

A New Look at Education Requirements and Jobs

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Association of Public Data Users
Annual Conference
September 13, 2012

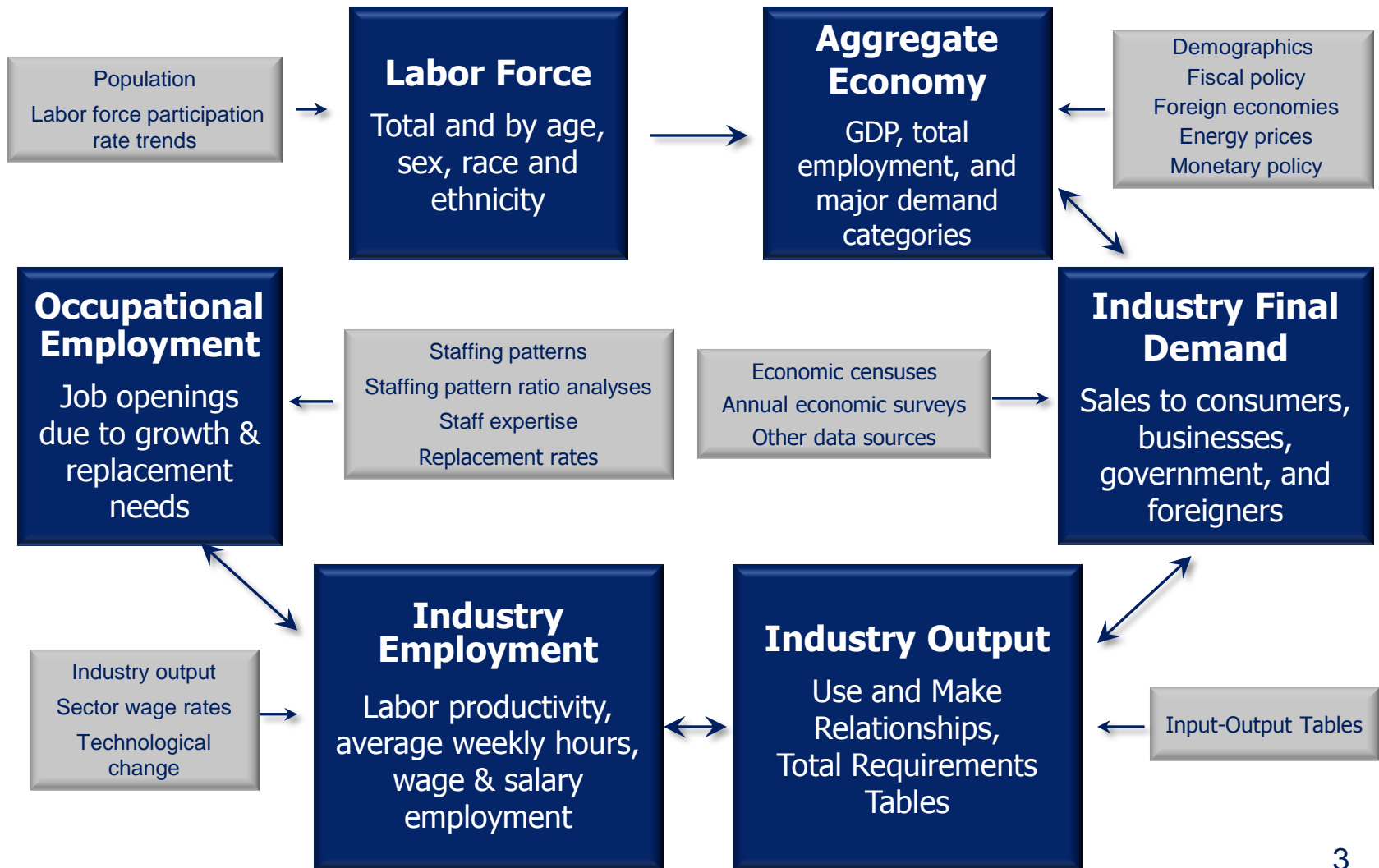


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BLS Employment Projections Background

- 10-year projections made every 2 years
 - ▶ First introduced in 1960
 - ▶ Most recent projections for 2010-2020
- Very detailed
 - ▶ 750 occupations and 300 industries
- BLS produces national projections
 - ▶ States produce state and area projections

How BLS makes Employment Projections



Major data sets used

- Population and labor force trends
 - ▶ Population by age, gender, race/ethnicity (Census)
 - ▶ Labor force participation rates (BLS)
- Macroeconomic data (BEA, et.al.)
- Industry trends
 - ▶ Output (BEA, Census)
 - ▶ Productivity (BLS)
 - ▶ Employment, hours, wages (BLS, Census)

Major data sets used

- Occupational Employment Statistics (OES) survey (BLS)
 - ▶ Occupational staffing patterns of industries
 - ▶ Basis for the National Employment Matrix
 - ▶ Wages for detailed occupations
- O*NET information (ETA)
 - ▶ Education and training

Some facts about the projections

- Includes all types of jobs
 - ▶ Wage and salary, self-employed, unpaid family workers; full-time and part-time
- Includes all industries and occupations
- Based on assumption of full employment in the target year (2020)
 - ▶ And other assumptions
 - ▶ All assumptions are published

Some facts about the projections

- For occupations, we show
 - ▶ Employment: 2010 and 2020 projected
 - ▶ Projected employment change (new jobs) for 2010-2020
 - ▶ Projected job openings for 2010-2020
 - New jobs plus replacement needs

How projections are used

- Career information and exploration
 - ▶ Students and their parents and counselors
 - ▶ Adult job seekers and career changers
 - ▶ BLS *Occupational Outlook Handbook*
- Education and training
 - ▶ Setting policy
 - ▶ Strategic planning and funding decisions
 - ▶ Program planning
 - ▶ Curriculum development

Relating projections and education and training

- For both career exploration and policy decisions, users want to know:
 - ▶ What is the demand for workers with a college degree (or some other level of education)?
 - ▶ What training or experience is needed in different careers, in addition to formal education?

Educational attainment by occupation

| Occupation | Percent distribution of workers 25 years and older by educational attainment, by detailed occupation, 2009 | | | | | | |
|----------------------------------|--|-----------------------------------|-------------------------|--------------------|-------------------|-----------------|---------------------------------|
| | Less than high school diploma | High school diploma or equivalent | Some college, no degree | Associate's degree | Bachelor's degree | Master's degree | Doctoral or professional degree |
| Administrative Services Managers | 2.2 | 19.5 | 28.3 | 11.8 | 27.7 | 9.1 | 1.4 |
| Lawyers | 0.1 | 0.1 | 0.0 | 0.0 | 0.8 | 2.5 | 96.5 |
| Paralegals and Legal Assistants | 0.9 | 12.8 | 25.7 | 19.2 | 34.4 | 4.5 | 2.6 |
| Radio Operators | 2.3 | 18.9 | 29.1 | 14.7 | 30.3 | 4.0 | 0.7 |
| Waiters and Waitresses | 16.6 | 35.5 | 26.7 | 7.0 | 12.5 | 1.4 | 0.4 |
| Parking Lot Attendants | 20.1 | 40.3 | 20.2 | 6.5 | 10.8 | 1.4 | 0.7 |

Source: U.S. Census Bureau, American Community Survey, 2005-2009 5-year file.

BLS Education and Training Categories

- Three categories of information for each occupation:
 - ▶ Typical education needed for entry
 - ▶ Work experience in a related occupation
 - ▶ Typical on-the-job training needed to attain competency in the occupation

BLS Education and Training Categories

| Typical entry-level education |
|-----------------------------------|
| Doctoral or professional degree |
| Master's degree |
| Bachelor's degree |
| Associate's degree |
| Postsecondary non-degree award |
| Some college, no degree |
| High school diploma or equivalent |
| Less than high school |

| Work experience in a related occupation |
|---|
| More than 5 years |
| 1 to 5 years |
| Less than 1 year |
| None |

| Typical OJT needed to attain competency |
|---|
| Internship/residency |
| Apprenticeship |
| Long-term OJT (more than 1 year) |
| Moderate-term OJT (1 to 12 months) |
| Short-term OJT (less than 1 month) |
| None |

BLS Education and Training Categories

| Occupation | BLS education and training assignments | | |
|----------------------------------|--|---|---|
| | Typical entry-level education | Work experience in a related occupation | Typical OJT needed to attain competency |
| Administrative Services Managers | High school diploma or equivalent | 1 to 5 years | None |
| Lawyers | Doctoral or professional degree | None | None |
| Paralegals and Legal Assistants | Associate's degree | None | None |
| Radio Operators | High school diploma or equivalent | None | Short-term OJT |
| Waiters and Waitresses | Less than high school diploma | None | Short-term OJT |
| Parking Lot Attendants | Less than high school diploma | None | Short-term OJT |

BLS Education and Training Categories

- Allows analysis of projections for occupations assigned to each category
 - ▶ Data summed for occupations found in each category
 - E.g., projected new jobs in occupations assigned bachelor's degree as typical entry-level education
- Allows analysis at the intersections of typical entry-level education, work experience, and OJT

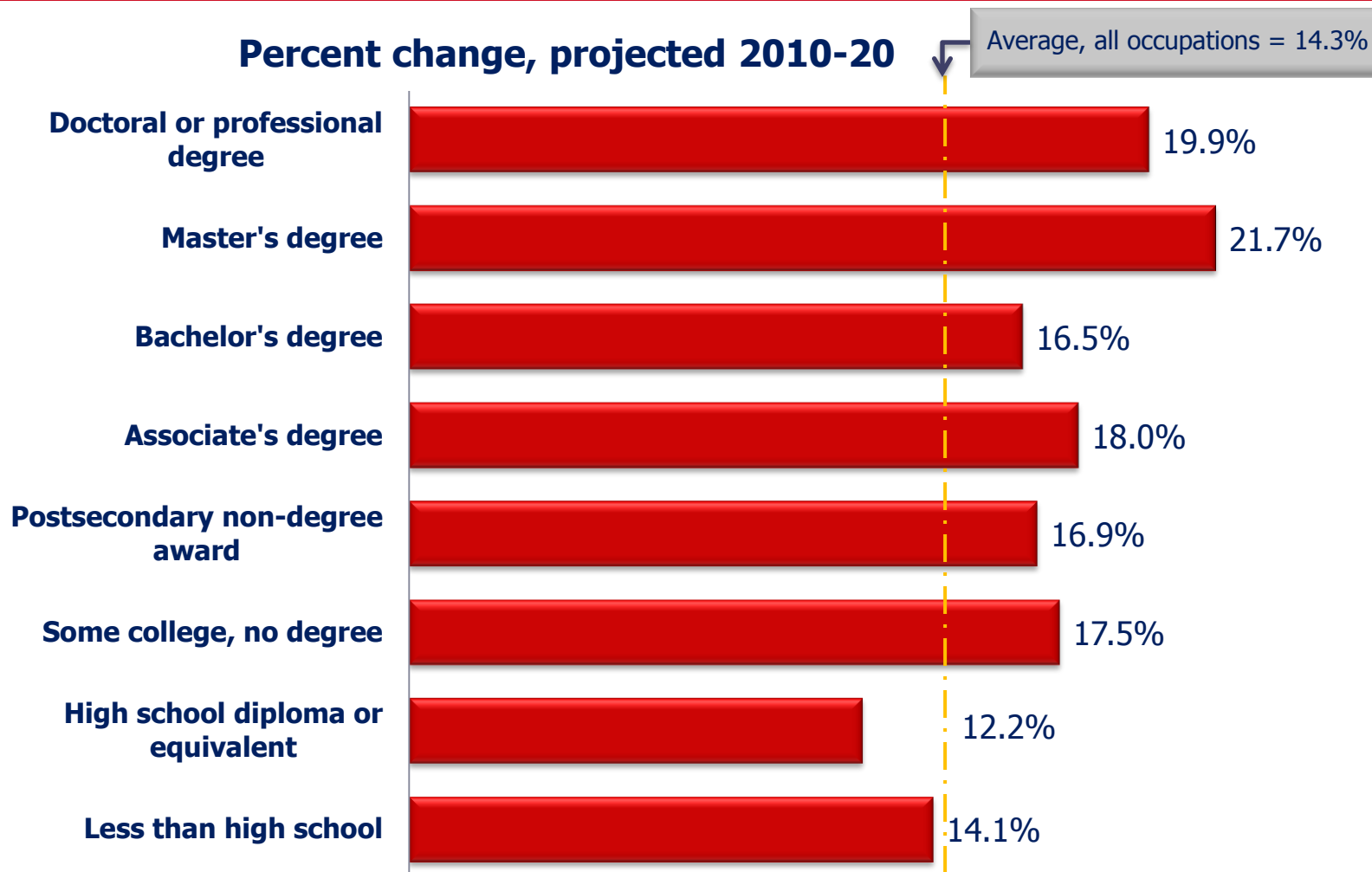
BLS Education and Training Categories

- Based on analyses of qualitative and quantitative information
 - ▶ ACS education attainment data
 - ▶ Education, work experience, and on-the-job training requirements data from O*NET
 - ▶ Qualitative information from educators, employers, workers in the occupation, training experts, and professional and trade associations and unions
- Do not depict multiple paths of entry
- Do not project change in entry requirements over time

Employment by Typical Entry-level Education Category: 2010

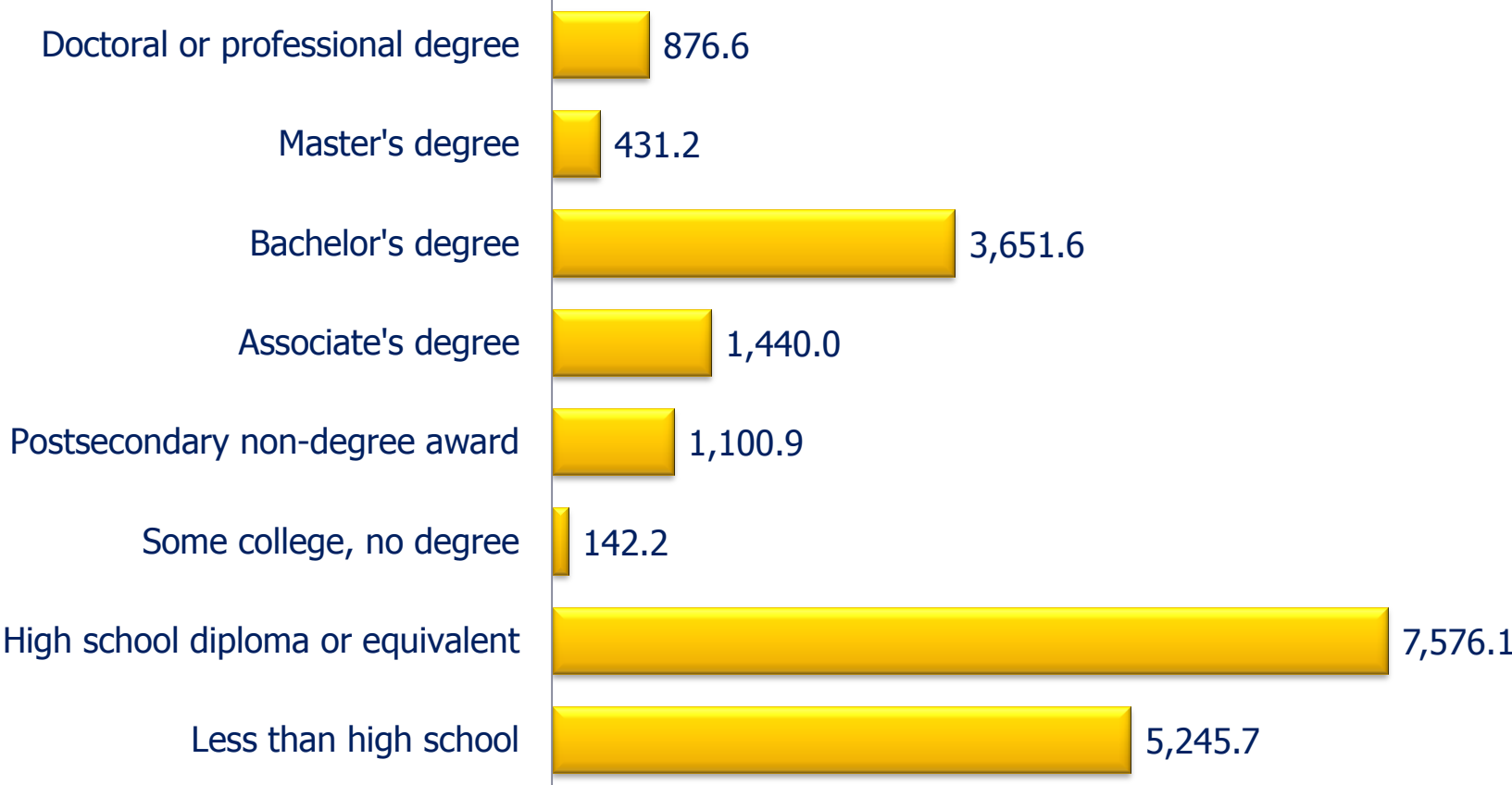
| | Thousands of jobs | Median annual Wages, May 2010 |
|-----------------------------------|-------------------|-------------------------------|
| Doctoral or professional degree | 4,409.7 | \$87,500 |
| Master's degree | 1,986.0 | \$60,240 |
| Bachelor's degree | 22,171.1 | \$63,430 |
| Associate's degree | 7,994.6 | \$61,590 |
| Postsecondary non-degree award | 6,524.0 | \$34,220 |
| Some college, no degree | 811.6 | \$44,350 |
| High school diploma or equivalent | 62,089.6 | \$34,180 |
| Less than high school | 37,081.7 | \$20,070 |

Percent Change in Employment by Typical Entry-level Education Category

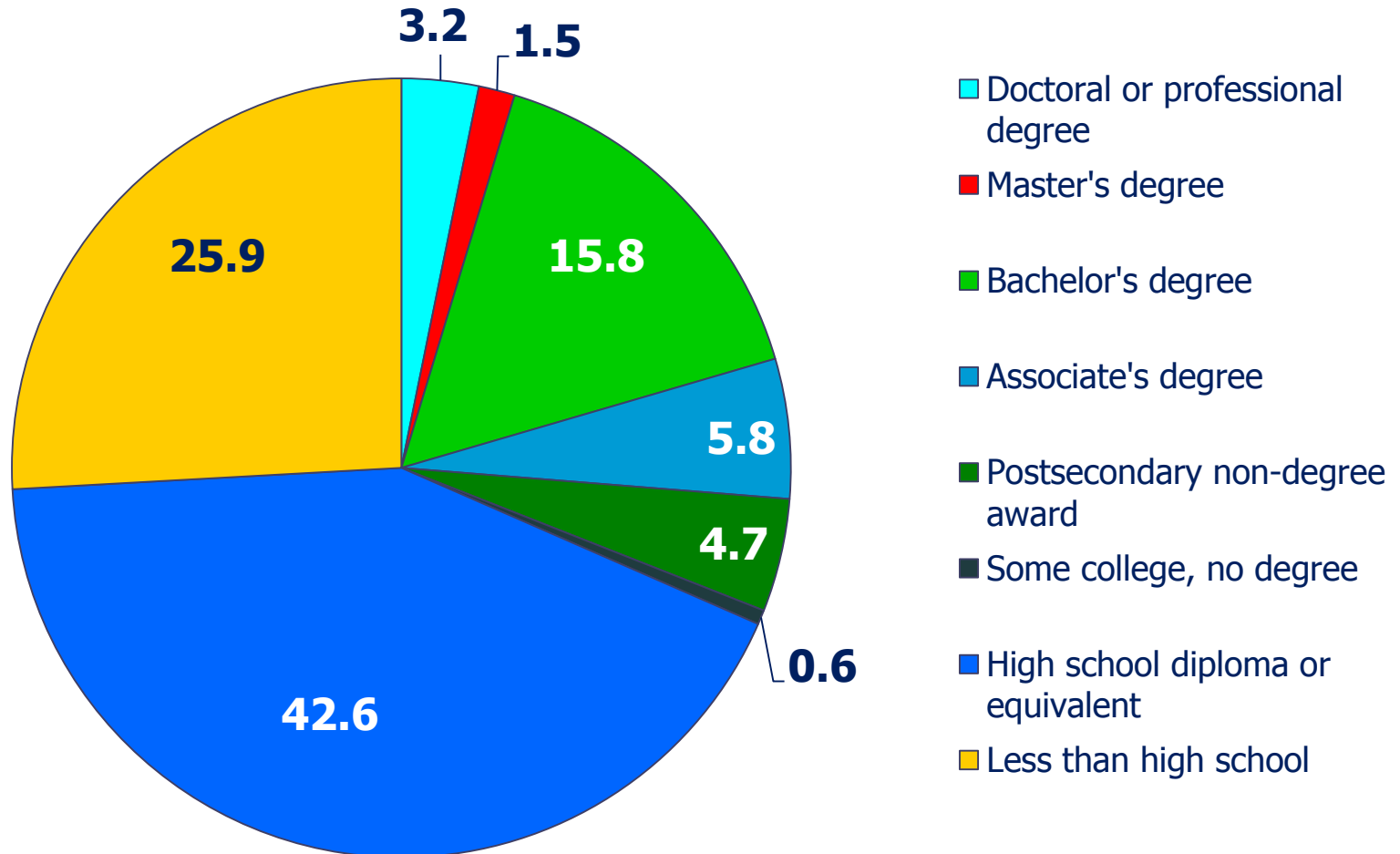


Employment Change by Typical Entry-level Education Category

Thousands of jobs, projected 2010-20



Percent distribution of employment by typical entry-level education of occupation, projected 2020



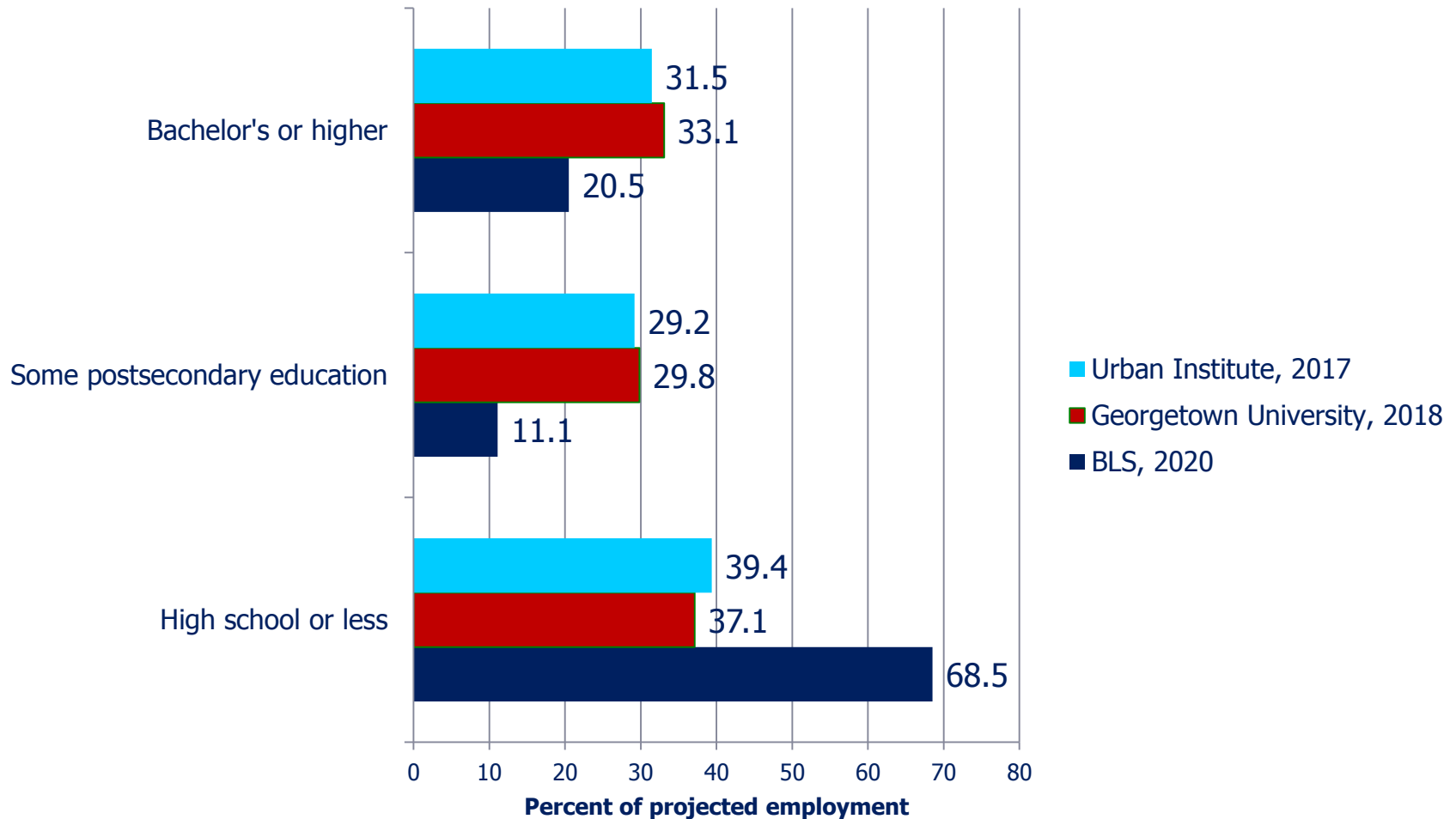
Other approaches, different results

- A “computational” approach
 - ▶ Project change in education attainment of labor force
 - ▶ Apply projected change to education attainment distribution in each occupation
 - ▶ Apply projected education attainment distribution to projected employment in each occupation
 - ▶ Sum results by education attainment

Other approaches, different results

- Georgetown University, Center on Education and the Workforce, 2010
 - ▶ By 2018, 23 percent of jobs require Bachelor's degree
- Urban Institute, Loprest & Mitchell, 2012
 - ▶ By 2017, 20.9 percent of jobs require Bachelor's degree
- BLS
 - ▶ By 2020, 15.8 percent of jobs in occupations with Bachelor's degree as typical entry-level education

Other approaches, different results



Other approaches, different results

■ Critical assumptions

- ▶ “..the present distribution of education among the employed prime-age population is the best single indicator of present demand for education.”
Georgetown CEW
- ▶ “... We do not observe the educational level requirements of jobs, but the education level of those who are employed in the jobs.” *Urban Institute*
- ▶ “... that the education attained by the average U.S. worker for a given occupation indicates the years of education demanded by employers..” *Brookings Institution, Rothwell 2012*

Closing thoughts

- Policymakers need to understand the assumptions made in analysis used for high-stakes decisions.
- There is a gap in data about the connection between education and the labor market
 - ▶ ACS is the best data on education attainment by occupation
 - But ACS does not measure what employers require.

Contact Information

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