A Closer Look At Occupational Projections
New York State | 2010
# Table of Contents

I. Introduction .................................................................................................................. 2

II. Findings ...................................................................................................................... 2

  Sidebar: Industry versus Occupation ........................................................................... 2

III. Industry Trends Influencing Occupational Growth to 2016 ........................................ 4

  Sidebar: Frequently Used Terms .................................................................................. 5

  Table 1: New York State Industry Projections to 2016 ................................................ 6

IV. New York State Industry Employment and Wages in 2008 .......................................... 7

  Table 2: 2008 New York State Industry Employment and Wages ............................... 8

V. Making Sense of Occupational Projections for New York State ................................... 9

  A. Top 25 Occupations with the Greatest Growth in Numbers of Jobs .......................... 10

  Table 3: Top 25 Occupations with Greatest Projected Growth to 2016 ......................... 12-13

  B. Top 25 Occupations with the Most Openings to 2016 ............................................ 15

  Sidebar: Growth and Replacement ................................................................................ 15

  Table 4: Top 25 Occupations with Largest Number of Annual Openings .................... 16-17

VI. Education and Occupational Growth: How are they Related? .................................. 19

  Table 5: Top 25 Fastest Growing Occupations ............................................................. 20

  Table 6: Top 25 On-the-Job Training Occupations with Greatest Projected Growth .......... 22-23

  Table 7: Top 25 On-the-Job Training Occupations with Largest Number of Annual Openings 24-25

  Table 8: Top 25 Post Secondary Occupations with Greatest Projected Growth .............. 26-27

  Table 9: Top 25 Post Secondary Occupations with Largest Number of Annual Openings 28-29

VII. Occupational Projections: An Application ................................................................ 30


VIII. Summary .................................................................................................................. 31

IX. Appendix .................................................................................................................... 31

  The Projections Process ............................................................................................... 31
I. Introduction

Job seekers, students, workers and employers in New York State can use the information here to plan their futures. This report combines information about jobs that are expected to grow with information on each job's usual wages, education and training requirements. This provides a powerful tool to gauge the current and future prospects of an occupation.

Industry vs. Occupation

An industry is a cluster of businesses that produce comparable products or services. The North American Industry Classification System classifies establishments based on how they create their goods and services. Usually, goods or services are similar between firms in the same industry. Example: Nike, New Balance, Reebok, etc. are different companies that make comparable products, and are part of the same industry because they make the products in a similar way.

An occupation is a specific set of common tasks performed by employees for pay. The Standard Occupational Classification (SOC) system classifies occupations. It groups persons who perform similar tasks in the same occupation regardless of the industry. Example: Accountants perform a core set of tasks, but are employed in many industries including government, health care, finance, etc.

II. Findings

- For job seekers, there is a trade-off between how easy it is to find a job in their chosen field, and how much the work pays. As you page through this publication, look at the industries and occupations that grow the most, or have the greatest number of annual openings.

- With a few exceptions, the occupations listed share two common characteristics, they often:
  - Pay lower wages than other jobs and
  - Require less education or training than other jobs

- Total employment in New York State is expected to grow by 57,440 annually. However, different industries grow at very different rates. A few industries, such as manufacturing, are actually expected to shrink.

- There is a strong relationship between industry growth and occupational growth for occupations common to an industry. Health care and social assistance is the industry expected to grow the most. Three of the top five growing occupations are in health care and social service careers.

- The relationship between industry and wages is less clear. The best-paying industries include financial activities, information and professional and business services. And there are high-paying occupations in these industries. However, many medical occupations, such as surgeons, offer high pay levels. Yet the overall annual wage in the health care industry is unexceptional.

- Growth is concentrated in a few occupations. There are more than 625 distinct occupations found in the state. Of these, the top 25 growth occupations account for more than 60 percent of total growth expected by 2016. That is 360,660 of the 574,400 net job gains.

- Certain types of careers do not even make it onto our list of the top 25 growth occupations. This includes professional titles in managerial, engineering, scientific, legal and design/media careers. It also includes more blue-collar titles in farming, maintenance/repair, production, and transportation careers.
• Some good news – the growth occupations tend to have lower entry requirements for education or training. Of the top 25 occupations, 18 require only short-term or moderate-term on-the-job training. Only seven occupations require any post-secondary education, and not one requires a degree higher than a bachelor’s.

• The bad news – the occupations that require the most education and training pay the best. The 12 occupations on the list that only require short-term on-the-job training are also the lowest paying. Their average median wage is only $22,893.

• Replacement needs generate the majority of openings for most occupations. The three occupations with the most annual openings are retail salespersons, cashiers, and waiters and waitresses. These all serve as entry-level jobs. Few people choose them as permanent careers, and the many who do move on must be replaced. This need for replacement creates many more job openings than growth does.

• Even occupations not expected to grow may still have a large number of total openings if the replacement needs are great. Typically, this happens only when an occupation is very widespread, like cashiers.

• The fastest growing occupations are usually smaller occupations. They will not have the most openings, or even the most growth. They usually pay more, but require more education or training, than other occupations.

Conclusion:
When considering a career, weigh the pros and cons:

There will be many openings in the lower-paying jobs that are easy to learn.

But the best-paying jobs require the most education, training or work experience, and have the fewest openings.
III. Industry Trends Influencing Occupational Growth to 2016

Between 2006 and 2016, total employment in New York State is expected to grow by 0.6 percent a year. We expect average annual job gains of 57,440 during the period. (See Table 1 on the next page.) By 2016, employment in New York State is expected to reach 9,892,040, an all-time high.

Almost all of the increase will be in the nonagricultural sectors of the economy, both public and private. These are forecast to grow from:
- 8,675,240 in 2006 to
- 9,232,100 in 2016

That would offer a gain of 56,860 jobs annually (+0.6 percent.)

Goods-Producing vs. Service-Providing

This 0.6 percent growth rate, however, hides major differences between the goods-producing and the service-providing sectors of New York State’s economy.

The annual growth rate in goods-producing industries was forecast at -0.6 percent, or a loss of -5,360 jobs. Among goods-producing industries, manufacturing is expected to suffer the largest net and percentage annual decrease. It will fall 2.2 percent, with a loss of 11,770 jobs. This is the largest decrease among all private sector industries. Losses in manufacturing are forecast to be split almost evenly between nondurable goods (-5,820, or -2.4 percent) and durable goods (-5,950, or -1.9 percent).

Service-providing industries, on the other hand, are expected to grow by 0.8 percent, or 61,040 jobs, each year. The biggest annual gain, 29,320 jobs, or 1.3 percent, is projected for educational and health services, with growth concentrated in health care and social assistance (+21,400 jobs.) The aging health care needs of an population is a primary cause for the increase -- in particular those of the baby boom generation (those born between 1946 and 1964.)

Health Care and Social Assistance

There is a clear effect of an aging population on New York’s labor market. It shows up in the trend of strong job growth in the state’s health care and social assistance sector. Between 1990 and 2009, private sector health care and social assistance employment in the Empire State grew 56 percent. At the same time, overall private sector jobs only increased by 6 percent. Over this period, the share of private sector employment in health care and social assistance grew from 13 percent to 18 percent.

This trend is expected to continue. The leading edge of the baby boom generation will turn 65 in 2011. According to Cornell University’s Program on Applied Demographics there are sharp contrasts between age groups during the decade that ends in 2015. The number of people age:
- 65 or older in New York State is expected to grow by over 325,000, or 13.2 percent
- 15 to 64 is expected to grow by only 315,000, or 2.4 percent

With the number of people 65 or older increasing rapidly, demand for health care will grow more quickly than the overall economy. In New York State, many of the occupations projected to grow most rapidly between 2006 and 2016 are health care-related.
There is a clear effect of an aging population on New York's labor market. It shows up in the trend of strong job growth in the state's health care and social assistance sector. Between 1990 and 2009, private sector health care and social assistance employment in the Empire State grew 56 percent. At the same time, overall private sector jobs only increased by 6 percent. Over this period, the share of private sector employment in health care and social assistance grew from 13 percent to 18 percent.

This trend is expected to continue. The leading edge of the baby boom generation will turn 65 in 2011. According to Cornell University's Program on Applied Demographics there are sharp contrasts between age groups during the decade that ends in 2015. The number of people age 65 or older in New York State is expected to grow by over 325,000, or 13.2 percent. The number of people 15 to 64 is expected to grow by only 315,000, or 2.4 percent. With the number of people 65 or older increasing rapidly, demand for health care will grow more quickly than the overall economy. In New York State, many of the occupations projected to grow most rapidly between 2006 and 2016 are health care-related.

Professional and Business Services

The next largest gains are expected in professional and business services, with 18,110 new jobs or 1.5 percent annually. This is a result of technological innovation and increasing product specialization. All three sub-sectors in this sector expect strong annual growth. They project:

- Professional, scientific and technical services at 1.8 percent
- Administrative and waste services at 1.5 percent
- Management of companies and enterprises at 1.0 percent.

Manufacturing

The largest employment losses are projected to occur in manufacturing, where a long-term decline continues. The sector is shedding jobs at a faster rate than the nation, with employment being:

- shifted out of the state or the country or
- curtailed due to increased productivity

Double-digit declining rates are forecasted across almost every manufacturing sub-industry.
<table>
<thead>
<tr>
<th>Industry Title</th>
<th>2006</th>
<th>2016</th>
<th>Net</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>9,317,660</td>
<td>9,892,040</td>
<td>57,440</td>
<td>0.6%</td>
</tr>
<tr>
<td>Nonagricultural Wage &amp; Salary</td>
<td>8,675,240</td>
<td>9,232,100</td>
<td>55,690</td>
<td>0.6%</td>
</tr>
<tr>
<td>Goods Producing (excluding agriculture)</td>
<td>909,680</td>
<td>856,130</td>
<td>-5,360</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Mining</td>
<td>5,280</td>
<td>5,440</td>
<td>20</td>
<td>0.3%</td>
</tr>
<tr>
<td>Construction</td>
<td>336,500</td>
<td>400,460</td>
<td>6,400</td>
<td>1.8%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>567,900</td>
<td>450,230</td>
<td>-11,770</td>
<td>-2.2%</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>320,870</td>
<td>261,360</td>
<td>-5,950</td>
<td>-1.9%</td>
</tr>
<tr>
<td>Nondurable Goods</td>
<td>247,030</td>
<td>188,870</td>
<td>-5,820</td>
<td>-2.4%</td>
</tr>
<tr>
<td>Service Providing</td>
<td>7,765,560</td>
<td>8,375,970</td>
<td>61,040</td>
<td>0.8%</td>
</tr>
<tr>
<td>Trade, Transportation &amp; Utilities</td>
<td>1,578,380</td>
<td>1,587,640</td>
<td>930</td>
<td>0.1%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>353,700</td>
<td>341,180</td>
<td>-1,250</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>880,890</td>
<td>902,580</td>
<td>2,170</td>
<td>0.2%</td>
</tr>
<tr>
<td>Transportation &amp; Warehousing</td>
<td>304,690</td>
<td>306,910</td>
<td>220</td>
<td>0.1%</td>
</tr>
<tr>
<td>Utilities</td>
<td>39,100</td>
<td>36,970</td>
<td>-210</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Information</td>
<td>269,910</td>
<td>263,850</td>
<td>-610</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>726,100</td>
<td>764,040</td>
<td>3,790</td>
<td>0.5%</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td>539,450</td>
<td>561,720</td>
<td>2,230</td>
<td>0.4%</td>
</tr>
<tr>
<td>Real Estate &amp; Rental &amp; Leasing</td>
<td>184,300</td>
<td>200,250</td>
<td>1,600</td>
<td>0.9%</td>
</tr>
<tr>
<td>Professional &amp; Business Services</td>
<td>1,108,500</td>
<td>1,289,570</td>
<td>18,110</td>
<td>1.5%</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Technical Services</td>
<td>555,290</td>
<td>660,930</td>
<td>10,640</td>
<td>1.8%</td>
</tr>
<tr>
<td>Management of Companies &amp; Enterprises</td>
<td>127,800</td>
<td>141,320</td>
<td>1,520</td>
<td>1.0%</td>
</tr>
<tr>
<td>Administrative &amp; Waste Services</td>
<td>425,410</td>
<td>487,320</td>
<td>6,190</td>
<td>1.5%</td>
</tr>
<tr>
<td>Educational &amp; Health Services (private &amp; public)</td>
<td>2,231,550</td>
<td>2,524,760</td>
<td>29,210</td>
<td>1.3%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>956,150</td>
<td>1,035,360</td>
<td>7,920</td>
<td>0.8%</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>1,275,400</td>
<td>1,489,400</td>
<td>21,400</td>
<td>1.6%</td>
</tr>
<tr>
<td>Leisure &amp; Hospitality</td>
<td>677,900</td>
<td>746,740</td>
<td>6,840</td>
<td>1.0%</td>
</tr>
<tr>
<td>Arts, Entertainment &amp; Recreation</td>
<td>132,800</td>
<td>158,300</td>
<td>2,500</td>
<td>1.9%</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>546,100</td>
<td>588,440</td>
<td>4,340</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other Services</td>
<td>414,840</td>
<td>445,860</td>
<td>3,100</td>
<td>0.7%</td>
</tr>
<tr>
<td>Government (excluding public education &amp; public health care)</td>
<td>758,380</td>
<td>753,510</td>
<td>-490</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Self Employed &amp; Unpaid Family Workers</td>
<td>575,270</td>
<td>594,370</td>
<td>1,910</td>
<td>0.3%</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing &amp; Hunting</td>
<td>67,150</td>
<td>65,570</td>
<td>-160</td>
<td>-0.2%</td>
</tr>
</tbody>
</table>
Employment information – by place of work – is based on quarterly reports from employers covered under New York State’s Unemployment Insurance Law. Data by industry (using the North American Industry Classification System) include:
- Employment
- Total annual and average weekly wages and
- Number of establishments.

We offer data for New York State, metropolitan areas, and counties. (State law prohibits us from disclosing information that would reveal the identity of individual employers.) It takes about six months to collect the data and publish.

**Goods-Producing vs. Service-Providing**

The 2008 average employment and annual wages by industry appear in Table 2 (on the next page.) Goods-producing industries pay a lower average wage compared to service-providing industries ($57,192 compared to $62,902). However, service-providing industries’ wages vary much more.

The average wage among goods-producing industries (excluding agriculture, forestry, fishing and hunting) ranged from:
- $57,240 in non-durable goods manufacturing to
- $60,257 in durable goods manufacturing

The average wage among service-providing industries, however, ranged from:
- A low of $21,675 in accommodation and food services to
- A high of $207,304 in finance and insurance

The average wage in government was $51,283.

### IV. New York State Industry Employment and Wages in 2008

**Best Paying Industries**

Among major industries, average annual wages in 2008 were highest in:
- Financial activities ($167,931)
- Information ($88,251) and
- Professional and business services ($75,276).
<table>
<thead>
<tr>
<th>Industry Title</th>
<th>Reporting Units</th>
<th>Average Employment</th>
<th>Total Wages</th>
<th>Average Wages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total, All Industries</strong></td>
<td>579,296</td>
<td>8,607,715</td>
<td>$518,865,957,832</td>
<td>$60,279</td>
</tr>
<tr>
<td><strong>Total, All Private</strong></td>
<td>569,157</td>
<td>7,162,593</td>
<td>$444,755,294,723</td>
<td>$62,094</td>
</tr>
<tr>
<td><strong>Goods Producing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing &amp; Hunting</td>
<td>2,380</td>
<td>22,459</td>
<td>$625,942,056</td>
<td>$27,870</td>
</tr>
<tr>
<td>Mining</td>
<td>390</td>
<td>5,549</td>
<td>$334,367,168</td>
<td>$60,257</td>
</tr>
<tr>
<td>Construction</td>
<td>51,375</td>
<td>359,978</td>
<td>$21,203,317,209</td>
<td>$58,902</td>
</tr>
<tr>
<td><strong>Manufacturing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable Goods</td>
<td>19,852</td>
<td>532,246</td>
<td>$30,465,901,846</td>
<td>$57,240</td>
</tr>
<tr>
<td>Nondurable Goods</td>
<td>10,345</td>
<td>308,301</td>
<td>$18,887,807,691</td>
<td>$61,264</td>
</tr>
<tr>
<td><strong>Service Providing</strong></td>
<td>478,546</td>
<td>6,222,151</td>
<td>$391,385,849,804</td>
<td>$62,902</td>
</tr>
<tr>
<td><strong>Trade, Transportation &amp; Utilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>39,024</td>
<td>351,799</td>
<td>$24,373,870,822</td>
<td>$69,284</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>74,627</td>
<td>895,589</td>
<td>$26,391,891,167</td>
<td>$29,469</td>
</tr>
<tr>
<td>Transportation &amp; Warehousing</td>
<td>12,088</td>
<td>231,312</td>
<td>$9,907,878,518</td>
<td>$42,383</td>
</tr>
<tr>
<td>Utilities</td>
<td>438</td>
<td>38,776</td>
<td>$3,644,497,193</td>
<td>$93,988</td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>11,679</td>
<td>262,011</td>
<td>$23,122,653,147</td>
<td>$88,251</td>
</tr>
<tr>
<td><strong>Finance &amp; Rental &amp; Leasing</strong></td>
<td>65,363</td>
<td>720,926</td>
<td>$121,066,167,278</td>
<td>$167,931</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td>30,670</td>
<td>534,720</td>
<td>$110,849,737,998</td>
<td>$207,304</td>
</tr>
<tr>
<td>Real Estate &amp; Rental &amp; Leasing</td>
<td>34,693</td>
<td>186,206</td>
<td>$10,216,429,280</td>
<td>$54,866</td>
</tr>
<tr>
<td><strong>Professional &amp; Business Services</strong></td>
<td>97,624</td>
<td>1,155,060</td>
<td>$86,947,863,368</td>
<td>$75,276</td>
</tr>
<tr>
<td>Professional &amp; Technical Services</td>
<td>65,364</td>
<td>586,913</td>
<td>$51,674,659,092</td>
<td>$88,045</td>
</tr>
<tr>
<td>Management of Companies &amp; Enterprises</td>
<td>3,519</td>
<td>131,509</td>
<td>$17,506,406,182</td>
<td>$133,119</td>
</tr>
<tr>
<td>Administrative &amp; Waste Services</td>
<td>28,741</td>
<td>436,638</td>
<td>$17,766,798,094</td>
<td>$40,690</td>
</tr>
<tr>
<td><strong>Educational &amp; Health Services (private)</strong></td>
<td>59,809</td>
<td>1,523,674</td>
<td>$66,134,165,963</td>
<td>$43,404</td>
</tr>
<tr>
<td>Educational Services</td>
<td>7,304</td>
<td>287,123</td>
<td>$13,079,727,590</td>
<td>$45,554</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>52,505</td>
<td>1,236,551</td>
<td>$53,054,438,373</td>
<td>$42,902</td>
</tr>
<tr>
<td><strong>Leisure &amp; Hospitality</strong></td>
<td>52,795</td>
<td>715,255</td>
<td>$18,863,861,366</td>
<td>$26,374</td>
</tr>
<tr>
<td>Arts, Entertainment, &amp; Recreation</td>
<td>11,319</td>
<td>142,985</td>
<td>$6,459,740,559</td>
<td>$45,178</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>41,476</td>
<td>572,270</td>
<td>$12,404,120,807</td>
<td>$21,675</td>
</tr>
<tr>
<td><strong>Other Services</strong></td>
<td>65,099</td>
<td>327,749</td>
<td>$10,933,000,982</td>
<td>$33,358</td>
</tr>
<tr>
<td>Unclassified</td>
<td>16,618</td>
<td>20,207</td>
<td>$739,866,360</td>
<td>$36,615</td>
</tr>
<tr>
<td><strong>Total, All Government</strong></td>
<td>10,139</td>
<td>1,445,122</td>
<td>$74,110,663,109</td>
<td>$51,283</td>
</tr>
</tbody>
</table>
V. Making Sense of Occupational Projections for New York State

We evaluate occupational projections for New York from multiple perspectives:
- Number of job openings
- Amount of wages
- Education and training requirements

Openings get the most attention, as there must be a job to fill before either the pay or the effort needed to achieve a job comes into play.

Number of Openings
You can review employment prospects by:
- Examining the likelihood of new jobs or growth and
- Considering total openings, which includes both growth and replacement

Total openings, as defined here, does not include the job openings that result when people move from job to job or firm to firm without a change of occupation.

Find the top 25 occupations with the:
- Greatest growth in Table 3
- Most openings in Table 4

Wages
People often think high-paying occupations offer good careers. The median, entry and experienced wages for each occupation appear in the tables.

If you combine the wages with the career projections and the minimum education and training requirements, it gives you a more complete picture of an occupation.

Minimum Education and Training Requirements
Most careers have a minimum education or training requirement that apply to anyone who enters that field. This effort can range from brief on-the-job training to the years required for a professional degree.

Part of the analysis will focus on differences in occupational outlook between careers that require post-secondary training and those that do not.

These perspectives -- openings, wages and education -- are criteria used to evaluate occupations. People who can use these data to make informed decisions include:
- Policy makers
- Employers
- Job seekers
- Career changers
- Others

To learn more about the relationship between wages and education, see page 13.
A. Top 25 Occupations with the Greatest Growth in Number of Jobs

The 25 occupations forecast to grow the most between 2006 and 2016 appear in Table 3-A on page 12. Three factors determine which careers can expect to experience major growth between 2006 and 2016:

- Industry projections
- Base employment
- Occupational relevance

1. Industry Projections as a Factor in Occupational Projections

Much of the growth we can expect for an occupation depends a good deal on whether this career occurs primarily in growing industries or in shrinking industries.

In technical terms, for occupations common to an industry, the projected change in total industrial employment reported in Table 1 correlates strongly and positively with those occupational employment projections. That means an occupation that occurs only in a particular industry will change on a par with that industry.

Likewise, the industry in New York State with the greatest expected growth - health care and social assistance – has ties to many careers ranked high on the list of growing occupations.

Three of the top five occupations on the list of New York State's top 25 growth occupations are health care and social service careers:

- Home health aides
- Personal and home care aides
- Registered nurses

Home health aides are projected to have the greatest net growth: 5,230 jobs annually, or 52,320 over the 10-year period. The majority of job openings will be brand new jobs; over 80 percent of the total openings for home health care aides will come from growth (jobs from growth). Among careers on the list of high growth occupations, home health aides have the third highest rate of growth (+37.8 percent.)

2. Base Employment as a Factor in Occupational Projections

Change in industry employment is not the only factor that drives an occupation's growth. If there is a large base of jobs in a specific occupation, even a moderate rate of growth will lead to a large number of openings. Occupations that illustrate this include:

- Retail salespersons
- Office clerks
- Teacher assistants
- Others

Retail salesperson is the most common occupation in New York State. It ranks second in net growth, despite a projected growth rate that is among the lowest of the top 25 growth occupations (19th). Starting from an employment base of more than 280,000, the expected change for this career over a 10-year period is 28,170, or 2,820 annually.

3. Occupational Relevance as a Factor in Occupational Projections

The third reason for a career to make the top 25 list involves the occupation itself. Over time, some careers become less common or vanish entirely; others grow more than the average. Advances in technology can reduce the need for some occupations.

The recent shift towards digital cameras, for instance, has greatly reduced the number of people needed to make, sell and develop photographic film. ATMs have cut the need for bank tellers even as the number of bank branches continues to grow.

This phenomenon is not new; telephone operators, chimney sweeps and blacksmiths are all occupations whose time has passed.

In the same vein, new and previously unimagined occupations continually appear, while other careers become more common. Many computer titles did not exist several decades ago. Today, information technology and its practitioners occur in every industry.
Even in contracting industries, such as manufacturing, these occupations enjoy an increased presence. As we might expect, the top 25 growth occupations include three computer titles:
- computer software engineers and applications
- network systems and data communications analysts
- computer systems analysts

A Combination of Factors
Customer service representative owes its fifth place ranking on the list of growth occupations to a combination of the below factors.
- Financial firms, which are predicted to see moderate growth between 2006 and 2016, have more than one-third of customer service representatives.
- In terms of employment, the occupation is one of the 10 largest in New York State.
- Its share of total employment has increased over the last few years as more and more companies make customer service a priority.

Put these three factors together, and the number of customer service representatives is expected to increase by 19,040, or 14 percent, between 2006 and 2016. Like customer service representatives, the majority of the careers on the list of growth occupations are there for more than one reason.
### Table 3-A: Top 25 Occupations with Greatest Projected Growth

#### New York State Employment Change/Annual Openings to 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Employment Change</th>
<th>Annual Average Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2006</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>Home Health Aides</td>
<td>138,290</td>
<td>190,610</td>
</tr>
<tr>
<td>2</td>
<td>Retail Salespersons</td>
<td>280,650</td>
<td>308,820</td>
</tr>
<tr>
<td>3</td>
<td>Personal &amp; Home Care Aides</td>
<td>74,680</td>
<td>100,790</td>
</tr>
<tr>
<td>4</td>
<td>Registered Nurses</td>
<td>169,400</td>
<td>193,520</td>
</tr>
<tr>
<td>5</td>
<td>Customer Service Representatives</td>
<td>136,160</td>
<td>155,200</td>
</tr>
<tr>
<td>6</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>190,410</td>
<td>206,630</td>
</tr>
<tr>
<td>7</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>147,060</td>
<td>161,530</td>
</tr>
<tr>
<td>8</td>
<td>Accountants &amp; Auditors</td>
<td>106,960</td>
<td>120,470</td>
</tr>
<tr>
<td>9</td>
<td>Computer Software Engineers, Applications</td>
<td>32,250</td>
<td>44,490</td>
</tr>
<tr>
<td>10</td>
<td>Nursing Aides, Orderlies &amp; Attendants</td>
<td>104,210</td>
<td>116,310</td>
</tr>
<tr>
<td>11</td>
<td>Child Care Workers</td>
<td>119,200</td>
<td>131,300</td>
</tr>
<tr>
<td>12</td>
<td>Office Clerks, General</td>
<td>206,100</td>
<td>217,840</td>
</tr>
<tr>
<td>13</td>
<td>Waiters &amp; Waitresses</td>
<td>130,830</td>
<td>142,220</td>
</tr>
<tr>
<td>14</td>
<td>Security Guards</td>
<td>100,550</td>
<td>111,250</td>
</tr>
<tr>
<td>15</td>
<td>Receptionists &amp; Information Clerks</td>
<td>87,120</td>
<td>97,820</td>
</tr>
<tr>
<td>16</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>142,830</td>
<td>153,440</td>
</tr>
<tr>
<td>17</td>
<td>Carpenters</td>
<td>69,260</td>
<td>79,810</td>
</tr>
<tr>
<td>18</td>
<td>Elementary School Teachers, except Special Ed.</td>
<td>97,210</td>
<td>107,600</td>
</tr>
<tr>
<td>19</td>
<td>Food Preparation Workers</td>
<td>88,540</td>
<td>98,810</td>
</tr>
<tr>
<td>20</td>
<td>Combined Food Preparation &amp; Serving Workers</td>
<td>73,580</td>
<td>81,580</td>
</tr>
<tr>
<td>21</td>
<td>Construction Laborers</td>
<td>54,770</td>
<td>62,540</td>
</tr>
<tr>
<td>22</td>
<td>Teacher Assistants</td>
<td>129,910</td>
<td>137,510</td>
</tr>
<tr>
<td>23</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td>17,100</td>
<td>24,270</td>
</tr>
<tr>
<td>24</td>
<td>Computer Systems Analysts</td>
<td>30,520</td>
<td>37,260</td>
</tr>
<tr>
<td>25</td>
<td>Social &amp; Human Service Assistants</td>
<td>33,540</td>
<td>40,170</td>
</tr>
</tbody>
</table>
**Table 3-B: Top 25 Occupations with Greatest Projected Growth**

**New York State Education/Training Requirements and Wages**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Typical Education and Training Requirements</th>
<th>Annual Wages ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Median</td>
</tr>
<tr>
<td>1</td>
<td>Home Health Aides</td>
<td>Short-term on-the-job training</td>
<td>$21,570</td>
</tr>
<tr>
<td>2</td>
<td>Retail Salespersons</td>
<td>Short-term on-the-job training</td>
<td>$21,500</td>
</tr>
<tr>
<td>3</td>
<td>Personal &amp; Home Care Aides</td>
<td>Short-term on-the-job training</td>
<td>$22,320</td>
</tr>
<tr>
<td>4</td>
<td>Registered Nurses</td>
<td>Associate degree</td>
<td>$69,690</td>
</tr>
<tr>
<td>5</td>
<td>Customer Service Representatives</td>
<td>Moderate-term on-the-job training</td>
<td>$31,800</td>
</tr>
<tr>
<td>6</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>Short-term on-the-job training</td>
<td>$25,170</td>
</tr>
<tr>
<td>7</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$46,010</td>
</tr>
<tr>
<td>8</td>
<td>Accountants &amp; Auditors</td>
<td>Bachelor's degree</td>
<td>$69,900</td>
</tr>
<tr>
<td>9</td>
<td>Computer Software Engineers, Applications</td>
<td>Bachelor's degree</td>
<td>$89,330</td>
</tr>
<tr>
<td>10</td>
<td>Nursing Aides, Orderlies &amp; Attendants</td>
<td>Postsecondary vocational training</td>
<td>$30,850</td>
</tr>
<tr>
<td>11</td>
<td>Child Care Workers</td>
<td>Short-term on-the-job training</td>
<td>$23,070</td>
</tr>
<tr>
<td>12</td>
<td>Office Clerks, General</td>
<td>Short-term on-the-job training</td>
<td>$26,280</td>
</tr>
<tr>
<td>13</td>
<td>Waiters &amp; Waitresses</td>
<td>Short-term on-the-job training</td>
<td>$22,110</td>
</tr>
<tr>
<td>14</td>
<td>Security Guards</td>
<td>Short-term on-the-job training</td>
<td>$25,360</td>
</tr>
<tr>
<td>15</td>
<td>Receptionists &amp; Information Clerks</td>
<td>Short-term on-the-job training</td>
<td>$27,230</td>
</tr>
<tr>
<td>16</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>Moderate-term on-the-job training</td>
<td>$35,540</td>
</tr>
<tr>
<td>17</td>
<td>Carpenters</td>
<td>Long-term on-the-job training</td>
<td>$47,350</td>
</tr>
<tr>
<td>18</td>
<td>Elementary School Teachers, except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$61,870</td>
</tr>
<tr>
<td>19</td>
<td>Food Preparation Workers</td>
<td>Short-term on-the-job training</td>
<td>$19,870</td>
</tr>
<tr>
<td>20</td>
<td>Combined Food Preparation &amp; Serving Workers</td>
<td>Short-term on-the-job training</td>
<td>$16,250</td>
</tr>
<tr>
<td>21</td>
<td>Construction Laborers</td>
<td>Moderate-term on-the-job training</td>
<td>$42,690</td>
</tr>
<tr>
<td>22</td>
<td>Teacher Assistants</td>
<td>Short-term on-the-job training</td>
<td>$23,990</td>
</tr>
<tr>
<td>23</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td>Bachelor's degree</td>
<td>$77,050</td>
</tr>
<tr>
<td>24</td>
<td>Computer Systems Analysts</td>
<td>Bachelor's degree</td>
<td>$83,060</td>
</tr>
<tr>
<td>25</td>
<td>Social &amp; Human Service Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$28,030</td>
</tr>
</tbody>
</table>
What Kind of Occupations are Growing?

Certain types of jobs show up on the list more than others. Of the 25 top growth occupations:
- Five are office and administrative support
- Three are computer and mathematical
- Three are food preparation and serving related

Nine occupational groups have no representation on the top 25 list, including professional titles in managerial, engineering, scientific, legal and design/media careers, as well as more blue-collar titles in farming, maintenance/repair, production and transportation careers.

Job Growth is Primarily Concentrated Among a Small Group of Occupations

It’s hard to overstate the total employment impact of the top 25 growth occupations. Of the 625 distinct careers found in New York State, the top 25 growth occupations account for more than 60 percent of total growth. That means they hold 360,660 of the 574,400 net job gains (62.8 percent) expected between 2006 and 2016. Nineteen occupations are projected to have 1,000 or more job openings annually.

For five occupations, new jobs from growth will be responsible for over two-thirds of total openings (See sidebar: Growth and Replacement.) These professions are expected to grow by 10,440 annually:
- Home health aides
- Computer software engineers, applications
- Personal and home care aides
- Network systems and data communications analysts and
- Social and human service assistants

Education and Training Requirements / Wages

The minimum education/experience requirements to enter one of the top 25 growth careers usually are not a high hurdle to overcome. (See Table 3-B, page 10.) Eighteen of the top 25 occupations with the greatest growth require only short-term or moderate-term on-the-job training. Only seven occupations require post-secondary education and none require a degree higher than a bachelor’s.

Unfortunately, jobs with lower minimal education requirements also tend to pay lower than careers that require higher education credentials. Of the top 25 occupations with the greatest net growth, the top four highest paying careers require a bachelor’s degree and pay a median wage of $79,835:
- Computer software engineers
- Computer system analysts
- Network system and data communications analysts
- Accountants and auditors

The 12 growth occupations that require short-term on-the-job training, however, are also the lowest paying of the top 25 growth occupations. Their average median wage is $22,893.
B. Top 25 Occupations with the Most Openings to 2016

In the last section we discussed the role growth plays in interpreting projections. But not all openings are due to growth. In fact, more job openings overall are due to replacement needs. While there are occupations where the bulk of openings come from growth, for most careers the majority of jobs come from replacement. Thus, total job openings are usually the result of a mix of growth and replacement.

Contributors to Total Openings: Growth and Replacement

Not surprisingly, many careers that show strong growth in the number of jobs also place high on the list of top 25 occupations with the most openings. (See Table 4-A, page 16.) Seventeen occupations appear on both lists, including the career projected to have the largest number of total openings: retail salespersons.

For 12 occupations on the list, replacement needs will generate 75 - 100 percent of expected total openings. Employment for the number two occupation, cashiers, actually is expected to decline by 7,590, or 3.7 percent, over the forecast period. This means replacements will provide all of the 9,860 annual openings.

Growth and Replacement

Growth Openings: Where occupational employment increases, it generates new job openings that did not exist previously. These openings are growth openings. Occupations where employment is projected to shrink will have zero growth openings.

Replacement Openings: Every occupation experiences turnover. However, not all turnovers create a replacement opening. When a worker leaves one occupation for another, a replacement is needed. If an employee leaves a job, only to get a new job in the same occupation, no replacement opening is created.

For example, a waiter who upon finishing college takes a job as an accountant leaves the labor market with one less waiter. That waiter would need to be replaced. However, when an accountant switches from one accounting firm to another, the total number of accountants is unchanged. They have simply shifted around. Unlike growth, replacement can occur in both growing and declining occupations.

Total Openings: The sum of growth and replacement openings for an occupation. Furthermore, total openings do not capture every job opportunity expected, as neither total nor replacement openings reflect the commonplace job switching seen in occupations with high turnover.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Employment Change/Annual Openings</th>
<th>New York State Employment Change/Annual Openings to 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2006</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>Retail Salespersons</td>
<td>280,650</td>
<td>308,820</td>
</tr>
<tr>
<td>2</td>
<td>Cashiers</td>
<td>207,260</td>
<td>199,670</td>
</tr>
<tr>
<td>3</td>
<td>Waiters &amp; Waitresses</td>
<td>130,830</td>
<td>142,220</td>
</tr>
<tr>
<td>4</td>
<td>Home Health Aides</td>
<td>138,290</td>
<td>190,610</td>
</tr>
<tr>
<td>5</td>
<td>Customer Service Representatives</td>
<td>136,160</td>
<td>155,200</td>
</tr>
<tr>
<td>6</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>190,410</td>
<td>206,630</td>
</tr>
<tr>
<td>7</td>
<td>Registered Nurses</td>
<td>169,400</td>
<td>193,520</td>
</tr>
<tr>
<td>8</td>
<td>Office Clerks, General</td>
<td>206,100</td>
<td>217,840</td>
</tr>
<tr>
<td>9</td>
<td>Child Care Workers</td>
<td>119,200</td>
<td>131,300</td>
</tr>
<tr>
<td>10</td>
<td>Food Preparation Workers</td>
<td>88,540</td>
<td>98,810</td>
</tr>
<tr>
<td>11</td>
<td>Personal &amp; Home Care Aides</td>
<td>74,680</td>
<td>100,790</td>
</tr>
<tr>
<td>12</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>147,060</td>
<td>161,530</td>
</tr>
<tr>
<td>13</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>142,830</td>
<td>153,440</td>
</tr>
<tr>
<td>14</td>
<td>Accountants &amp; Auditors</td>
<td>106,960</td>
<td>120,470</td>
</tr>
<tr>
<td>15</td>
<td>Receptionists &amp; Information Clerks</td>
<td>87,120</td>
<td>97,820</td>
</tr>
<tr>
<td>16</td>
<td>Elementary School Teachers, except Special Ed.</td>
<td>97,210</td>
<td>107,600</td>
</tr>
<tr>
<td>17</td>
<td>Security Guards</td>
<td>100,550</td>
<td>111,250</td>
</tr>
<tr>
<td>18</td>
<td>Laborers &amp; Freight, Stock &amp; Material Movers, Hand</td>
<td>96,430</td>
<td>90,370</td>
</tr>
<tr>
<td>19</td>
<td>Teacher Assistants</td>
<td>129,910</td>
<td>137,510</td>
</tr>
<tr>
<td>20</td>
<td>Counter Attendants, Cafeteria &amp; Concession</td>
<td>37,370</td>
<td>40,240</td>
</tr>
<tr>
<td>21</td>
<td>Secretaries, except Legal, Medical, &amp; Executive</td>
<td>178,180</td>
<td>174,690</td>
</tr>
<tr>
<td>22</td>
<td>Secondary School Teachers, except Special Ed.</td>
<td>81,770</td>
<td>84,270</td>
</tr>
<tr>
<td>23</td>
<td>Sales Reps, Wholesale/Manufacturing, except Tech.</td>
<td>119,850</td>
<td>120,090</td>
</tr>
<tr>
<td>24</td>
<td>Stock Clerks &amp; Order Fillers</td>
<td>104,850</td>
<td>92,350</td>
</tr>
<tr>
<td>25</td>
<td>General &amp; Operations Managers</td>
<td>95,880</td>
<td>92,440</td>
</tr>
<tr>
<td>Rank</td>
<td>Occupational Title</td>
<td>Typical Education and Training Requirements</td>
<td>Annual Wages ($)</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Median</td>
</tr>
<tr>
<td>1</td>
<td>Retail Salespersons</td>
<td>Short-term on-the-job training</td>
<td>$21,500</td>
</tr>
<tr>
<td>2</td>
<td>Cashiers</td>
<td>Short-term on-the-job training</td>
<td>$17,500</td>
</tr>
<tr>
<td>3</td>
<td>Waiters &amp; Waitresses</td>
<td>Short-term on-the-job training</td>
<td>$22,110</td>
</tr>
<tr>
<td>4</td>
<td>Home Health Aides</td>
<td>Short-term on-the-job training</td>
<td>$21,570</td>
</tr>
<tr>
<td>5</td>
<td>Customer Service Representatives</td>
<td>Moderate-term on-the-job training</td>
<td>$31,800</td>
</tr>
<tr>
<td>6</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>Short-term on-the-job training</td>
<td>$25,170</td>
</tr>
<tr>
<td>7</td>
<td>Registered Nurses, except Maids &amp; Housekeepers</td>
<td>Associate degree</td>
<td>$69,690</td>
</tr>
<tr>
<td>8</td>
<td>Office Clerks, General</td>
<td>Short-term on-the-job training</td>
<td>$26,280</td>
</tr>
<tr>
<td>9</td>
<td>Child Care Workers</td>
<td>Short-term on-the-job training</td>
<td>$23,070</td>
</tr>
<tr>
<td>10</td>
<td>Food Preparation Workers</td>
<td>Short-term on-the-job training</td>
<td>$19,870</td>
</tr>
<tr>
<td>11</td>
<td>Personal &amp; Home Care Aides</td>
<td>Short-term on-the-job training</td>
<td>$22,320</td>
</tr>
<tr>
<td>12</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$46,010</td>
</tr>
<tr>
<td>13</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>Moderate-term on-the-job training</td>
<td>$35,540</td>
</tr>
<tr>
<td>14</td>
<td>Accountants &amp; Auditors</td>
<td>Bachelor's degree</td>
<td>$69,900</td>
</tr>
<tr>
<td>15</td>
<td>Receptionists &amp; Information Clerks</td>
<td>Short-term on-the-job training</td>
<td>$27,230</td>
</tr>
<tr>
<td>16</td>
<td>Elementary School Teachers, except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$61,870</td>
</tr>
<tr>
<td>17</td>
<td>Security Guards</td>
<td>Short-term on-the-job training</td>
<td>$23,900</td>
</tr>
<tr>
<td>18</td>
<td>Laborers &amp; Freight, Stock &amp; Material Movers, Hand</td>
<td>Short-term on-the-job training</td>
<td>$23,900</td>
</tr>
<tr>
<td>19</td>
<td>Teacher Assistants</td>
<td>Short-term on-the-job training</td>
<td>$17,060</td>
</tr>
<tr>
<td>20</td>
<td>Counter Attendants, Cafeteria &amp; Concession</td>
<td>Short-term on-the-job training</td>
<td>$31,800</td>
</tr>
<tr>
<td>21</td>
<td>Secretaries, except Legal, Medical, &amp; Executive</td>
<td>Moderate-term on-the-job training</td>
<td>$57,350</td>
</tr>
<tr>
<td>23</td>
<td>Sales Reps, Wholesale/Manufacturing, except Tech.</td>
<td>Moderate-term on-the-job training</td>
<td>$115,530</td>
</tr>
</tbody>
</table>
Factors in Replacement

One reason people may leave an occupation and create a vacancy is career change. People will often change careers, especially in entry-level occupations. They commonly leave the three occupations with the most annual openings:

- Retail salespersons (11,460)
- Cashiers (9,860)
- Waiters and waitresses (8,250)

Other times, career advancement creates a vacancy. The occupational codes offer separate categories for many supervisors and management occupations. Every time a machine operator moves up to foreman, or an accountant becomes a financial manager, they create a replacement slot for a machine operator or accountant.

When people leave the workforce, that also opens vacancies. Some go back to school, or choose to stay home with family. Others leave involuntarily, perhaps due to illness, incarceration or poor job performance. Moreover, retirements and deaths occur at every level. Elementary and secondary school teachers are two careers that face a replacement crisis. Teachers are expected to retire in large numbers over the next few years. Both occupations appear in Table 4.

For five occupations on the list, replacement needs will create all the openings:

- Cashiers
- Laborers and freight, stock and material movers (by hand)
- Secretaries (except legal, medical and executive)
- Stock clerks and order-fillers
- General and operations managers

These are declining or shrinking occupations. Yet, an additional 205,900 people are expected to vacate these five occupations and require replacement. Thus, the forecast calls for 20,590 total annual openings in these shrinking careers.

Types of Occupations That Have Many Openings

The top two jobs (retail salespersons and cashiers) are sales occupations. But, the office and administrative occupational group has the greatest number (seven) of occupations appearing on the list of 25 occupations with the most openings. Also making the list are three occupations from these groups:

- Education, training and library
- Food preparation and serving

The remaining occupational groups are represented by only one or two careers at most.

Education and Training Requirements / Wages

Again, the minimum education/experience requirements for most of these 25 occupations will not slow many job seekers. (See Table 4-B, page 17.) Fifteen require only short-term on-the-job training and five require only moderate-term on-the-job training. Only five occupations require post-secondary education and none require a degree higher than a bachelor’s.

As before, the five that require post-secondary education are the highest paying. They include:

- General and operations managers ($115,530)
- Accountants and auditors ($69,900)
- Registered nurses ($69,690)
- Secondary school teachers ($62,380)
- Elementary school teachers ($61,870)

Of these five occupations, registered nurses require the least schooling (an associate degree to start), yet expect more annual openings (5,210) than the other high-paying career choices.

General and operations managers, on the other hand, require additional experience on top of their education. While they have the highest annual median wage, they expect the fewest total annual openings (2,310) of all occupations on the top 25 list.

None of the occupations that require short-term on-the-job training have an annual median wage over $27,230.
VI. Education and Occupational Growth: How are they Related?

In our analysis of New York State's list of high growth occupations in Table 3, we noted that 18 of 25 careers on the list need only on-the-job training. If you look at total openings in Table 4, the scarcity of occupations requiring post-secondary education is even more pronounced. Careers that require on-the-job training outnumber those requiring additional education by four to one.

The Fastest Growing Occupations

What makes this distribution even more unusual is that many of the fastest growing occupations require post-secondary education. On the list of New York State's 25 Fastest Growing Occupations (Table 5, page 20), fourteen require post-secondary education. This is a completely different distribution than that found in Tables 3 and 4, where most occupations require minimal training.

Furthermore, the published list of fastest growing careers is restricted to occupations with employment of at least 1,000. If we lifted that restriction, we would have a dozen more fast-growing (minimum growth rate of 17.5% annually) occupations. Three-quarters of these would require post-secondary education.

Why is this Important?

As we saw when examining growth and openings, occupations requiring post-secondary education pay higher wages. We now see that these occupations are also likely to have a higher rate of growth. What they do not have is a large number of employment opportunities, compared to careers that require only on-the-job training.

Thus, choosing which career to pursue is, in part, a question of whether to:
- Train for a higher-paying occupation with fewer openings
- Enter a lower-paying occupation with a greater number of openings.

The answer will differ for each person, but you must look at each group of occupations separately to make an informed choice.

On-the-Job Training vs. Post-Secondary Schooling

For jobs that require on-the-job training, we rank growth occupations in Tables 6-A and 6-B (page 22-23). We rank those with the most openings in Tables 7-A and 7-B (page 24-25).

For jobs that require post-secondary education, we rank the 25 with the highest projected net growth in Tables 8-A and 8-B (page 26-27) and those with the greatest number of openings in Tables 9-A and 9-B (page 28-29).

Note - Most of the occupations in Tables 6 and 7 appeared previously in this report and have already been discussed. For more information on these, please look back at our analysis of Tables 3 and 4.
Table 5: Top 25 Fastest Growing Occupations
New York State Employment Change, Net and Percent to 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Employment Change</th>
<th>2006</th>
<th>2016</th>
<th>Net</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td></td>
<td>17,100</td>
<td>24,270</td>
<td>7,170</td>
<td>41.9</td>
</tr>
<tr>
<td>2</td>
<td>Computer Software Engineers, Applications</td>
<td></td>
<td>32,250</td>
<td>44,490</td>
<td>12,240</td>
<td>38.0</td>
</tr>
<tr>
<td>3</td>
<td>Home Health Aides</td>
<td></td>
<td>138,290</td>
<td>190,610</td>
<td>52,320</td>
<td>37.8</td>
</tr>
<tr>
<td>4</td>
<td>Personal &amp; Home Care Aides</td>
<td></td>
<td>74,680</td>
<td>100,790</td>
<td>26,110</td>
<td>35.0</td>
</tr>
<tr>
<td>5</td>
<td>Medical Assistants</td>
<td></td>
<td>18,060</td>
<td>23,540</td>
<td>5,480</td>
<td>30.3</td>
</tr>
<tr>
<td>6</td>
<td>Dental Hygienists</td>
<td></td>
<td>9,390</td>
<td>11,760</td>
<td>2,370</td>
<td>25.2</td>
</tr>
<tr>
<td>7</td>
<td>Dental Assistants</td>
<td></td>
<td>17,570</td>
<td>21,860</td>
<td>4,290</td>
<td>24.4</td>
</tr>
<tr>
<td>8</td>
<td>Physical Therapist Assistants</td>
<td></td>
<td>3,220</td>
<td>3,970</td>
<td>750</td>
<td>23.3</td>
</tr>
<tr>
<td>9</td>
<td>Substance Abuse &amp; Behavioral Disorder Counselors</td>
<td></td>
<td>8,960</td>
<td>10,960</td>
<td>2,000</td>
<td>22.3</td>
</tr>
<tr>
<td>10</td>
<td>Computer Systems Analysts</td>
<td></td>
<td>30,520</td>
<td>37,260</td>
<td>6,740</td>
<td>22.1</td>
</tr>
<tr>
<td>11</td>
<td>Physical Therapist Aides</td>
<td></td>
<td>2,810</td>
<td>3,410</td>
<td>600</td>
<td>21.4</td>
</tr>
<tr>
<td>12</td>
<td>Network &amp; Computer Systems Administrators</td>
<td></td>
<td>17,980</td>
<td>21,800</td>
<td>3,820</td>
<td>21.2</td>
</tr>
<tr>
<td>13</td>
<td>Helpers - Carpenters</td>
<td></td>
<td>8,090</td>
<td>9,770</td>
<td>1,680</td>
<td>20.8</td>
</tr>
<tr>
<td>14</td>
<td>Physical Therapists</td>
<td></td>
<td>12,870</td>
<td>15,490</td>
<td>2,620</td>
<td>20.4</td>
</tr>
<tr>
<td>15</td>
<td>Security &amp; Fire Alarm Systems Installers</td>
<td></td>
<td>3,690</td>
<td>4,440</td>
<td>750</td>
<td>20.3</td>
</tr>
<tr>
<td>16</td>
<td>Fitness Trainers &amp; Aerobics Instructors</td>
<td></td>
<td>16,860</td>
<td>20,230</td>
<td>3,370</td>
<td>20.0</td>
</tr>
<tr>
<td>17</td>
<td>Tile &amp; Marble Setters</td>
<td></td>
<td>3,550</td>
<td>4,260</td>
<td>710</td>
<td>20.0</td>
</tr>
<tr>
<td>18</td>
<td>Veterinary Technologists &amp; Technicians</td>
<td></td>
<td>3,260</td>
<td>3,910</td>
<td>650</td>
<td>19.9</td>
</tr>
<tr>
<td>19</td>
<td>Social and Human Service Assistants</td>
<td></td>
<td>33,540</td>
<td>40,170</td>
<td>6,630</td>
<td>19.8</td>
</tr>
<tr>
<td>20</td>
<td>Helpers - Pipelayers, Plumbers, Pipefitters, Steamfitters</td>
<td></td>
<td>3,290</td>
<td>3,940</td>
<td>650</td>
<td>19.8</td>
</tr>
<tr>
<td>21</td>
<td>Skin Care Specialists</td>
<td></td>
<td>2,470</td>
<td>2,960</td>
<td>490</td>
<td>19.8</td>
</tr>
<tr>
<td>22</td>
<td>Cement Masons &amp; Concrete Finishers</td>
<td></td>
<td>5,930</td>
<td>7,090</td>
<td>1,160</td>
<td>19.6</td>
</tr>
<tr>
<td>23</td>
<td>Database Administrators</td>
<td></td>
<td>8,760</td>
<td>10,470</td>
<td>1,710</td>
<td>19.5</td>
</tr>
<tr>
<td>24</td>
<td>Helpers - Brickmasons, Blockmasons, Stonemasons, &amp; Tile &amp; Marble Setters</td>
<td></td>
<td>1,590</td>
<td>1,900</td>
<td>310</td>
<td>19.5</td>
</tr>
<tr>
<td>25</td>
<td>Computer Software Engineers, Systems Software</td>
<td></td>
<td>18,430</td>
<td>21,950</td>
<td>3,520</td>
<td>19.1</td>
</tr>
</tbody>
</table>
Top 25 Post-Secondary Occupations to 2016

Post-Secondary Occupations - Growth

For careers that require post-secondary education, the 25 occupations with most growth are expected to have combined job gains that total 36,060 annually during the 2006 to 2016 period. (See Table 8, page 26.) In sum, this group’s employment will increase by 14 percent over the 10 years.

Ranked by net growth:
- Registered nurses are projected to have the highest net growth, with 2,410 jobs annually (total of 24,120, or 15.1 percent, over 10 years)
- Followed by accountants and auditors (1,350)
- Computer applications software engineers (1,220)
- Nursing aides and attendants (1,210)
- Elementary school teachers (1,040)

These five are the only post-secondary-education occupations expected to grow by more than 1,000 openings annually. Their total growth is almost as large as that of the next 20 careers combined.

Post-Secondary Occupations - Total Openings

Registered nurses not only have the most growth but also the largest number of total openings. (See Table 9, page 28.) Between 2006 and 2016, registered nurses can expect 5,210 openings annually from growth and replacement combined.

The next four occupations listed with a notable number of total annual openings include:
- Accountants and auditors (3,230)
- Elementary school teachers (3,160)
- Secondary school teachers (2,690)
- General and operations managers (2,310)

Seventeen occupations in Table 8-A are expected to have more than 1,000 openings every year.

Replacement needs generate the majority of openings. One occupation, general and operations managers, is not expected to grow at all. Replacement needs make up all of its openings.

Post-Secondary Occupations - Education and Wages

Eighteen of the top post-secondary occupations require a bachelor’s degree, a bachelor’s degree plus work experience, or a professional degree. (See Tables 8-B, page 27, and 9-B, page 29.) The rest require either post-secondary vocational training or an associate degree. Conspicuously absent from the lists are careers that require a doctoral or master’s degree to enter.

Among post-secondary occupations in these lists, the careers with the highest median wage all require a bachelor’s degree or higher. The occupations that require post-secondary vocational training are the lowest paying on the list. The only exception is for real estate sales agents. (At $62,320, they are 17th in wage rank among the 25 occupations in Table 9-B.)
### Table 6-A: Top 25 OJT Occupations with Greatest Projected Growth

**New York State Employment Change/Annual Openings to 2016**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Employment Change</th>
<th>Annual Average Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2006</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>Home Health Aides</td>
<td>138,290</td>
<td>190,610</td>
</tr>
<tr>
<td>2</td>
<td>Retail Salespersons</td>
<td>280,650</td>
<td>308,820</td>
</tr>
<tr>
<td>3</td>
<td>Personal &amp; Home Care Aides</td>
<td>74,680</td>
<td>100,790</td>
</tr>
<tr>
<td>4</td>
<td>Customer Service Representatives</td>
<td>136,160</td>
<td>155,200</td>
</tr>
<tr>
<td>5</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>190,410</td>
<td>206,630</td>
</tr>
<tr>
<td>6</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>147,060</td>
<td>161,530</td>
</tr>
<tr>
<td>7</td>
<td>Child Care Workers</td>
<td>119,200</td>
<td>131,300</td>
</tr>
<tr>
<td>8</td>
<td>Office Clerks, General</td>
<td>206,100</td>
<td>217,840</td>
</tr>
<tr>
<td>9</td>
<td>Waiters &amp; Waitresses</td>
<td>130,830</td>
<td>142,220</td>
</tr>
<tr>
<td>10</td>
<td>Security Guards</td>
<td>100,550</td>
<td>111,250</td>
</tr>
<tr>
<td>11</td>
<td>Receptionists &amp; Information Clerks</td>
<td>87,120</td>
<td>97,820</td>
</tr>
<tr>
<td>12</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>142,830</td>
<td>153,440</td>
</tr>
<tr>
<td>13</td>
<td>Carpenters</td>
<td>69,260</td>
<td>79,810</td>
</tr>
<tr>
<td>14</td>
<td>Food Preparation Workers</td>
<td>88,540</td>
<td>98,810</td>
</tr>
<tr>
<td>15</td>
<td>Combined Food Preparation &amp; Serving Workers</td>
<td>73,580</td>
<td>81,580</td>
</tr>
<tr>
<td>16</td>
<td>Construction Laborers</td>
<td>54,770</td>
<td>62,540</td>
</tr>
<tr>
<td>17</td>
<td>Teacher Assistants</td>
<td>129,910</td>
<td>137,510</td>
</tr>
<tr>
<td>18</td>
<td>Social &amp; Human Service Assistants</td>
<td>33,540</td>
<td>40,170</td>
</tr>
<tr>
<td>19</td>
<td>Landscaping &amp; Groundskeeping Workers</td>
<td>54,520</td>
<td>60,670</td>
</tr>
<tr>
<td>20</td>
<td>Maintenance &amp; Repair Workers, General</td>
<td>94,990</td>
<td>100,510</td>
</tr>
<tr>
<td>21</td>
<td>Electricians</td>
<td>40,000</td>
<td>45,520</td>
</tr>
<tr>
<td>22</td>
<td>Medical Assistants</td>
<td>18,060</td>
<td>23,540</td>
</tr>
<tr>
<td>23</td>
<td>Maids &amp; Housekeeping Cleaners</td>
<td>79,700</td>
<td>84,950</td>
</tr>
<tr>
<td>24</td>
<td>Plumbers, Pipefitters &amp; Steamfitters</td>
<td>28,040</td>
<td>32,960</td>
</tr>
<tr>
<td>25</td>
<td>First-Line Supervisors of Construction Workers</td>
<td>33,510</td>
<td>37,840</td>
</tr>
</tbody>
</table>

**Note:** The table lists the top 25 occupations by projected growth in New York State for the years 2006 to 2016, showing the change in employment, the annual average openings, and the projected growth rate.
## Table 6-B: Top 25 OJT Occupations with Greatest Projected Growth

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Typical Education and Training Requirements</th>
<th>Annual Wages ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Home Health Aides</td>
<td>Short-term on-the-job training</td>
<td>$21,570</td>
</tr>
<tr>
<td>2</td>
<td>Retail Salespersons</td>
<td>Short-term on-the-job training</td>
<td>$21,500</td>
</tr>
<tr>
<td>3</td>
<td>Personal &amp; Home Care Aides</td>
<td>Short-term on-the-job training</td>
<td>$22,320</td>
</tr>
<tr>
<td>4</td>
<td>Customer Service Representatives</td>
<td>Moderate-term on-the-job training</td>
<td>$31,800</td>
</tr>
<tr>
<td>5</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>Short-term on-the-job training</td>
<td>$25,170</td>
</tr>
<tr>
<td>6</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$46,010</td>
</tr>
<tr>
<td>7</td>
<td>Child Care Workers</td>
<td>Short-term on-the-job training</td>
<td>$23,070</td>
</tr>
<tr>
<td>8</td>
<td>Office Clerks, General</td>
<td>Short-term on-the-job training</td>
<td>$26,280</td>
</tr>
<tr>
<td>9</td>
<td>Waiters &amp; Waitresses</td>
<td>Short-term on-the-job training</td>
<td>$22,110</td>
</tr>
<tr>
<td>10</td>
<td>Security Guards</td>
<td>Short-term on-the-job training</td>
<td>$25,360</td>
</tr>
<tr>
<td>11</td>
<td>Receptionists &amp; Information Clerks</td>
<td>Short-term on-the-job training</td>
<td>$27,230</td>
</tr>
<tr>
<td>12</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>Moderate-term on-the-job training</td>
<td>$35,540</td>
</tr>
<tr>
<td>13</td>
<td>Carpenters</td>
<td>Long-term on-the-job training</td>
<td>$47,350</td>
</tr>
<tr>
<td>14</td>
<td>Food Preparation Workers</td>
<td>Short-term on-the-job training</td>
<td>$19,870</td>
</tr>
<tr>
<td>15</td>
<td>Combined Food Preparation &amp; Serving Workers</td>
<td>Short-term on-the-job training</td>
<td>$16,250</td>
</tr>
<tr>
<td>16</td>
<td>Construction Laborers</td>
<td>Moderate-term on-the-job training</td>
<td>$42,690</td>
</tr>
<tr>
<td>17</td>
<td>Teacher Assistants</td>
<td>Short-term on-the-job training</td>
<td>$23,990</td>
</tr>
<tr>
<td>18</td>
<td>Social &amp; Human Service Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$28,030</td>
</tr>
<tr>
<td>19</td>
<td>Landscaping &amp; Groundskeeping Workers</td>
<td>Short-term on-the-job training</td>
<td>$24,960</td>
</tr>
<tr>
<td>20</td>
<td>Maintenance &amp; Repair Workers, General</td>
<td>Moderate-term on-the-job training</td>
<td>$36,160</td>
</tr>
<tr>
<td>21</td>
<td>Electricians</td>
<td>Long-term on-the-job training</td>
<td>$61,010</td>
</tr>
<tr>
<td>22</td>
<td>Medical Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$30,240</td>
</tr>
<tr>
<td>23</td>
<td>Maids &amp; Housekeeping Cleaners</td>
<td>Short-term on-the-job training</td>
<td>$26,020</td>
</tr>
<tr>
<td>24</td>
<td>Plumbers, Pipefitters &amp; Steamfitters</td>
<td>Long-term on-the-job training</td>
<td>$57,180</td>
</tr>
<tr>
<td>25</td>
<td>First-Line Supervisors of Construction Workers</td>
<td>Related work experience</td>
<td>$70,950</td>
</tr>
<tr>
<td>Rank</td>
<td>Occupational Title</td>
<td>Employment</td>
<td>Change</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2006</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>Retail Salespersons</td>
<td>280,650</td>
<td>308,820</td>
</tr>
<tr>
<td>2</td>
<td>Cashiers</td>
<td>207,260</td>
<td>199,670</td>
</tr>
<tr>
<td>3</td>
<td>Waiters &amp; Waitresses</td>
<td>130,830</td>
<td>142,220</td>
</tr>
<tr>
<td>4</td>
<td>Home Health Aides</td>
<td>138,290</td>
<td>190,610</td>
</tr>
<tr>
<td>5</td>
<td>Customer Service Representatives</td>
<td>136,160</td>
<td>155,200</td>
</tr>
<tr>
<td>6</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>190,410</td>
<td>206,630</td>
</tr>
<tr>
<td>7</td>
<td>Office Clerks, General</td>
<td>206,100</td>
<td>217,840</td>
</tr>
<tr>
<td>8</td>
<td>Child Care Workers</td>
<td>119,200</td>
<td>131,300</td>
</tr>
<tr>
<td>9</td>
<td>Food Preparation Workers</td>
<td>88,540</td>
<td>98,810</td>
</tr>
<tr>
<td>10</td>
<td>Personal &amp; Home Care Aides</td>
<td>74,680</td>
<td>100,790</td>
</tr>
<tr>
<td>11</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>147,060</td>
<td>161,530</td>
</tr>
<tr>
<td>12</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>142,830</td>
<td>153,440</td>
</tr>
<tr>
<td>13</td>
<td>Receptionists &amp; Information Clerks</td>
<td>87,120</td>
<td>97,820</td>
</tr>
<tr>
<td>14</td>
<td>Security Guards</td>
<td>100,550</td>
<td>111,250</td>
</tr>
<tr>
<td>15</td>
<td>Laborers &amp; Freight, Stock &amp; Material Movers, Hand</td>
<td>96,430</td>
<td>90,370</td>
</tr>
<tr>
<td>16</td>
<td>Teacher Assistants</td>
<td>129,910</td>
<td>137,510</td>
</tr>
<tr>
<td>17</td>
<td>Counter Attendants, Cafeteria &amp; Concession</td>
<td>37,370</td>
<td>40,240</td>
</tr>
<tr>
<td>18</td>
<td>Secretaries, Except Legal, Medical &amp; Executive</td>
<td>178,180</td>
<td>174,690</td>
</tr>
<tr>
<td>19</td>
<td>Sales Reps, Wholesale/Manufacturing, except Tech.</td>
<td>119,850</td>
<td>120,090</td>
</tr>
<tr>
<td>20</td>
<td>Stock Clerks &amp; Order Fillers</td>
<td>104,850</td>
<td>92,350</td>
</tr>
<tr>
<td>21</td>
<td>First-Line Supervisors/Managers of Office Workers</td>
<td>106,400</td>
<td>106,690</td>
</tr>
<tr>
<td>22</td>
<td>Combined Food Preparation &amp; Serving Workers</td>
<td>73,580</td>
<td>81,580</td>
</tr>
<tr>
<td>23</td>
<td>Maids &amp; Housekeeping Cleaners</td>
<td>79,700</td>
<td>84,950</td>
</tr>
<tr>
<td>24</td>
<td>Carpenters</td>
<td>69,260</td>
<td>79,810</td>
</tr>
<tr>
<td>25</td>
<td>First-Line Supervisors of Retail Sales Workers</td>
<td>72,340</td>
<td>74,520</td>
</tr>
</tbody>
</table>
Table 7-B: Top 25 OJT Occupations With Largest Number of Annual Openings

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Typical Education and Training Requirements</th>
<th>Annual Wages ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Median</td>
</tr>
<tr>
<td>1</td>
<td>Retail Salespersons</td>
<td>Short-term on-the-job training</td>
<td>$21,500</td>
</tr>
<tr>
<td>2</td>
<td>Cashiers</td>
<td>Short-term on-the-job training</td>
<td>$17,500</td>
</tr>
<tr>
<td>3</td>
<td>Waiters &amp; Waitresses</td>
<td>Short-term on-the-job training</td>
<td>$22,110</td>
</tr>
<tr>
<td>4</td>
<td>Home Health Aides</td>
<td>Short-term on-the-job training</td>
<td>$21,570</td>
</tr>
<tr>
<td>5</td>
<td>Customer Service Representatives</td>
<td>Moderate-term on-the-job training</td>
<td>$31,800</td>
</tr>
<tr>
<td>6</td>
<td>Janitors &amp; Cleaners, except Maids &amp; Housekeepers</td>
<td>Short-term on-the-job training</td>
<td>$25,170</td>
</tr>
<tr>
<td>7</td>
<td>Office Clerks, General</td>
<td>Short-term on-the-job training</td>
<td>$26,280</td>
</tr>
<tr>
<td>8</td>
<td>Child Care Workers</td>
<td>Short-term on-the-job training</td>
<td>$23,070</td>
</tr>
<tr>
<td>9</td>
<td>Food Preparation Workers</td>
<td>Short-term on-the-job training</td>
<td>$19,870</td>
</tr>
<tr>
<td>10</td>
<td>Personal &amp; Home Care Aides</td>
<td>Short-term on-the-job training</td>
<td>$22,320</td>
</tr>
<tr>
<td>11</td>
<td>Executive Secretaries &amp; Administrative Assistants</td>
<td>Moderate-term on-the-job training</td>
<td>$46,010</td>
</tr>
<tr>
<td>12</td>
<td>Bookkeeping, Accounting &amp; Auditing Clerks</td>
<td>Moderate-term on-the-job training</td>
<td>$35,540</td>
</tr>
<tr>
<td>13</td>
<td>Receptionists &amp; Information Clerks</td>
<td>Short-term on-the-job training</td>
<td>$27,230</td>
</tr>
<tr>
<td>14</td>
<td>Security Guards</td>
<td>Short-term on-the-job training</td>
<td>$25,360</td>
</tr>
<tr>
<td>15</td>
<td>Laborers &amp; Freight, Stock &amp; Material Movers, Hand</td>
<td>Short-term on-the-job training</td>
<td>$23,900</td>
</tr>
<tr>
<td>16</td>
<td>Teacher Assistants</td>
<td>Short-term on-the-job training</td>
<td>$23,990</td>
</tr>
<tr>
<td>17</td>
<td>Counter Attendants, Cafeteria &amp; Concession</td>
<td>Short-term on-the-job training</td>
<td>$17,060</td>
</tr>
<tr>
<td>18</td>
<td>Secretaries, Except Legal, Medical &amp; Executive</td>
<td>Moderate-term on-the-job training</td>
<td>$31,380</td>
</tr>
<tr>
<td>19</td>
<td>Sales Reps, Wholesale/Manufacturing, except Tech.</td>
<td>Moderate-term on-the-job training</td>
<td>$57,350</td>
</tr>
<tr>
<td>20</td>
<td>Stock Clerks &amp; Order Fillers</td>
<td>Short-term on-the-job training</td>
<td>$19,920</td>
</tr>
<tr>
<td>21</td>
<td>First-Line Supervisors/Managers of Office Workers</td>
<td>Related work experience</td>
<td>$51,650</td>
</tr>
<tr>
<td>22</td>
<td>Combined Food Preparation &amp; Serving Workers</td>
<td>Short-term on-the-job training</td>
<td>$16,250</td>
</tr>
<tr>
<td>23</td>
<td>Maids &amp; Housekeeping Cleaners</td>
<td>Short-term on-the-job training</td>
<td>$26,020</td>
</tr>
<tr>
<td>24</td>
<td>Carpenters</td>
<td>Long-term on-the-job training</td>
<td>$47,350</td>
</tr>
<tr>
<td>25</td>
<td>First-Line Supervisors of Retail Sales Workers</td>
<td>Related work experience</td>
<td>$39,320</td>
</tr>
<tr>
<td>Rank</td>
<td>Occupational Title</td>
<td>Employment Change</td>
<td>Annual Average Openings</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------------------------</td>
<td>-------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2006</td>
<td>2016</td>
</tr>
<tr>
<td>1</td>
<td>Registered Nurses</td>
<td>169,400</td>
<td>193,520</td>
</tr>
<tr>
<td>2</td>
<td>Accountants &amp; Auditors</td>
<td>106,960</td>
<td>120,470</td>
</tr>
<tr>
<td>3</td>
<td>Computer Software Engineers, Applications</td>
<td>32,250</td>
<td>44,490</td>
</tr>
<tr>
<td>4</td>
<td>Nursing Aides, Orderlies &amp; Attendants</td>
<td>104,210</td>
<td>116,310</td>
</tr>
<tr>
<td>5</td>
<td>Elementary School Teachers, Except Special Ed.</td>
<td>97,210</td>
<td>107,600</td>
</tr>
<tr>
<td>6</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td>17,100</td>
<td>24,270</td>
</tr>
<tr>
<td>7</td>
<td>Computer Systems Analysts</td>
<td>30,520</td>
<td>37,260</td>
</tr>
<tr>
<td>8</td>
<td>Financial Analysts</td>
<td>33,170</td>
<td>39,090</td>
</tr>
<tr>
<td>9</td>
<td>Management Analysts</td>
<td>36,480</td>
<td>42,070</td>
</tr>
<tr>
<td>10</td>
<td>Securities, Commodities &amp; Financial Services Sales</td>
<td>40,950</td>
<td>46,360</td>
</tr>
<tr>
<td>11</td>
<td>Lawyers</td>
<td>85,610</td>
<td>90,960</td>
</tr>
<tr>
<td>12</td>
<td>Licensed Practical &amp; Licensed Vocational Nurses</td>
<td>49,820</td>
<td>54,830</td>
</tr>
<tr>
<td>13</td>
<td>Financial Managers</td>
<td>52,410</td>
<td>57,400</td>
</tr>
<tr>
<td>14</td>
<td>Personal Financial Advisors</td>
<td>24,750</td>
<td>29,060</td>
</tr>
<tr>
<td>15</td>
<td>Paralegals &amp; Legal Assistants</td>
<td>25,580</td>
<td>29,760</td>
</tr>
<tr>
<td>16</td>
<td>Network &amp; Computer Systems Administrators</td>
<td>17,980</td>
<td>21,800</td>
</tr>
<tr>
<td>17</td>
<td>Market Research Analysts</td>
<td>25,830</td>
<td>29,480</td>
</tr>
<tr>
<td>18</td>
<td>Computer Software Engineers, Systems Software</td>
<td>18,430</td>
<td>21,950</td>
</tr>
<tr>
<td>19</td>
<td>Middle School Teachers, except Special Ed.</td>
<td>41,060</td>
<td>44,530</td>
</tr>
<tr>
<td>20</td>
<td>Fitness Trainers &amp; Aerobics Instructors</td>
<td>16,860</td>
<td>20,230</td>
</tr>
<tr>
<td>21</td>
<td>Construction Managers</td>
<td>27,080</td>
<td>30,430</td>
</tr>
<tr>
<td>22</td>
<td>Special Education Teachers, Pre- &amp; Elementary</td>
<td>21,730</td>
<td>25,040</td>
</tr>
<tr>
<td>23</td>
<td>Public Relations Specialists</td>
<td>22,820</td>
<td>26,080</td>
</tr>
<tr>
<td>24</td>
<td>Preschool Teachers, except Special Education</td>
<td>31,220</td>
<td>33,960</td>
</tr>
<tr>
<td>25</td>
<td>Computer Support Specialists</td>
<td>34,180</td>
<td>36,910</td>
</tr>
<tr>
<td>Rank</td>
<td>Occupational Title</td>
<td>Typical Education and Training Requirements</td>
<td>Annual Wages ($)</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medan</td>
<td>Entry</td>
</tr>
<tr>
<td>1</td>
<td>Registered Nurses</td>
<td>Associate degree</td>
<td>$69,690</td>
</tr>
<tr>
<td>2</td>
<td>Accountants &amp; Auditors</td>
<td>Bachelor's degree</td>
<td>$69,900</td>
</tr>
<tr>
<td>3</td>
<td>Computer Software Engineers, Applications</td>
<td>Bachelor's degree</td>
<td>$89,330</td>
</tr>
<tr>
<td>4</td>
<td>Nursing Aides, Orderlies &amp; Attendants</td>
<td>Postsecondary vocational training</td>
<td>$30,850</td>
</tr>
<tr>
<td>5</td>
<td>Elementary School Teachers, Except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$61,870</td>
</tr>
<tr>
<td>6</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td>Bachelor's degree</td>
<td>$77,050</td>
</tr>
<tr>
<td>7</td>
<td>Computer Systems Analysts</td>
<td>Bachelor's degree</td>
<td>$83,060</td>
</tr>
<tr>
<td>8</td>
<td>Financial Analysts</td>
<td>Bachelor's degree</td>
<td>$87,240</td>
</tr>
<tr>
<td>9</td>
<td>Management Analysts</td>
<td>College plus work experience</td>
<td>$77,800</td>
</tr>
<tr>
<td>10</td>
<td>Securities, Commodities &amp; Financial Services Sales</td>
<td>Bachelor's degree</td>
<td>$98,540</td>
</tr>
<tr>
<td>11</td>
<td>Lawyers</td>
<td>First professional degree</td>
<td>$131,270</td>
</tr>
<tr>
<td>12</td>
<td>Licensed Practical &amp; Licensed Vocational Nurses</td>
<td>Postsecondary vocational training</td>
<td>$40,570</td>
</tr>
<tr>
<td>13</td>
<td>Financial Managers</td>
<td>College plus work experience</td>
<td>$132,760</td>
</tr>
<tr>
<td>14</td>
<td>Personal Financial Advisors</td>
<td>Bachelor's degree</td>
<td>$125,590</td>
</tr>
<tr>
<td>15</td>
<td>Paralegals &amp; Legal Assistants</td>
<td>Associate degree</td>
<td>$54,940</td>
</tr>
<tr>
<td>16</td>
<td>Network &amp; Computer Systems Administrators</td>
<td>Bachelor's degree</td>
<td>$76,980</td>
</tr>
<tr>
<td>17</td>
<td>Market Research Analysts</td>
<td>Bachelor's degree</td>
<td>$60,050</td>
</tr>
<tr>
<td>18</td>
<td>Computer Software Engineers, Systems Software</td>
<td>Bachelor's degree</td>
<td>$97,340</td>
</tr>
<tr>
<td>19</td>
<td>Middle School Teachers, except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$63,020</td>
</tr>
<tr>
<td>20</td>
<td>Fitness Trainers &amp; Aerobics Instructors</td>
<td>Postsecondary vocational training</td>
<td>$38,380</td>
</tr>
<tr>
<td>21</td>
<td>Construction Managers</td>
<td>Bachelor's degree</td>
<td>$113,290</td>
</tr>
<tr>
<td>22</td>
<td>Special Education Teachers, Pre- &amp; Elementary</td>
<td>Bachelor's degree</td>
<td>$62,730</td>
</tr>
<tr>
<td>23</td>
<td>Public Relations Specialists</td>
<td>Bachelor's degree</td>
<td>$56,440</td>
</tr>
<tr>
<td>24</td>
<td>Preschool Teachers, except Special Education</td>
<td>Postsecondary vocational training</td>
<td>$28,600</td>
</tr>
<tr>
<td>25</td>
<td>Computer Support Specialists</td>
<td>Associate degree</td>
<td>$49,330</td>
</tr>
</tbody>
</table>
**Table 9-A: Top 25 Post Secondary Occupations With Largest Number of Annual Openings**

New York State Employment Change/Annual Openings to 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Employment Change</th>
<th>Annual Average Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2016</td>
<td>Net</td>
</tr>
<tr>
<td>1</td>
<td>Registered Nurses</td>
<td>169,400</td>
<td>193,520</td>
</tr>
<tr>
<td>2</td>
<td>Accountants &amp; Auditors</td>
<td>106,960</td>
<td>120,470</td>
</tr>
<tr>
<td>3</td>
<td>Elementary School Teachers, except Special Ed.</td>
<td>97,210</td>
<td>107,600</td>
</tr>
<tr>
<td>4</td>
<td>Secondary School Teachers, except Special Ed.</td>
<td>81,770</td>
<td>84,270</td>
</tr>
<tr>
<td>5</td>
<td>General &amp; Operations Managers</td>
<td>95,880</td>
<td>92,440</td>
</tr>
<tr>
<td>6</td>
<td>Lawyers</td>
<td>85,610</td>
<td>90,960</td>
</tr>
<tr>
<td>7</td>
<td>Nursing Aides, Orderlies &amp; Attendants</td>
<td>104,210</td>
<td>116,310</td>
</tr>
<tr>
<td>8</td>
<td>Licensed Practical &amp; Licensed Vocational Nurses</td>
<td>49,820</td>
<td>54,830</td>
</tr>
<tr>
<td>9</td>
<td>Computer Software Engineers, Applications</td>
<td>32,250</td>
<td>44,490</td>
</tr>
<tr>
<td>10</td>
<td>Securities, Commodities &amp; Financial Services Sales</td>
<td>40,950</td>
<td>46,360</td>
</tr>
<tr>
<td>11</td>
<td>Computer Systems Analysts</td>
<td>30,520</td>
<td>37,260</td>
</tr>
<tr>
<td>12</td>
<td>Computer Support Specialists</td>
<td>34,180</td>
<td>36,910</td>
</tr>
<tr>
<td>13</td>
<td>Financial Managers</td>
<td>52,410</td>
<td>57,400</td>
</tr>
<tr>
<td>14</td>
<td>Middle School Teachers, except Special Ed.</td>
<td>41,060</td>
<td>44,530</td>
</tr>
<tr>
<td>15</td>
<td>Management Analysts</td>
<td>36,480</td>
<td>42,070</td>
</tr>
<tr>
<td>16</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td>17,100</td>
<td>24,270</td>
</tr>
<tr>
<td>17</td>
<td>Automotive Service Technicians &amp; Mechanics</td>
<td>41,620</td>
<td>43,940</td>
</tr>
<tr>
<td>18</td>
<td>Physicians &amp; Surgeons, All Other</td>
<td>37,620</td>
<td>40,140</td>
</tr>
<tr>
<td>19</td>
<td>Special Education Teachers, Pre- &amp; Elementary</td>
<td>21,730</td>
<td>25,040</td>
</tr>
<tr>
<td>20</td>
<td>Real Estate Sales Agents</td>
<td>34,260</td>
<td>36,710</td>
</tr>
<tr>
<td>21</td>
<td>Network &amp; Computer Systems Administrators</td>
<td>17,980</td>
<td>21,800</td>
</tr>
<tr>
<td>22</td>
<td>Preschool Teachers, except Special Education</td>
<td>31,220</td>
<td>33,960</td>
</tr>
<tr>
<td>23</td>
<td>Child, Family &amp; School Social Workers</td>
<td>24,670</td>
<td>27,370</td>
</tr>
<tr>
<td>24</td>
<td>Graphic Designers</td>
<td>23,890</td>
<td>25,390</td>
</tr>
<tr>
<td>25</td>
<td>Financial Analysts</td>
<td>33,170</td>
<td>39,090</td>
</tr>
</tbody>
</table>
### Table 9-B: Top 25 Post Secondary Occupations With Largest Number of Annual Openings

<table>
<thead>
<tr>
<th>Rank</th>
<th>Occupational Title</th>
<th>Typical Education and Training Requirements</th>
<th>Annual Wages ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Median</td>
<td>Entry</td>
</tr>
<tr>
<td>1</td>
<td>Registered Nurses</td>
<td>Associate degree</td>
<td>$69,690</td>
</tr>
<tr>
<td>2</td>
<td>Accountants &amp; Auditors</td>
<td>Bachelor's degree</td>
<td>$69,900</td>
</tr>
<tr>
<td>3</td>
<td>Elementary School Teachers, except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$61,870</td>
</tr>
<tr>
<td>4</td>
<td>Secondary School Teachers, except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$62,380</td>
</tr>
<tr>
<td>5</td>
<td>General &amp; Operations Managers</td>
<td>Bachelor's degree</td>
<td>$115,530</td>
</tr>
<tr>
<td>6</td>
<td>Lawyers</td>
<td>First professional degree</td>
<td>$131,270</td>
</tr>
<tr>
<td>7</td>
<td>Nursing Aides, Orderlies &amp; Attendants</td>
<td>Postsecondary vocational training</td>
<td>$30,850</td>
</tr>
<tr>
<td>8</td>
<td>Licensed Practical &amp; Licensed Vocational Nurses</td>
<td>Postsecondary vocational training</td>
<td>$40,570</td>
</tr>
<tr>
<td>9</td>
<td>Computer Software Engineers, Applications</td>
<td>Bachelor's degree</td>
<td>$89,330</td>
</tr>
<tr>
<td>10</td>
<td>Securities, Commodities &amp; Financial Services Sales</td>
<td>Bachelor's degree</td>
<td>$98,540</td>
</tr>
<tr>
<td>11</td>
<td>Computer Systems Analysts</td>
<td>Bachelor's degree</td>
<td>$83,060</td>
</tr>
<tr>
<td>12</td>
<td>Computer Support Specialists</td>
<td>Associate degree</td>
<td>$49,330</td>
</tr>
<tr>
<td>13</td>
<td>Financial Managers</td>
<td>College plus work experience</td>
<td>$132,760</td>
</tr>
<tr>
<td>14</td>
<td>Middle School Teachers, except Special Ed.</td>
<td>Bachelor's degree</td>
<td>$63,020</td>
</tr>
<tr>
<td>15</td>
<td>Management Analysts</td>
<td>College plus work experience</td>
<td>$77,800</td>
</tr>
<tr>
<td>16</td>
<td>Network Systems &amp; Data Communications Analysts</td>
<td>Bachelor's degree</td>
<td>$77,050</td>
</tr>
<tr>
<td>17</td>
<td>Automotive Service Technicians &amp; Mechanics</td>
<td>Postsecondary vocational training</td>
<td>$34,300</td>
</tr>
<tr>
<td>18</td>
<td>Physicians &amp; Surgeons, All Other</td>
<td>First professional degree</td>
<td>$149,700</td>
</tr>
<tr>
<td>19</td>
<td>Special Education Teachers, Pre- &amp; Elementary</td>
<td>Bachelor's degree</td>
<td>$62,730</td>
</tr>
<tr>
<td>20</td>
<td>Real Estate Sales Agents</td>
<td>Postsecondary vocational training</td>
<td>$62,320</td>
</tr>
<tr>
<td>21</td>
<td>Network &amp; Computer Systems Administrators</td>
<td>Bachelor's degree</td>
<td>$76,980</td>
</tr>
<tr>
<td>22</td>
<td>Preschool Teachers, except Special Education</td>
<td>Postsecondary vocational training</td>
<td>$28,600</td>
</tr>
<tr>
<td>23</td>
<td>Child, Family &amp; School Social Workers</td>
<td>Bachelor's degree</td>
<td>$46,240</td>
</tr>
<tr>
<td>24</td>
<td>Graphic Designers</td>
<td>Bachelor's degree</td>
<td>$52,190</td>
</tr>
<tr>
<td>25</td>
<td>Financial Analysts</td>
<td>Bachelor's degree</td>
<td>$87,240</td>
</tr>
</tbody>
</table>
VII. Occupational Projections: An Application

The Center for Health Workforce Studies (CHWS) at the University at Albany School of Public Health uses occupational projections to assess the health care workforce yearly. Their mission is to collect, analyze and distribute information on the supply, demand and use of health care workers.

CHWS uses New York State’s occupational projections data for health care occupations in the state and 10 sub-state labor market regions, to inform:

- Health, professional and education organizations
- Policy makers and
- The public

Their report “The Health Care Workforce in New York, 2007” analyzes trends in the supply and demand for health care workers in the state and its regions. CHWS starts with data from the New York State Department of Labor. We provide geography, industry definitions and changes, occupational estimates and occupational projections. Then the Center completes the picture by adding layers of data from:

- Other surveys of health care service providers
- Educational institutions that train health care providers

That final picture can assess current, as well as future, demand by using:

- Historical trends in employment by healthcare setting
- Health care industry projections

The information helps policymakers and others to focus worker education and training funds on areas of greatest need. It can also aid those who develop health workforce policy guidelines to gauge both the:

- Correct occupational makeup and
- Appropriate size of the workforce

Occupational projections for healthcare careers give current and future prospects for jobs in the industry.

For more information on the Center for Health Workforce Studies’ annual reports on the supply/demand of health workers, go to [http://chws.albany.edu/](http://chws.albany.edu/).

Who Cares About Occupational Projections?

People interested in occupational projections fall into three groups: those who are or will be seeking employment; those who are or will need workers; and those will be training workers.

Students, dislocated workers and other job seekers will find occupational projections information useful in narrowing their job search. After examining an occupation’s future prospects, employment numbers, and wage information, students can prepare themselves for careers (through post-secondary education or on-the-job-training) with some confidence that a job will be available upon finishing.

For people already in the labor market, occupational projections can help them match their specific skills with specific occupations, or determine what skills they need to acquire in order to switch to a different career. Workers being retrained after layoffs should be targeting jobs that will be needed not just today, but into the future.

Employers can use projections to make employment level decisions in preparing themselves for growth or decline over a 10-year span. If it appears that there may be a shortage of the type of worker they need, an employer can take steps to ‘grow their own’ through in-house training programs, or set up recruiting efforts outside the firm.

Economic developers can use occupational projection information to tout their area, and to target firms that will fit well into both the current and future job mix of the area.
VII. Summary

The Bottom Line

Jobs in the higher wage careers that require more on-the-job training or work experience tend to have lower average annual openings than those that require short-term on-the-job training. People looking at career options need to consider the trade-off between:

- Lower-paying careers with minimal training requirements but a high number of openings
  versus
- Higher-paying careers that require more training but offer fewer openings

Where To Go for More Information

Find New York State industry and occupational projections at: http://labor.ny.gov/stats/lspoj.shtml. We update occupational projections every two years for the state’s 10 regions as well as statewide.

IX. Appendix

The Projections Process

Step 1. Develop Industry Employment Projections
Industry employment projections are the key input to compiling occupational employment projections. Industry projections use historical trends in employment, population, and income to predict whether an industry is expected to expand or contract over the 10-year period. (See “Industry vs. Occupation” sidebar.) 2006 is our base year and we project to 2016.

Step 2. Apply Occupational Staffing Patterns
Occupational staffing patterns, which measure each occupation’s share of total employment within an industry, are created using employment estimates from the Occupational Employment Statistics program. These staffing patterns, after adjustment to reflect future occupational needs, are then applied to the industry projections in order to yield future occupational employment estimates. We sum these estimates across all industries to create the occupational projections.

Step 3. Include Replacement Needs
Openings also arise from the need to replace workers that leave an occupation. We calculate these openings also. By combining them with the openings due to growth, we get a fuller, more complete, measure of occupational opportunity.

Step 4. Attach Additional Occupational Data
To get a complete look at each occupation’s potential, we have included in our tables some additional information. For each occupation, we list the median wage, the entry, and experienced wage, and the minimum education or training required for entry into each occupation. This way, we know something about the quality of the job as well as the quantity of openings.