

# Occupational employment



**T**his section shows 2002–12 projected growth or decline in employment by occupation. Employment change affects the opportunities available to jobseekers. Occupations with fast growth, many new jobs, or many new job openings generally offer better prospects for jobseekers.

Most of these charts show which occupations or occupational groups are expected to grow fastest or gain the most jobs during the projections decade. But, when it comes to job prospects, job growth tells only part of the story. Job openings for workers come from the need to replace workers who leave an occupation, as well as from the need to fill new jobs that are added to an occupation. A few charts show which occupations and occupational groups are expected to have the most openings.

Overall employment growth is projected to average 15 percent. That average is shown as a vertical line in charts presenting percent change.

## Growth by occupational group

To better explain employment trends, the first charts show employment growth in groups of occupations, sorted according to the tasks that workers in each group perform.

The 10 occupational groups are as follows:

- ◆ **Management and business and financial operations occupations.** Many of these workers direct the activities of business, government, and other organizations and perform tasks related to finance and business. Examples are financial managers, school administrators, accountants, and food service managers.
- ◆ **Professional and related occupations.** Workers in this group perform a variety of functions throughout the economy, in all industries. Examples are physical therapists, engineering technicians, lawyers, photographers, desktop publishers, and computer software engineers.

- ◆ **Service occupations.** This group includes workers who assist the public. Police, cooks, nursing aides, flight attendants, child care workers, and cosmetologists are examples.
- ◆ **Sales and related occupations.** Occupations in this group are involved in the sale of goods and services, both to businesses and to consumers. Workers include cashiers, insurance sales agents, retail salespersons, telemarketers, and travel agents.
- ◆ **Office and administrative support occupations.** Workers in this group prepare and file documents, deal with the public, and gather and distribute goods and information. Examples are secretaries, stock clerks, mail carriers, computer operators, and receptionists and information clerks.
- ◆ **Farming, fishing, and forestry occupations.** Workers in this group tend and harvest renewable resources. Examples are farmworkers, fishing vessel captains, and logging equipment operators. The group excludes workers managing farms and ranches, who are considered to hold management occupations.
- ◆ **Construction and extraction occupations.** This group includes workers in construction and building trades, mining, and oil and gas extraction. Examples are carpenters, electricians, roustabouts, and mining machine operators.
- ◆ **Installation, maintenance, and repair occupations.** Workers in this group install and maintain all types of goods and equipment. They include avionics technicians, automotive service technicians and mechanics, bicycle repairers, industrial machinery mechanics, and millwrights.
- ◆ **Production occupations.** Many people in these occupations work as assemblers or machine operators, primarily in manufacturing industries. They include computer-controlled machine tool operators, machinists, textile occupations, power plant operators, and chemical equipment operators.
- ◆ **Transportation and material moving occupations.** Occupations in this group include airline pilots, truck drivers, locomotive engineers, and parking lot attendants.

## **Classification by postsecondary education or training obtained**

As an aid to jobseekers and counselors, some charts focus on occupations with similar postsecondary education or training requirements. For each occupation they analyze, BLS economists choose the postsecondary education or training category that is most significant for workers in that occupation. In nearly all occupations, however, workers have a variety of educational backgrounds.

Occupations fall within 1 of 11 postsecondary education or training categories, ranging from a doctoral degree to short-term on-the-job training.

The postsecondary education or training categories are as follows:

- ◆ **First-professional degree.** Completion of a first-professional degree, such as a medical or law degree, usually requires at least 3 years of full-time academic study beyond a bachelor's degree.
- ◆ **Doctoral degree.** Completion of a doctoral degree, such as a Ph.D., usually requires at least 3 years of full-time academic study beyond a bachelor's degree.
- ◆ **Master's degree.** Completion of a master's degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree.
- ◆ **Work experience, plus a bachelor's or graduate degree.** Most occupations in this category are managerial. Workers in occupations in this category usually have experience in a related nonmanagement position and have obtained a bachelor's or higher degree.
- ◆ **Bachelor's degree.** Completion of a bachelor's degree usually requires at least 4 years of full-time academic study beyond high school.
- ◆ **Associate degree.** Completion of an associate degree usually requires 2 years of full-time academic study beyond high school.
- ◆ **Postsecondary vocational training.** Postsecondary vocational programs vary in length, ranging from several weeks to a year or more. They lead to a certificate or other award but not an academic degree.

- ◆ **Work experience in a related occupation.** Many occupations in this category are supervisory and require experience in the occupation that is being supervised.
- ◆ **Long-term on-the-job training.** Workers in occupations in this category usually have more than 12 months of on-the-job training or combined work experience and formal classroom instruction. Apprenticeships and employer-sponsored training are classified here.
- ◆ **Moderate-term on-the-job training.** Workers in occupations in this category develop the skills they need during 1 to 12 months of combined on-the-job experience and informal training.
- ◆ **Short-term on-the-job training.** Workers in occupations in this category develop skills they need after a short demonstration of job duties or during 1 month or less of on-the-job experience or instruction.

## Earnings

Because many people consider earnings an important job characteristic, some charts include earnings rankings based on 2002 data. Employment is divided into four earnings ranges, or quartiles. In the charts, an occupation's earnings quartile is identified by dollar signs, with \$\$\$\$ indicating that the occupation's median earnings fall within the highest earnings range and \$ indicating that they fall within the lowest. Levels correspond with the following earnings ranges:

Symbol	Earnings quartile	Range
\$\$\$\$	Very high	\$41,820 and higher
\$\$\$	High	\$27,500 to \$41,780
\$\$	Low	\$19,710 to \$27,380
\$	Very low	\$19,600 and lower.

The ranges are structured so that each contains one-fourth of all employment. So occupations in the highest range, for example, have median earnings that fall within the top one-fourth of median earnings for all workers.

Rankings are a useful guide, but earnings vary widely within each occupation. For example, paralegals had median annual earnings of \$37,950 in 2002, placing them in the high-earnings quartile (\$\$\$). But the highest paid 10 percent of these workers earned \$61,150 or more; the lowest paid 10 percent earned \$24,470 or less.

For detailed earnings information about occupations, call the Division of Occupational Employment Statistics, (202) 691-6569, or visit online at [www.bls.gov/oes](http://www.bls.gov/oes).

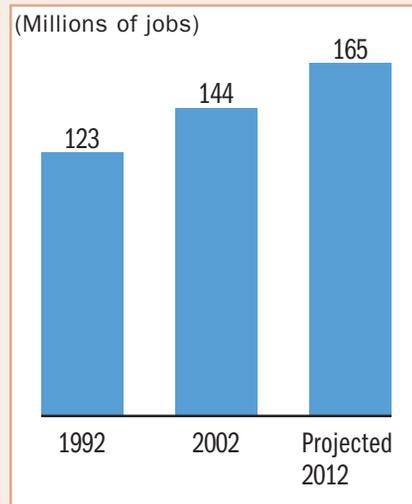
Earnings are for wage-and-salary workers only. The earnings for self-employed workers are not included in the measurements.

## Self-employed workers

Another job characteristic people may consider important is the opportunity to be their own boss. One chart provides information on occupations that had the most self-employed workers in 2002.

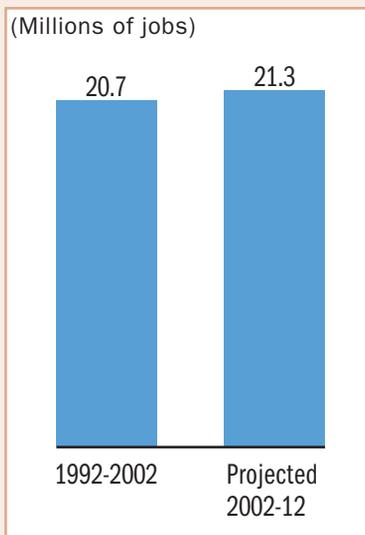
## Total employment

Employment, 1992, 2002, and projected 2012



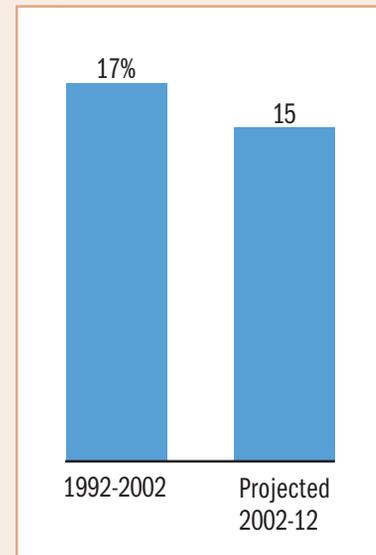
By 2012, the total number of jobs is projected to reach 165 million.

Numeric employment growth, 1992-2002 and projected 2002-12



The economy is expected to add slightly more new jobs between 2002 and 2012 than it did during the previous decade.

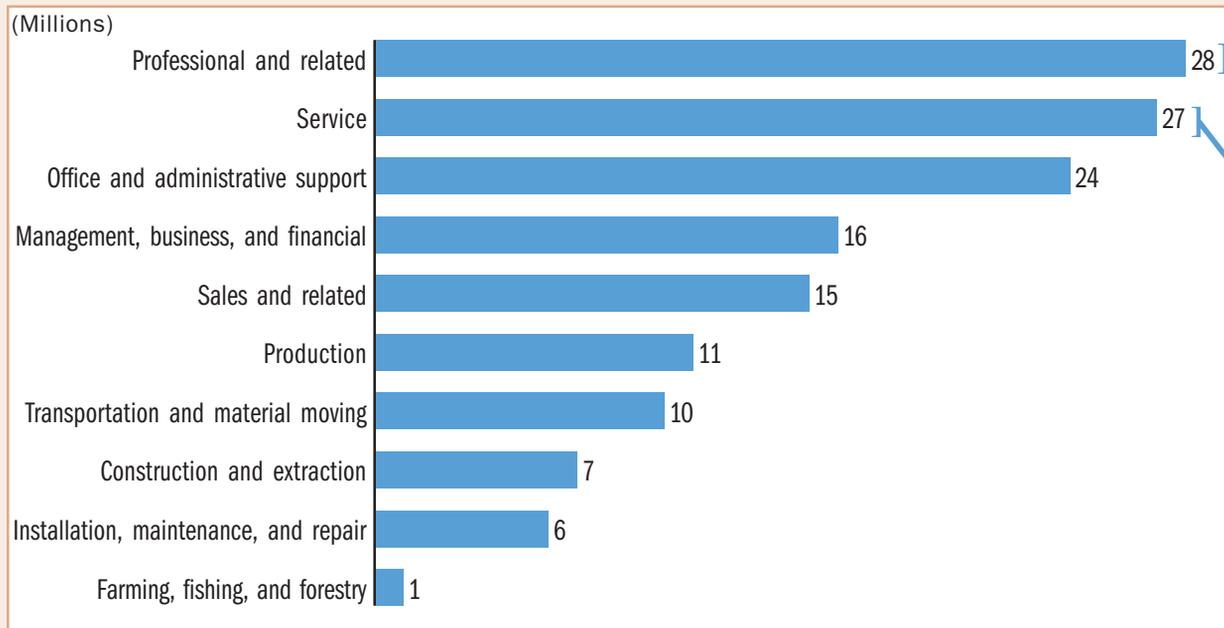
Percent employment growth, 1992-2002 and projected 2002-12



Employment growth is projected to be about 2 percentage points slower in the 2002-12 decade than it was in the previous one.

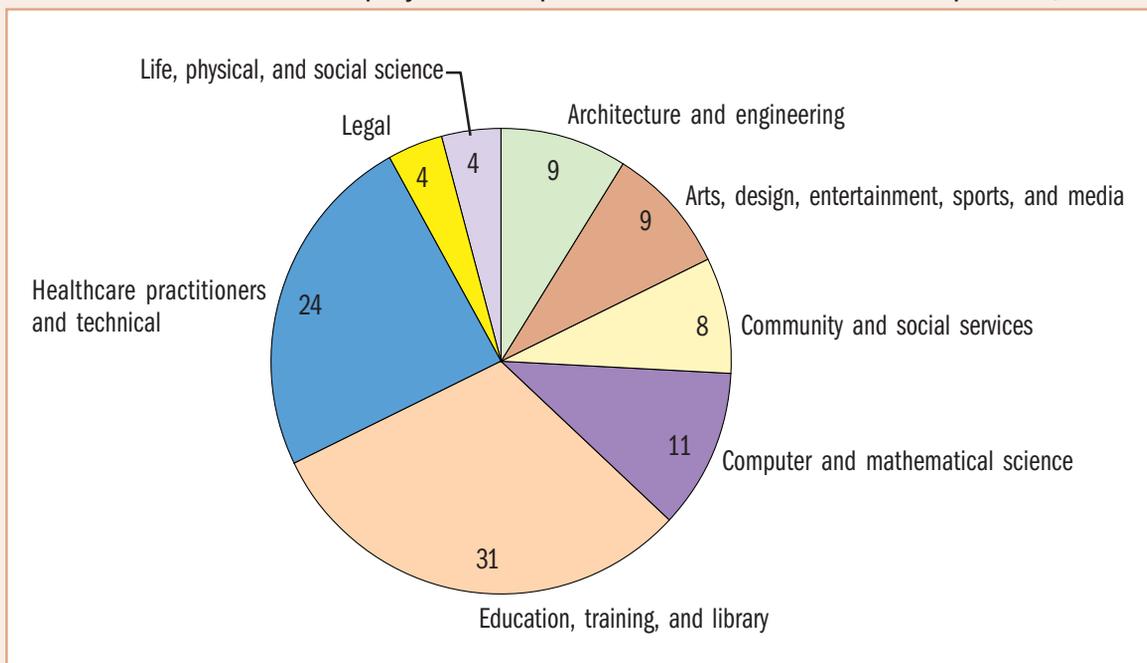
## Employment, 2002

Numeric employment by major occupational group, 2002



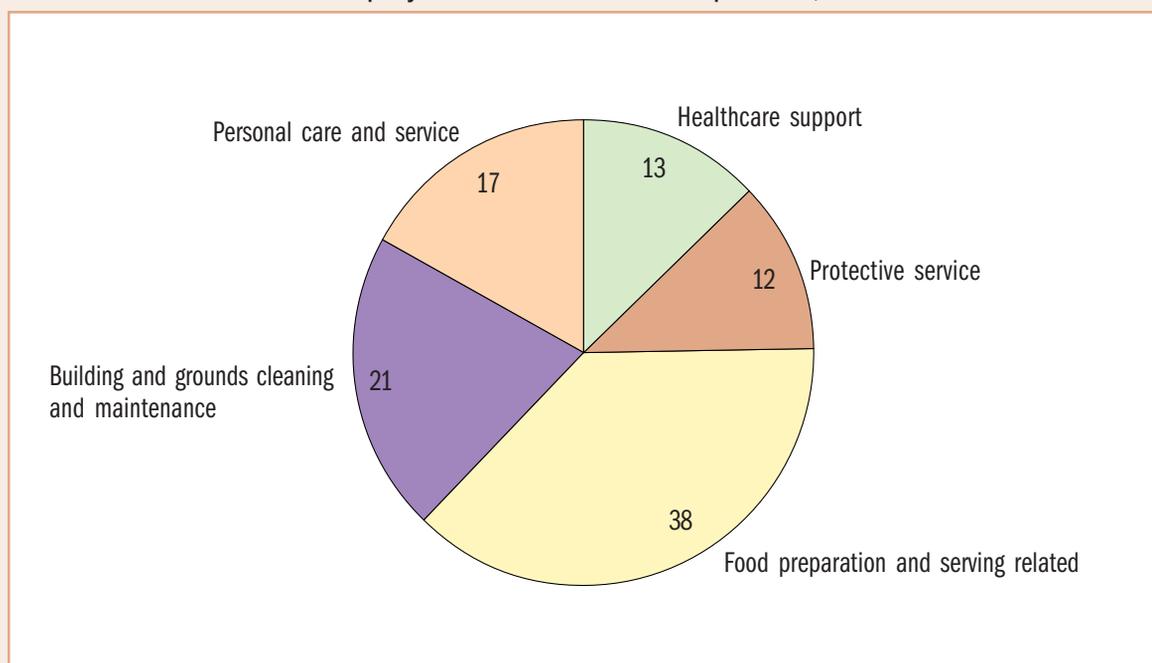
Occupations are grouped broadly, based on the tasks that workers in them perform. In 2002, the largest of the major groups were professional and related occupations and service occupations.

Percent distribution of employment in professional and related occupations, 2002



The professional and related group covers a wide range of occupations. Within this category, education, training, and library occupations had the largest share of employment.

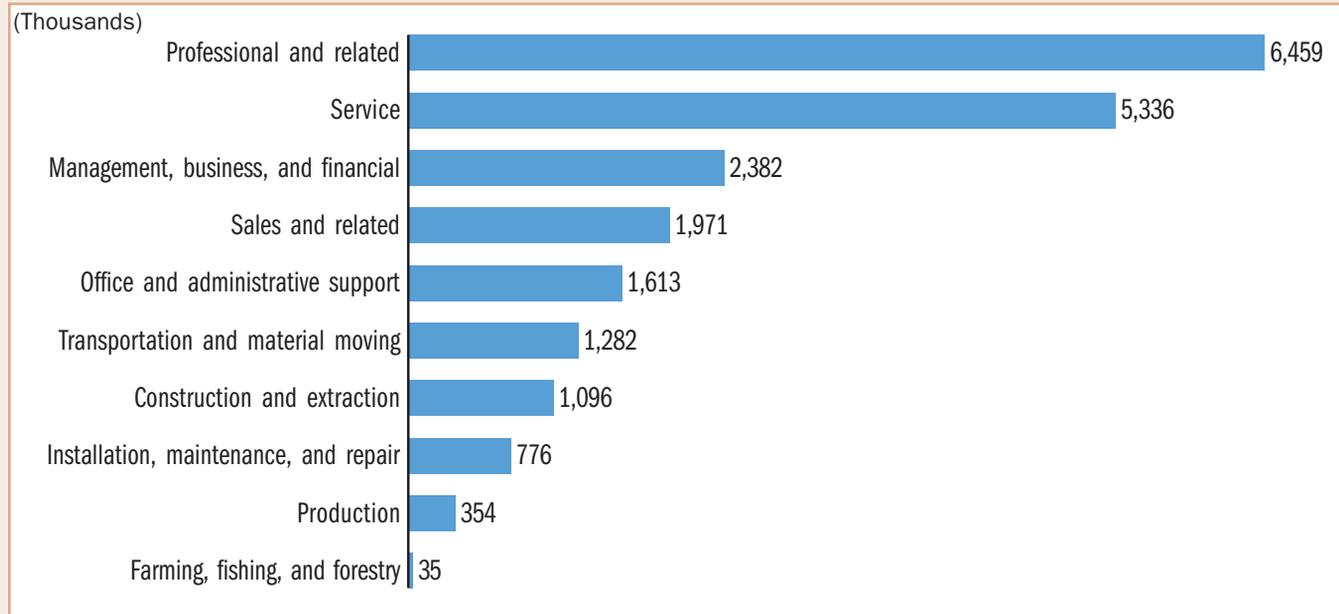
Percent distribution of employment in service occupations, 2002



Service occupations are equally diverse. Occupations related to food preparation and serving had the largest share of jobs.

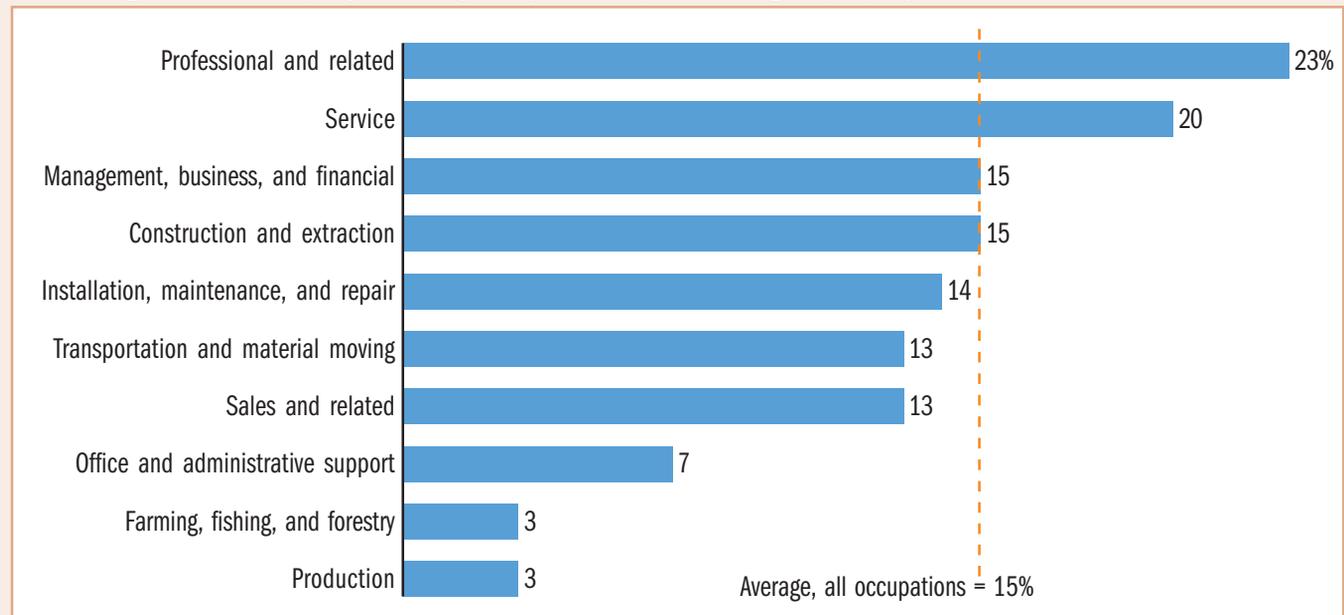
## Employment growth

Numeric growth in employment by major occupational group, projected 2002-12



**Professional and related occupations and service occupations are expected to add the most new jobs to the economy over the projections decade.**

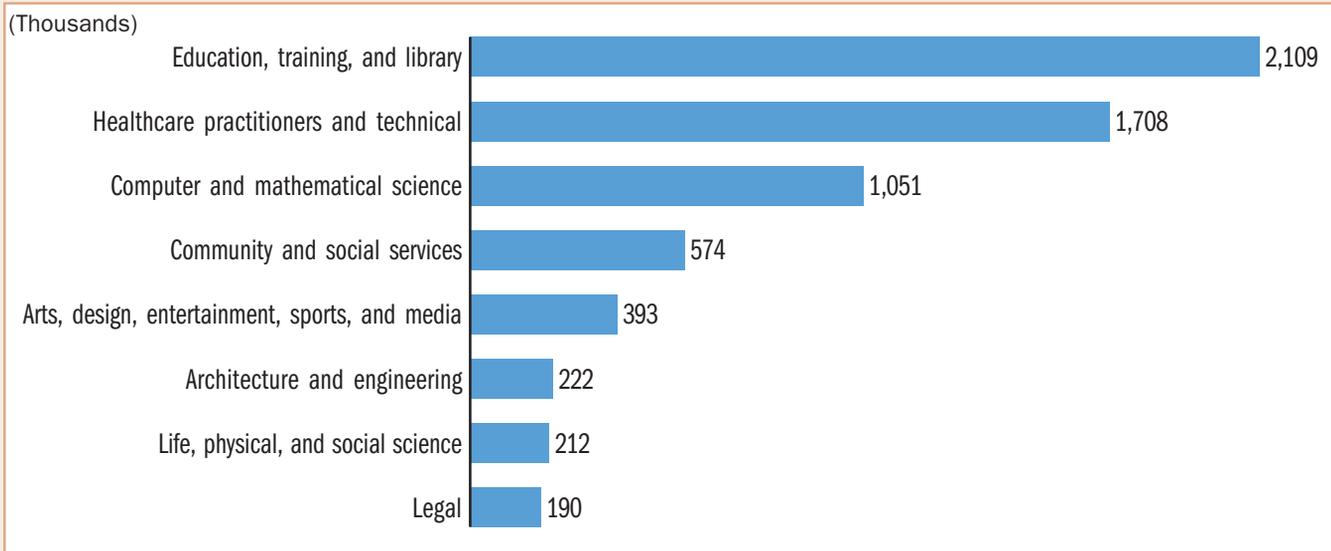
Percent growth in employment by major occupational group, projected 2002-12



**Although every occupational group is projected to grow, professional and related occupations and service occupations are expected to grow the fastest. In groups that are growing slowly, job increases are expected to be tempered by technological change and increasing worker productivity.**

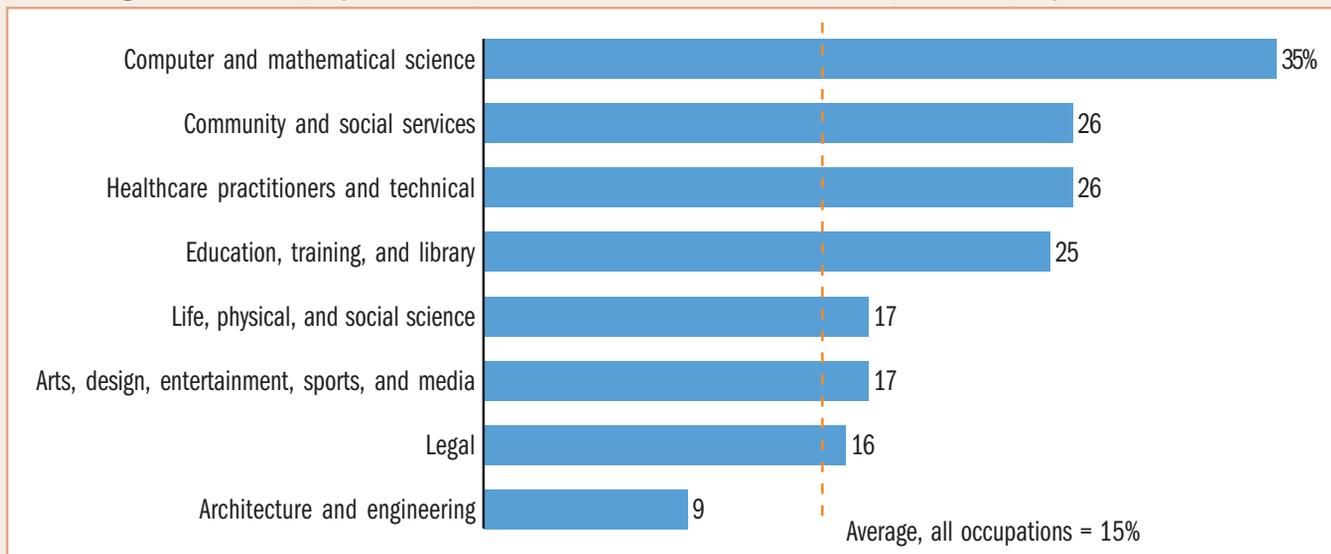
## Employment growth

Numeric growth in employment in professional and related occupations, projected 2002-12



Within the professional and related group, education, training, and library occupations; healthcare practitioner and technical occupations; and computer and mathematical science occupations are expected to grow rapidly and gain many new jobs.

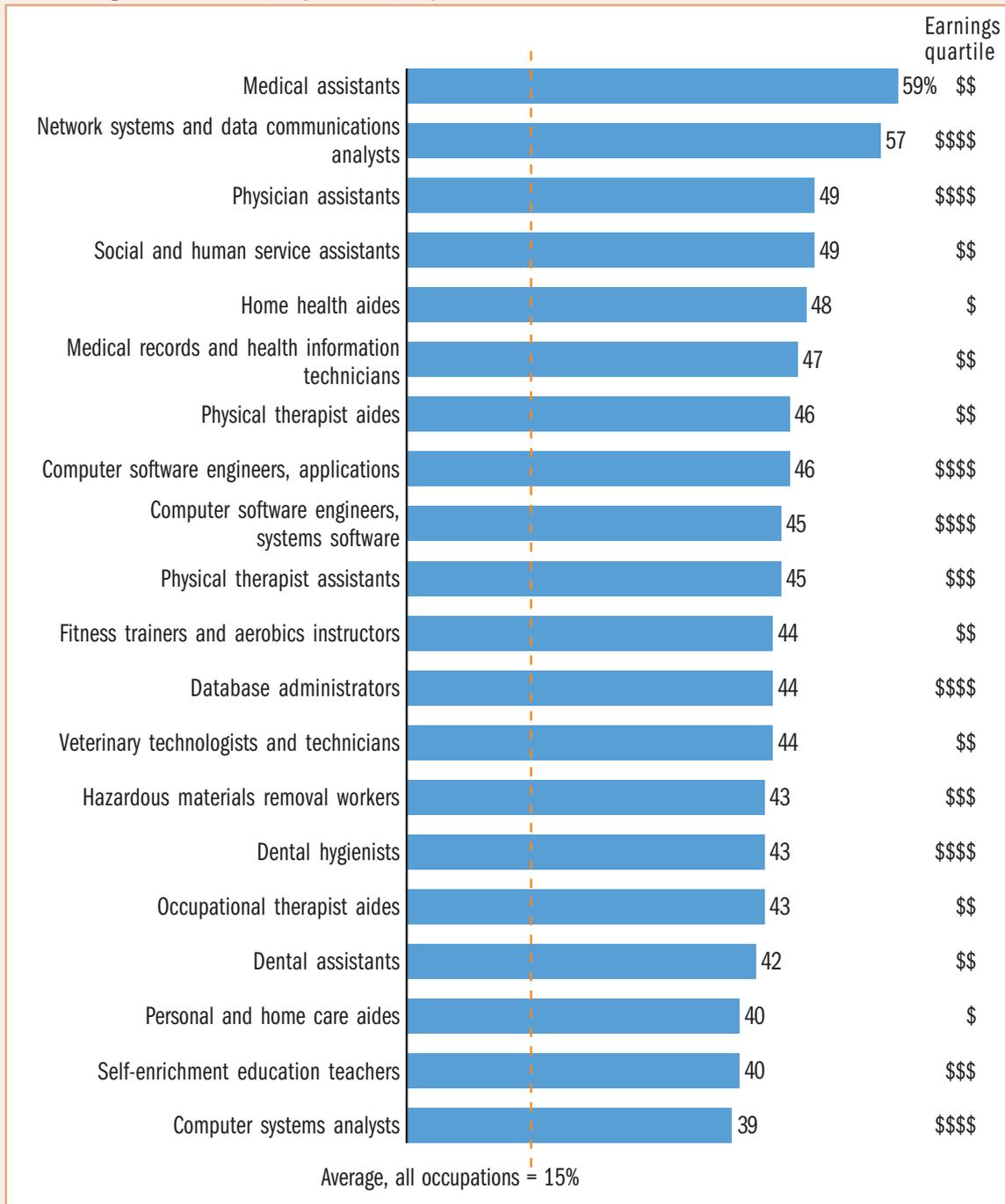
Percent growth in employment in professional and related occupations, projected 2002-12



Computer and mathematical science occupations are projected to grow more than twice as fast as the average for all occupations. But growth in computer specialist occupations will be slower than it was during the 1992-2002 decade, as the software industry matures and as routine work increasingly is outsourced overseas.

## Fastest growing occupations

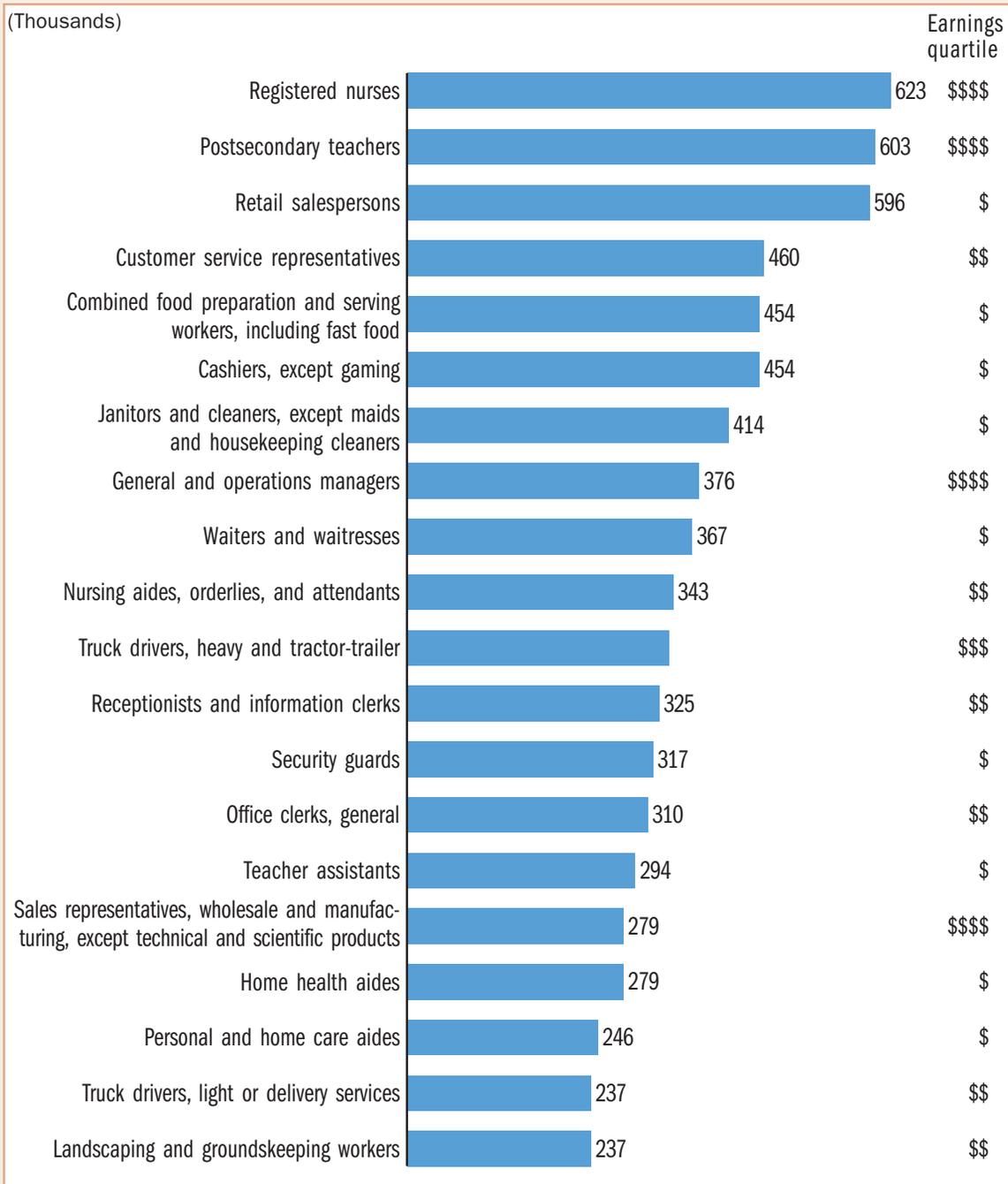
Percent growth in employment, projected 2002-12



**Sixteen of the 20 projected fastest growing occupations are in healthcare or computers. Earnings are highest for workers in computer-related jobs.**

## Most new jobs

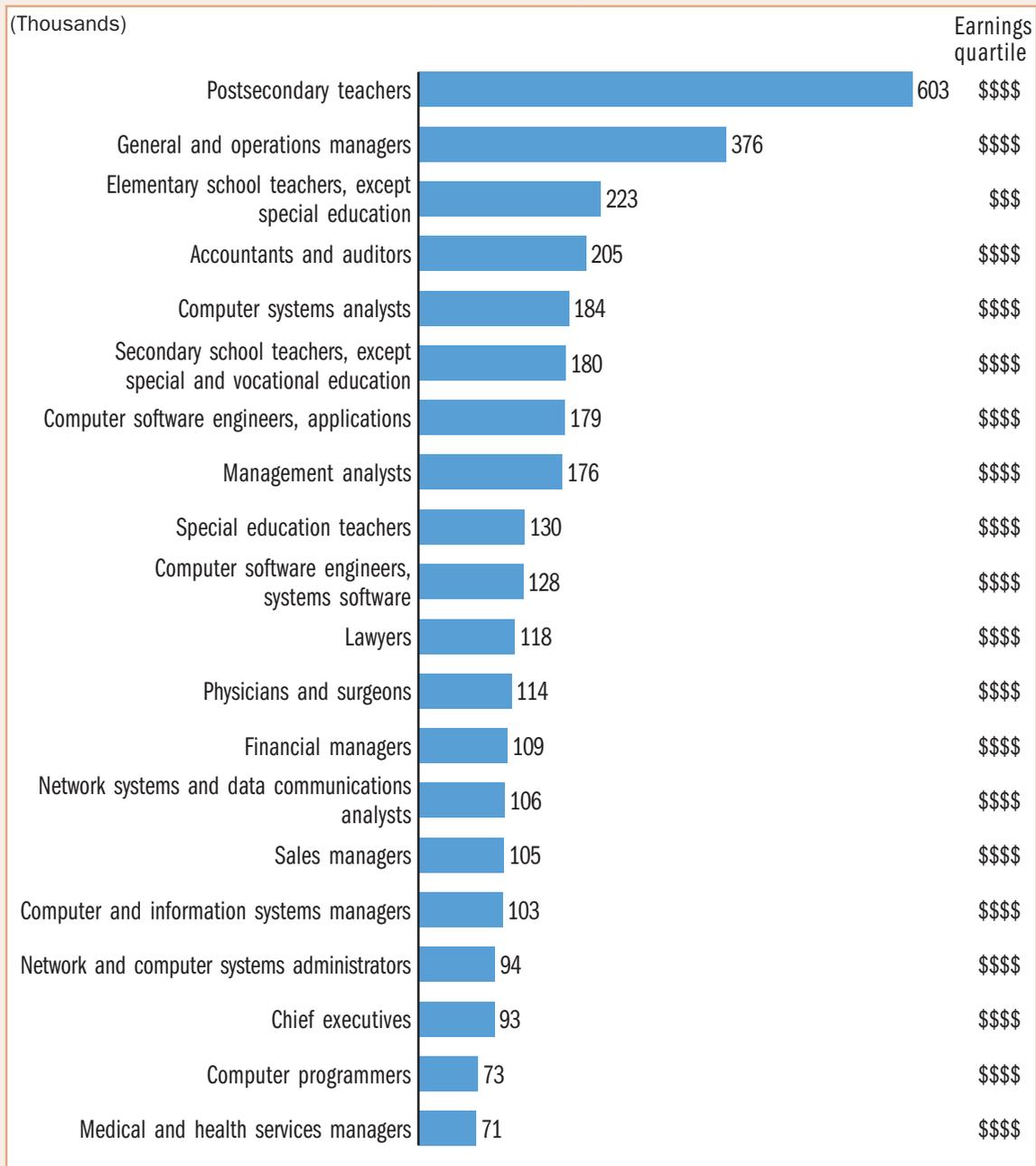
Numeric growth in employment, projected 2002-12



The occupations expected to gain the most new jobs are diverse. Workers in these occupations have a wide range of education and training requirements, earnings, and job responsibilities.

## Most new jobs, highest paying: Bachelor's or graduate degree

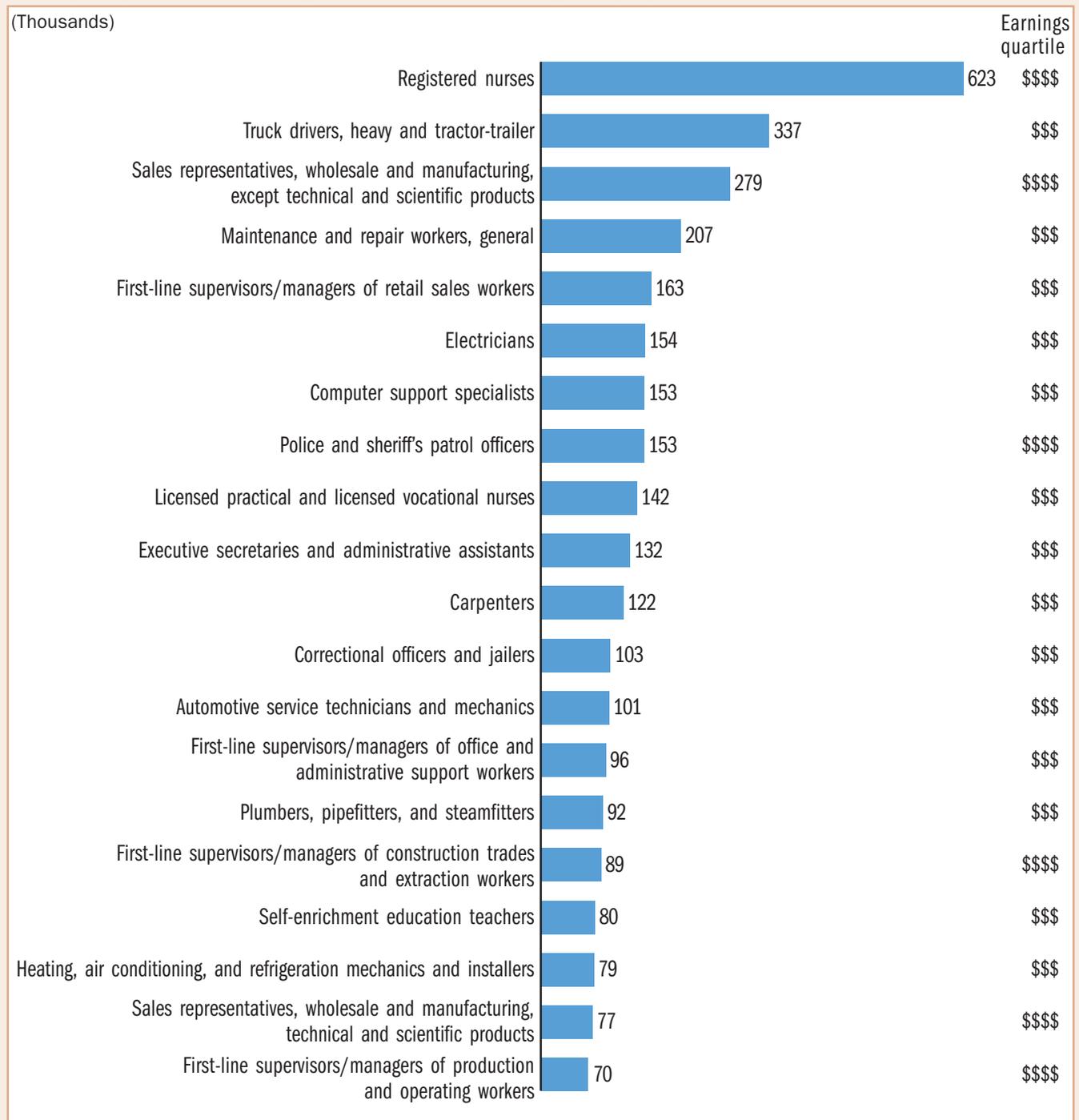
Numeric change in employment in the top 20 large-growth, high-paying occupations that usually require a bachelor's or graduate degree, projected 2002-12



**All of these occupations are projected to add at least 70,000 new jobs over the projections decade. In many of these high-paying occupations, workers usually have experience in addition to a bachelor's degree. In some of these occupations, workers have a graduate degree.**

## Most new jobs, highest paying: Less than a bachelor's degree

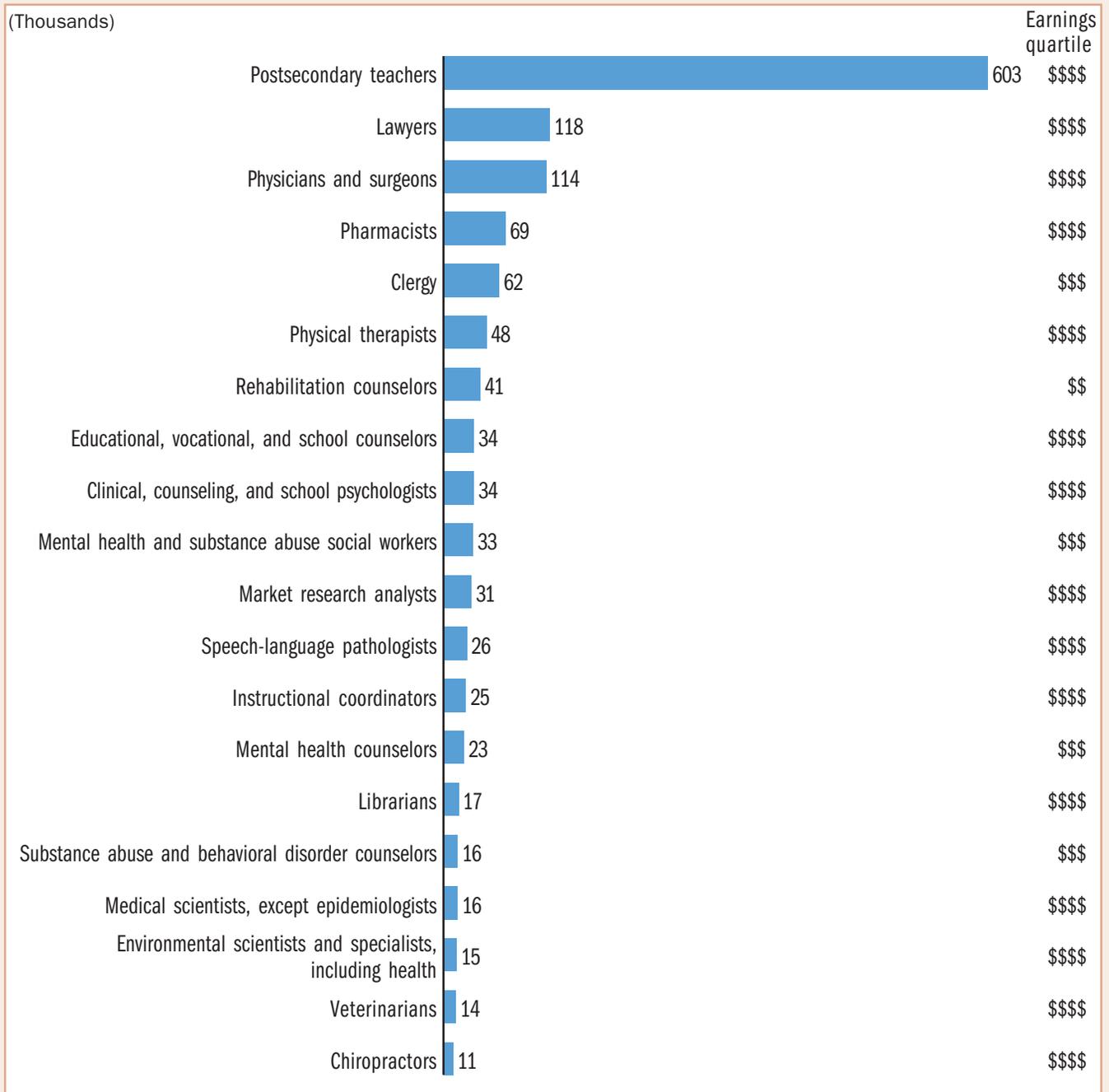
Numeric change in employment in the top 20 large-growth, high-paying occupations that usually require less training than a bachelor's degree, projected 2002-12



Many large-growth, high-paying occupations are projected to be available for workers who usually have on-the-job training or some education other than a bachelor's degree.

## Most new jobs: Graduate degree

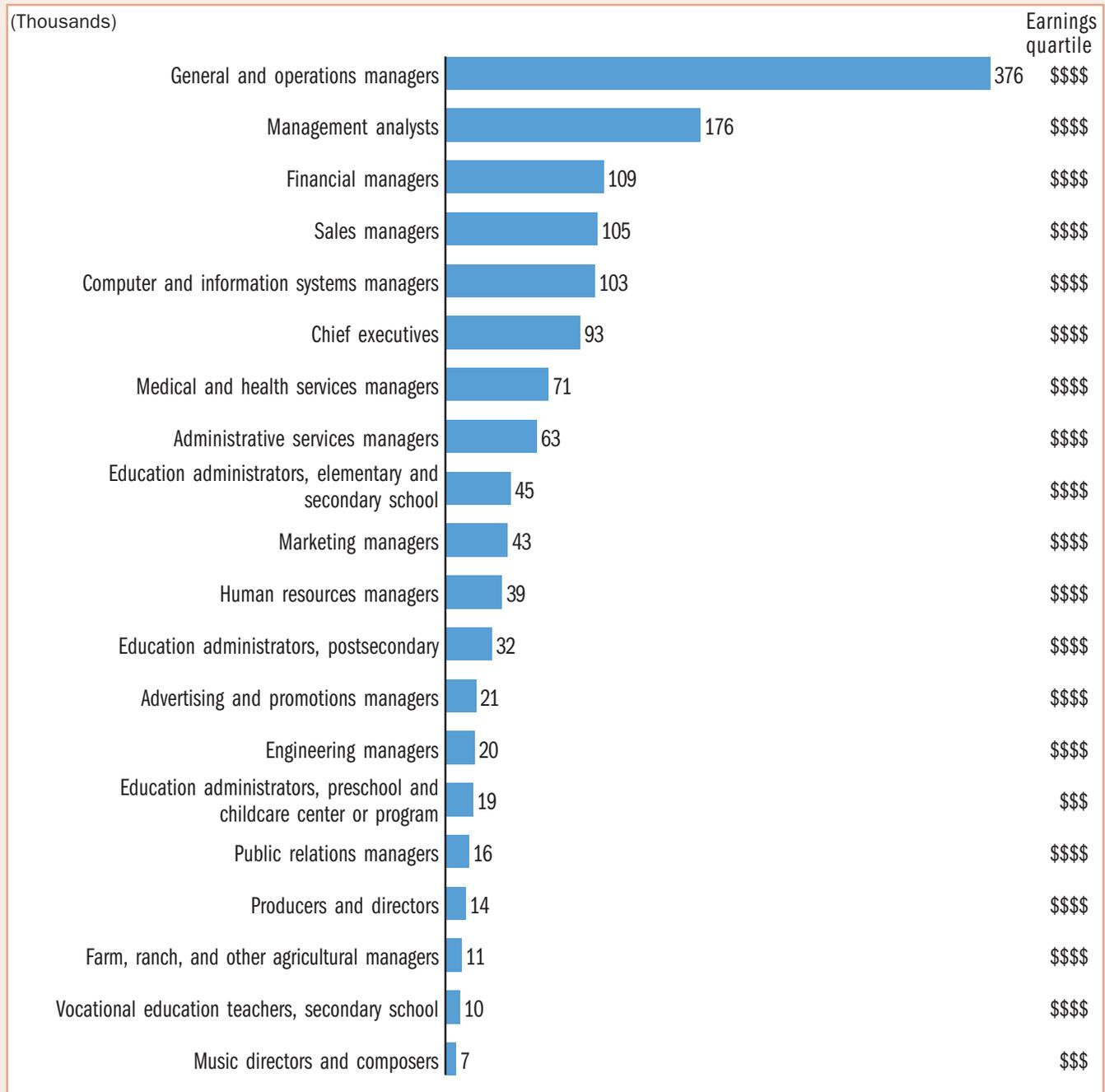
Numeric change in employment in the top 20 large-growth occupations that usually require a master's, doctoral, or first-professional degree, projected 2002-12



Job growth in these occupations, many of which are among the highest paid in the economy, is expected to be greatest in occupations related to healthcare and to counseling. Growth in education-related occupations is driven, in part, by increasing college enrollments and the demand for specialized services.

## Most new jobs: Bachelor's or graduate degree plus experience

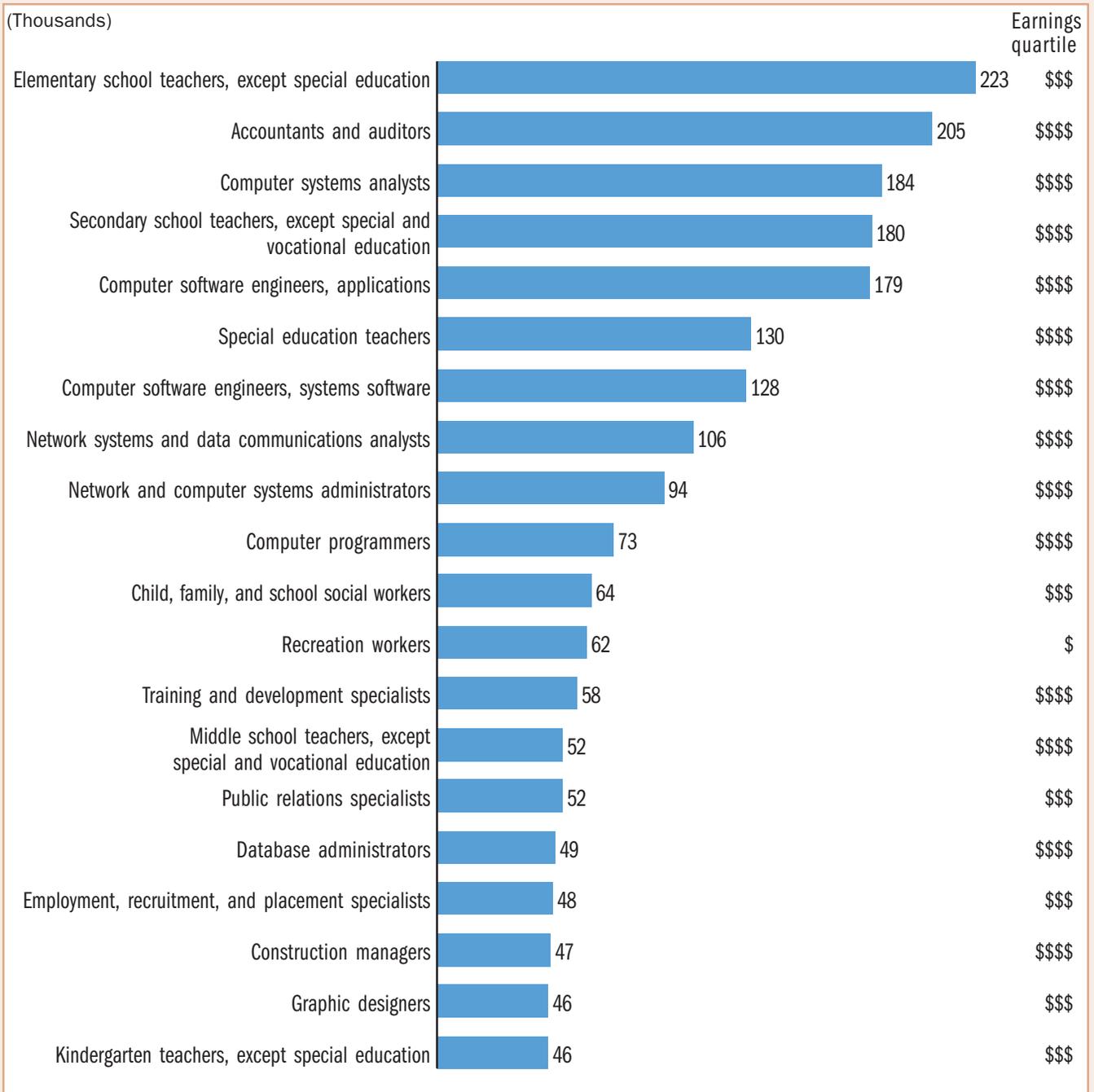
Numeric change in employment in the top 20 large-growth occupations that usually require a bachelor's or graduate degree plus work experience, projected 2002-12



Nearly all of the occupations shown here have managerial responsibilities, reflecting the experience these workers usually have. Earnings are high or very high.

### Most new jobs: Bachelor's degree

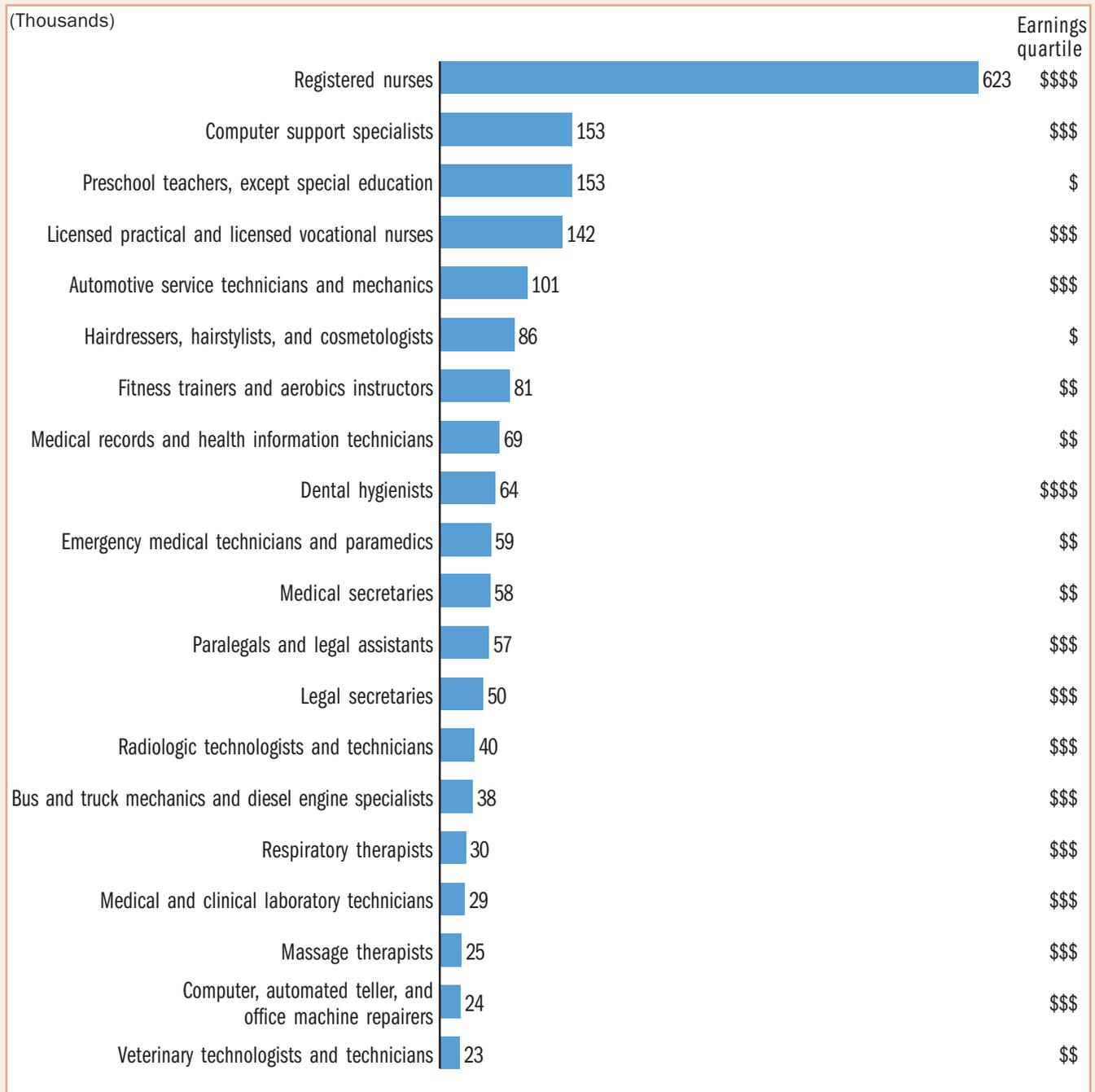
Numeric change in employment in the top 20 large-growth occupations that usually require a bachelor's degree, projected 2002-12



**Most of these occupations relate to business, computers, and education. Almost all have high or very high earnings.**

## Most new jobs: Associate degree or postsecondary vocational award

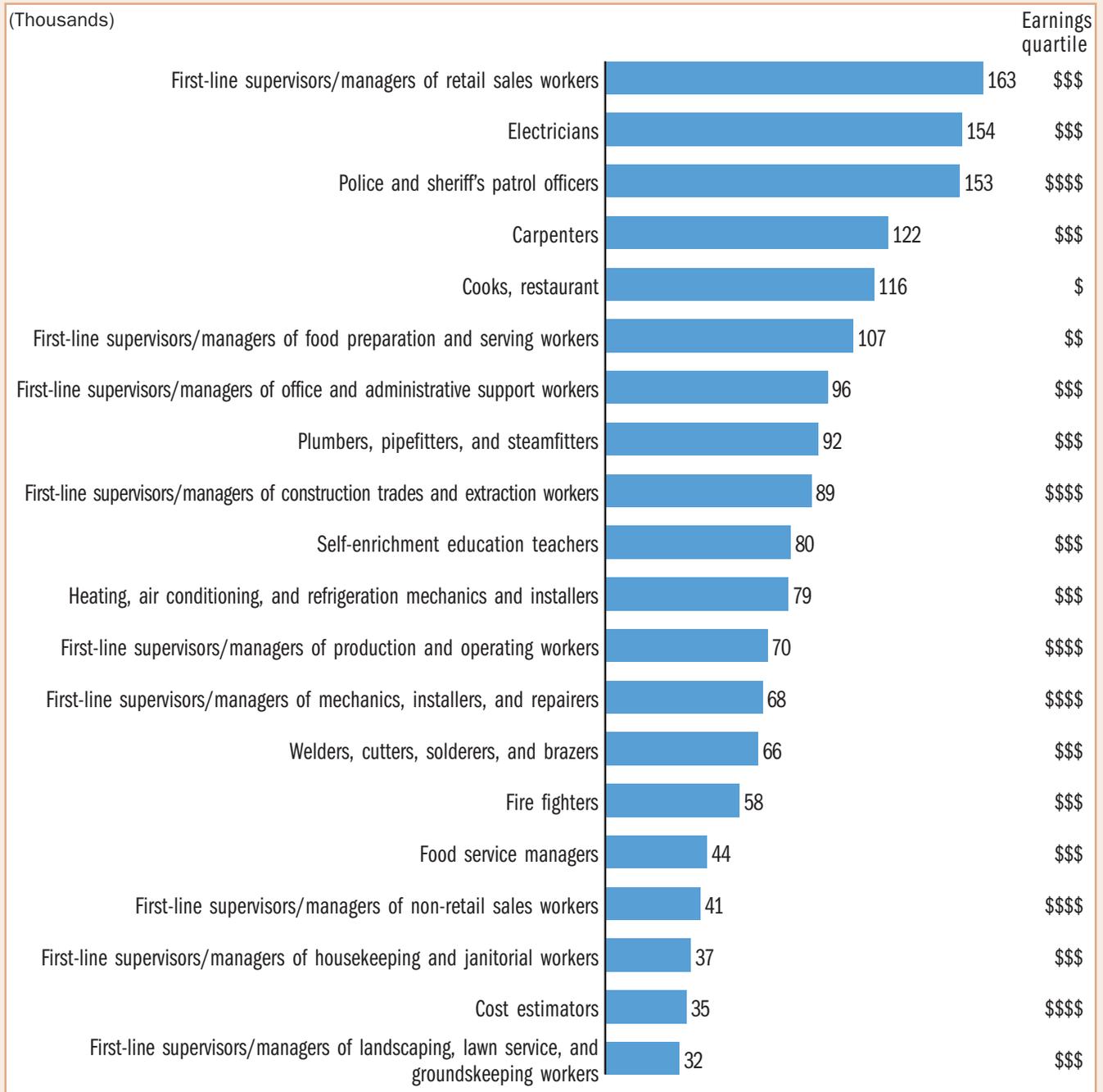
Numeric change in employment in the top 20 large-growth occupations that usually require an associate degree or postsecondary vocational award, projected 2002-12



At this level of training, occupations that are projected to gain the most new jobs have varied tasks, job settings, and earnings. Registered nurses are projected to have an especially large job increase, due, in part, to the healthcare needs of an aging population.

## Most new jobs: Work experience or long-term on-the-job training

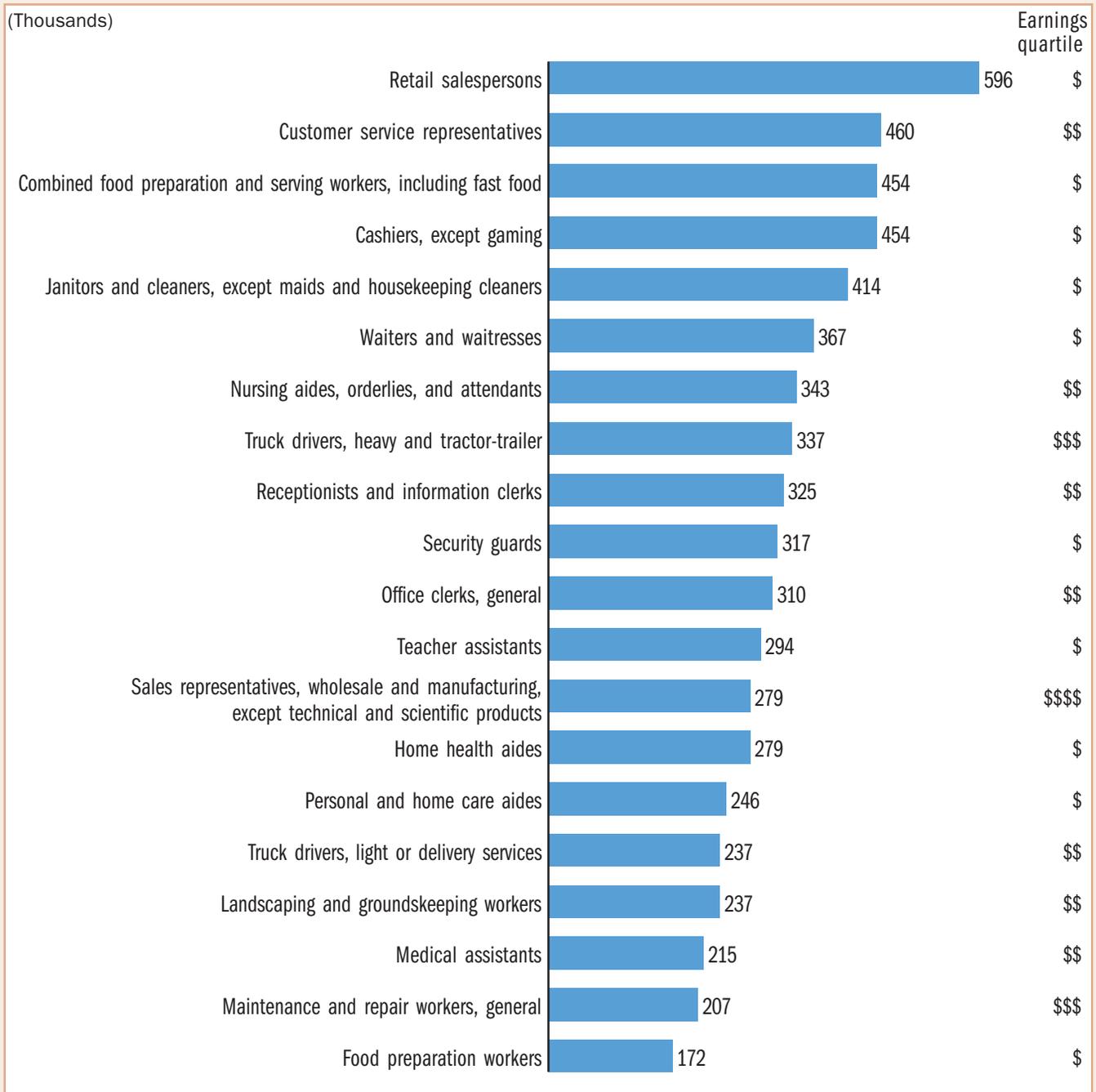
Numeric change in employment in the top 20 large-growth occupations that usually require work experience or long-term on-the-job training, projected 2002-12



**Supervisory occupations, which often require this level of training, are projected to gain many jobs over the projections decade. Most have high earnings; several have very high earnings.**

## Most new jobs: Short- or moderate-term on-the-job training

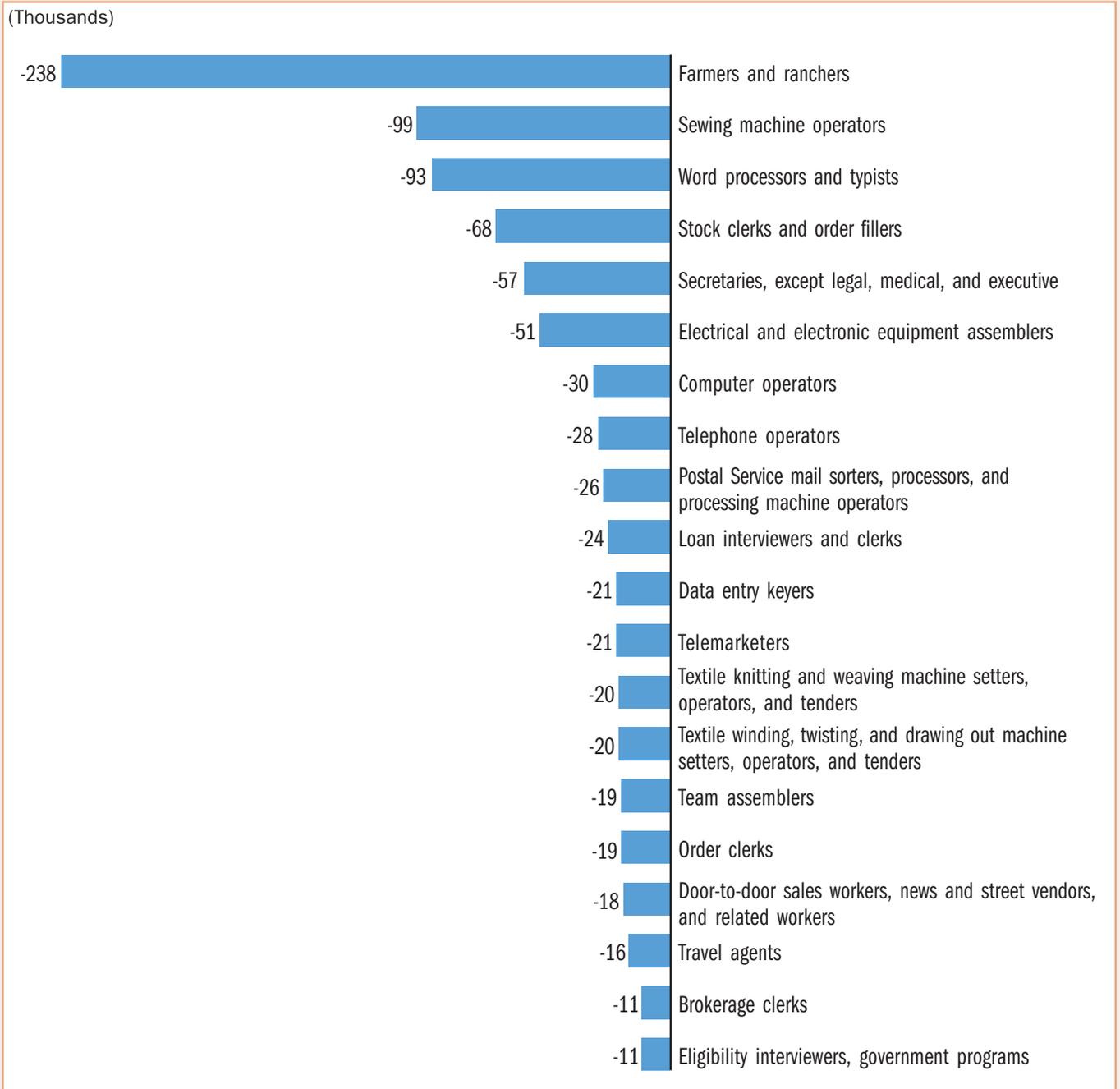
Numeric change in employment in the top 20 large-growth occupations that usually require short- or moderate-term on-the-job training, projected 2002-12



Among the occupations shown here, many new jobs are expected to be in service occupations, such as food preparation workers, security guards, and janitors and cleaners. Earnings vary, from very high to very low.

### Most job losses

Numeric change in employment by occupation, projected 2002-12

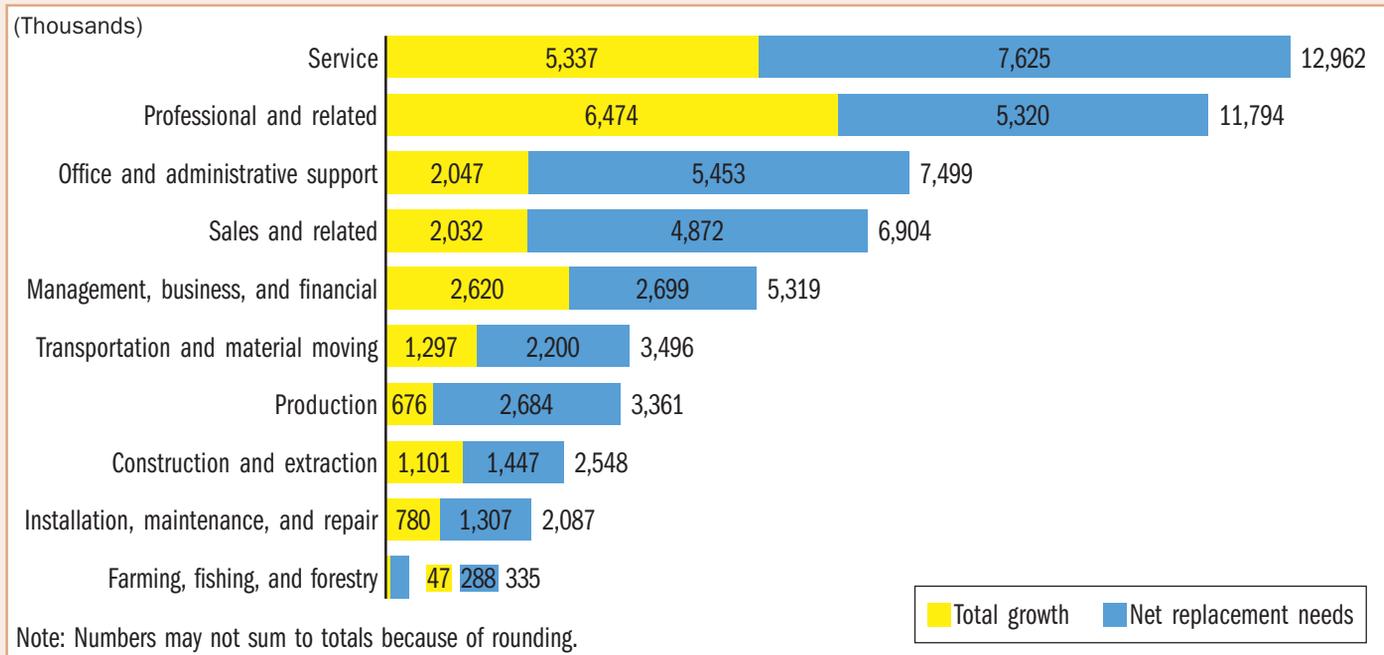


The occupations expected to have the largest employment declines are in farming and administrative support—two areas in which technology is increasing worker productivity.

Although declining employment may lead to unfavorable job prospects, the need to replace workers who leave an occupation often creates some job openings.

## Job openings

Job openings by major occupational group, projected 2002-12

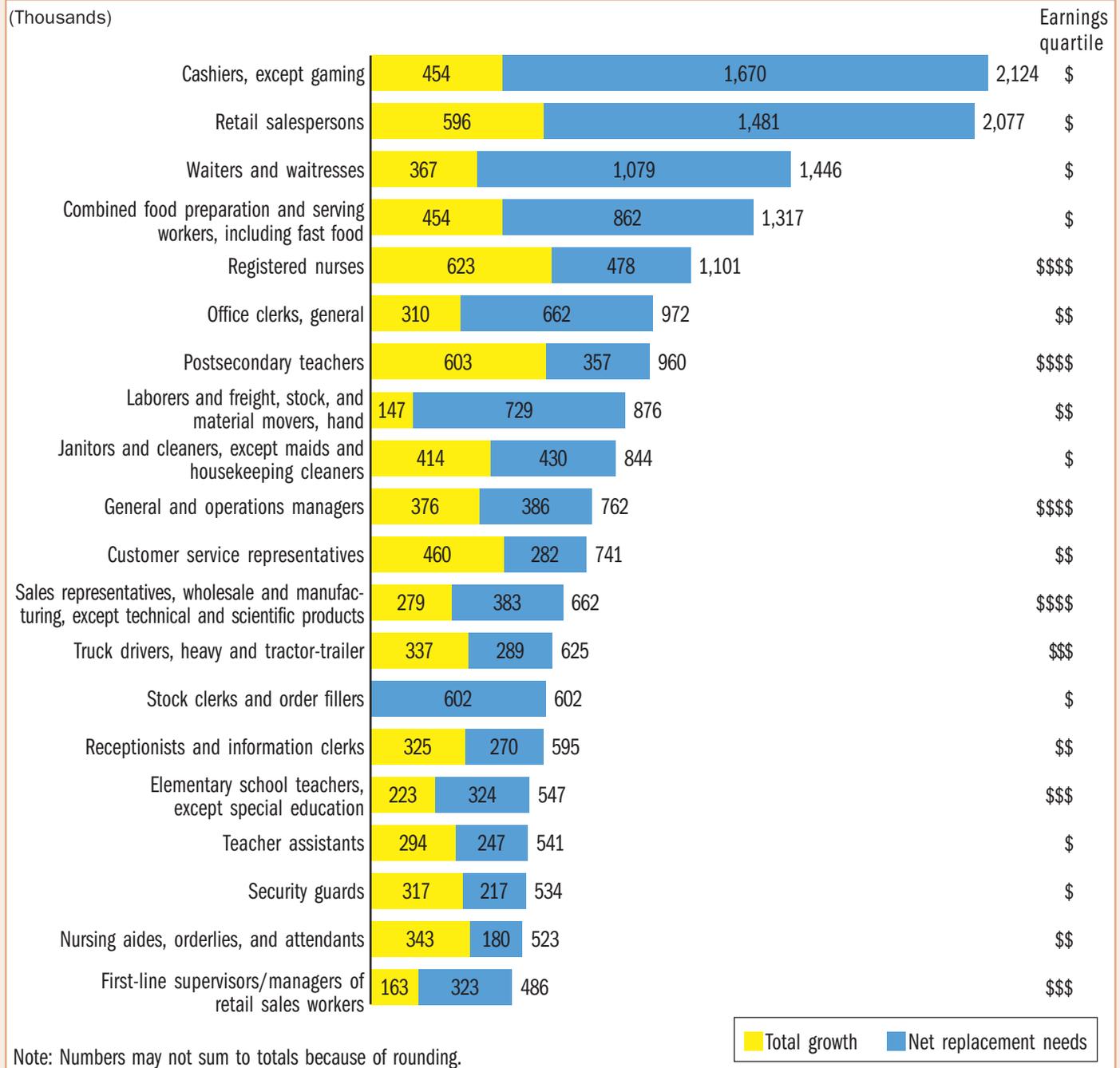


Employment prospects depend on more than job growth. Openings for new workers occur not only when jobs are added to the economy but also when current workers permanently leave an occupation. In fact, the need to replace workers who leave an occupation is expected to create more openings than job growth will.

This chart shows the jobs projected to be available for workers who are new to an occupation. The number of job openings due to growth may be higher than overall job growth shown in previous charts because here, job losses are not subtracted from growth. Instead, these losses are reflected in the number of workers needed to replace those who have left an occupation.

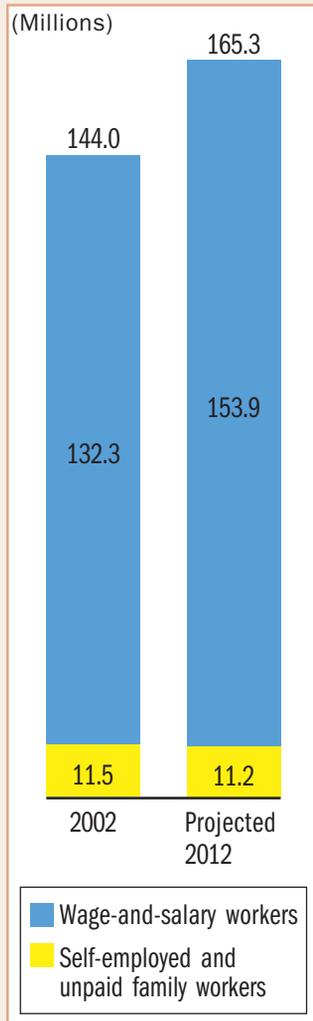
## Most job openings for workers new to an occupation

Job openings due to growth and net replacement needs, projected 2002-12



Some of these occupations, most notably registered nurses and postsecondary teachers, are projected to gain most of their openings from high growth. Others, including cashiers and waiters and waitresses, are expected to have large replacement needs due to high turnover. Openings for retail salespersons are expected to be among the most numerous because of both growth and replacement. Earnings vary, from very high to very low.

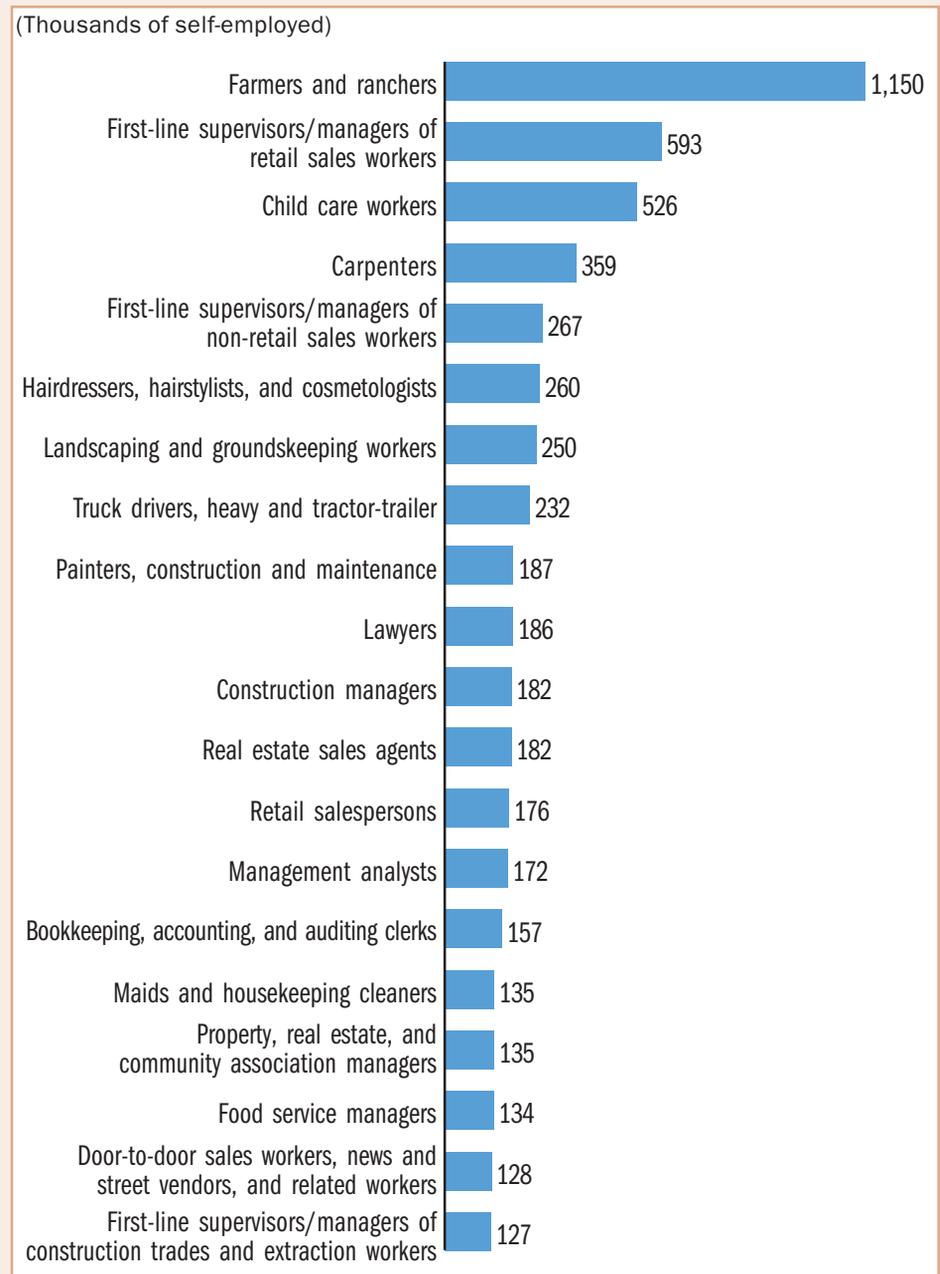
## Employment by class of worker, 2002 and projected 2012



Most of the new jobs added to the economy are projected to be for wage-and-salary workers. Employment of these workers is expected to increase from 132 million to about 154 million, a gain of about 22 million jobs. Employment of self-employed and unpaid family workers is projected to change little through 2012.

## Self-employment

### Occupations with the most self-employed workers, 2002



Self-employment is common in all types of occupations. In 2002, it was most prevalent among farmers and ranchers, whose incidence of self-employment was nearly twice that of first-line supervisors/managers of retail sales workers—the occupation that had the next largest number of self-employed workers. Self-employed first-line supervisors usually own their own stores or contracting or consulting businesses.