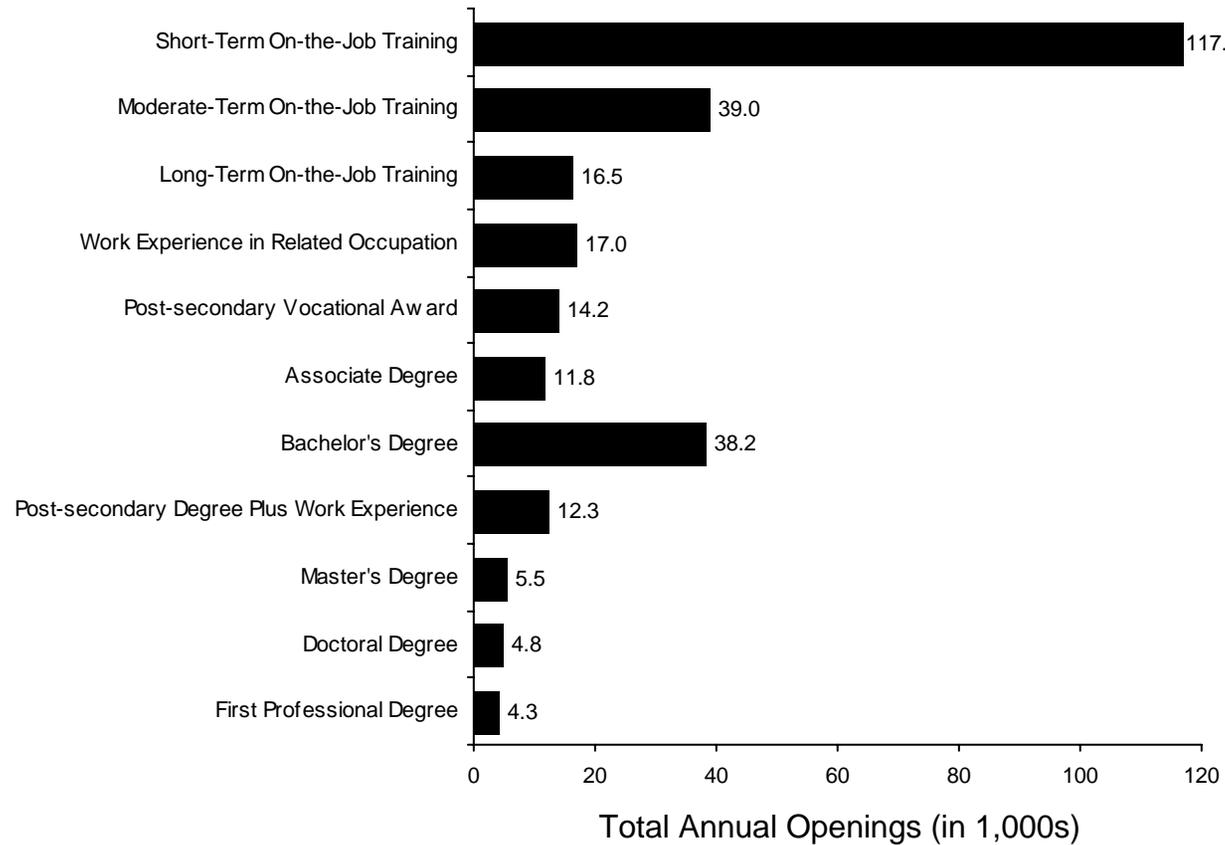
Source: New York State Department of Labor, Division of Research & Statistics

Figure 3:  
 Projected Percent Change in Employment, New York State,  
 by Level of Education and Training Required, 2004 to 2014



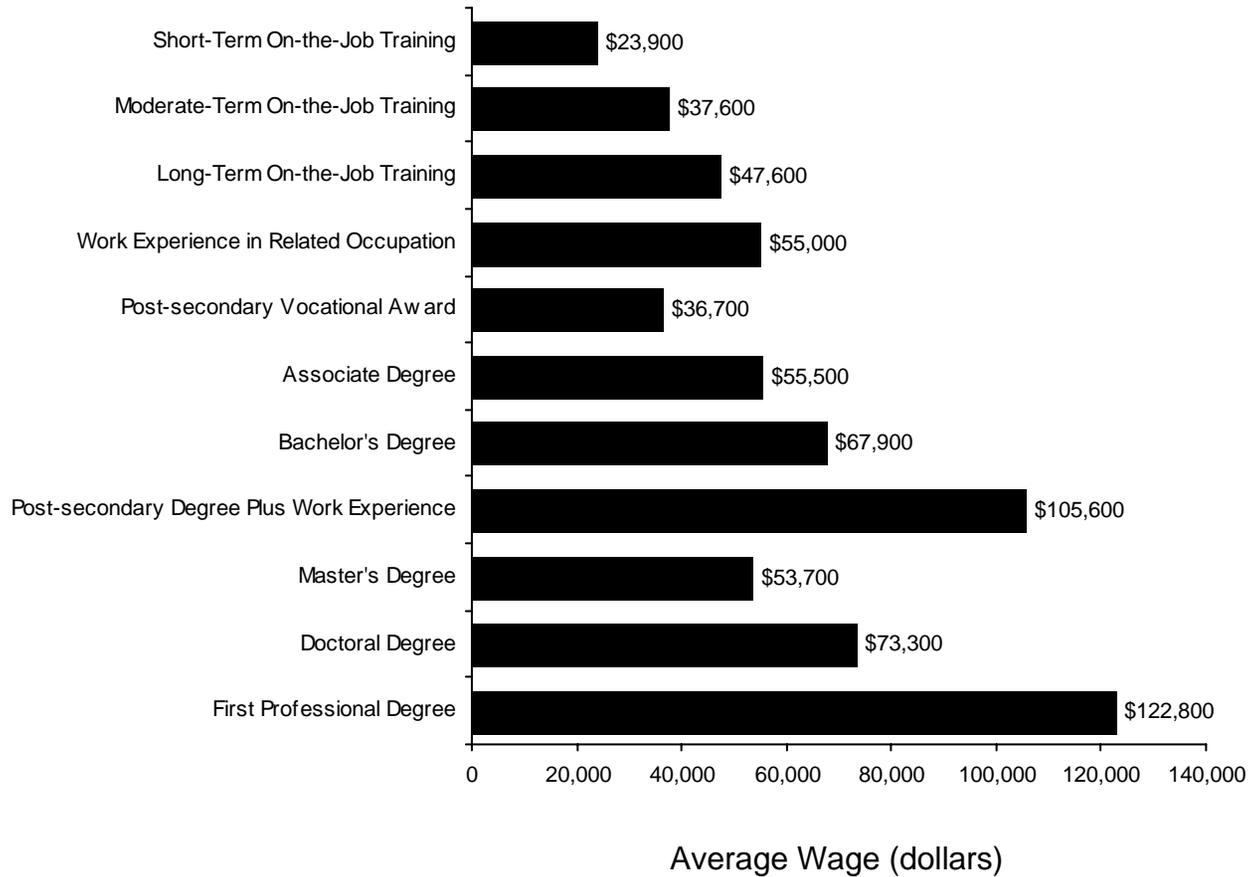
Source: New York State Department of Labor, Division of Research & Statistics

Figure 4:  
Projected Total Annual Openings, New York State,  
by Level of Education and Training Required, 2004 to 2014



Source: New York State Department of Labor, Division of Research & Statistics

Figure 5:  
 Average (Mean) Occupational Wage, New York State,  
 by Level of Education and Training Required, 2006



Source: New York State Department of Labor, Division of Research & Statistics